


**DRAFT ENVIRONMENTAL IMPACT ASSESSMENT**  
&  
**ENVIRONMENT MANAGEMENT PLAN**

FOR OBTAINING

**Environmental Clearance under EIA Notification – 2006**  
**Schedule Sl. No. 1 (a) (i): Mining Project**

**“B1” CATEGORY (Cluster) – MINOR MINERAL – CLUSTER – PATTA LAND**  
**MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY**

**Cluster Extent – 5.28.41 Ha**

PROJECT PROPONENTS		
<b>Thiru. R. Karthick,</b> S/o. Rajendran, No.72, Kavilipalayampudhur, Velampalayam, Tiruppur District, Tamil Nadu – 641 652. <b>Extent: 1.61.95 Ha</b>	<b>Tmt. G. Susila,</b> W/o. Gunasekaran, No. 1/241, Milk society opposite, Kuppusamynaidupuram, Semmipalayam, Palladam Tiruppur District-641 662. <b>Extent: 1.21.46 Ha</b>	
PROJECT LOCATION	PROPOSED PRODUCTION	
S.F.Nos.: 984/2A1(Part) & 986/B1(Part)  Mudalipalayam Village,  Kangayam Taluk,  Tiruppur District.	<b>Reserves for P1:</b> 1,89,560 m <sup>3</sup> of Rough Stone, & 24,000 m <sup>3</sup> of Gravel  Peak Production = 39,600m <sup>3</sup> of Rough Stone & 10,560 m <sup>3</sup> of Gravel  Proposed Depth = <b>37m bgl</b>	<b>Reserves for P2:</b> 94,511 m <sup>3</sup> of Rough Stone, & 4,176 m <sup>3</sup> of Gravel  Peak Production = 19,526m <sup>3</sup> of Rough Stone & 4,176 m <sup>3</sup> of Gravel  Proposed Depth = <b>42m bgl</b>
<b>ToR Identification</b>	<b>TO24B0108TN5280988N Dated: 24/05/2024 – P1</b> <b>TO24B0108TN5642030N Dated: 07/09/2024 – P2</b>	
<b>Environmental Consultant</b> <b>GEO EXPLORATION AND MINING SOLUTIONS</b> Old No. 260-B, New No. 17, Advaitha Ashram Road, Alagapuram, Salem – 636 004, Tamil Nadu, India <b>Accredited for sector 1 Cat ‘A’, sector 31 &amp; 38 Cat ‘B’</b> <b>Certificate No : NABET/EIA/2225/RA 0276</b> Phone: 0427-2431989, Email: info@geoexploration@gmail.com Web: www.gemssalem.com	 <b>Laboratory</b> <b>EHS 360 LABS PRIVATE LIMITED,</b> <b>Approved by ISO:9001:2015, NABL, FSSAI,</b> <b>Experts in QHSE</b>  <b>10/2 Ground floor, 50<sup>th</sup> street, 7<sup>th</sup> Avenue,</b> <b>Ashok Nagar, Chennai – 600 083.</b>	
<b>Baseline Monitoring Period</b>		
<b>MARCH TO MAY 2024</b>		
<b>AUGUST 2024</b>		

## **UNDERTAKING**

I R. Karthick given undertaking that this EIA & EMP report prepared for our Rough Stone and Gravel quarry situated in S.F. No 984/2A1(Part) over an extent of 1.61.95Ha in Mudalipalayam Village, Kangayam Taluk, Tiruppur District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide ToR Identification: T024B0108TN5280988N Dated: 24/05/2024. I hereby assured that the Data's submitted and information given by me is true and correct to the best of my knowledge.

Signature of the Project Proponent



R. Karthick

Place: Tiruppur

Dated:

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## **UNDERTAKING**

I G. Susila given undertaking that this EIA & EMP report prepared for our Rough Stone and Gravel quarry situated in S.F. No 986/B1(Part) over an extent of 1.21.46Ha in Mudalipalayam Village, Kangayam Taluk, Tiruppur District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide ToR Identification: T024B0108TN5642030N Dated: 07/06/2024. I hereby assured that the Data's submitted and information given by me is true and correct to the best of my knowledge.

Signature of the Project Proponent



G. Susila

Place: Tiruppur

Dated:

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## **DECLARATION**

I Dr. M.Ifthikhar Ahmed – EIA Co Ordinator declare that the EIA & EMP report for the Mudalipalayam Rough stone and Gravel quarry in S.F. 984/2A1(Part) and 986/B1(Part), of 5.28.41Ha in Mudalipalayam Village, Kangayam Taluk, Tiruppur District has been prepared by Geo Exploration and Mining Solutions, Salem, Tamil Nadu.

The Data's provided in the EIA report are true and correct to the best of my knowledge.

Signature of the EIA Co Ordinator



**Dr. M. Ifthikhar Ahmed**

**Managing Partner**

**M/s. Geo Exploration and Mining Solutions**

Place: Salem

Dated:

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For easy representation of Proposed and Existing, Expired and Abandoned Quarries in the Cluster are given unique codes and identifies and studied in this EIA/ EMP Report.

<b>PROPOSED QUARRIES</b>					
<b>CODE</b>	<b>Name of the Owner</b>	<b>Village</b>	<b>S.F. Nos</b>	<b>Extent in Ha</b>	<b>Status</b>
<b>P1</b>	<b>Thiru.R. Karthick,</b> S/o. Rajendran, No.72, Kavilipalayampudhur, Velampalayam, Tiruppur District, Tamil Nadu – 641 652	Mudalipalayam	984/2A1(Part)	1.61.95 Ha	ToR Identification: T024B0108TN5280988 N Dated: 24/05/2024.
<b>P2</b>	<b>Tmt. G. Susila,</b> W/o. Gunasekaran, No. 1/241, Milk society opposite, Kuppusamynaidupuram, Semmipalayam, Palladam Tiruppur District-641 662	Mudalipalayam	986/B1(Part)	1.21.46 Ha	ToR Identification: T024B0108TN5642030 N Dated: 07/06/2024.
<b>TOTAL EXTENT</b>				<b>2.83.41</b>	
<b>EXISTING QUARRIES</b>					
<b>CODE</b>	<b>Name of the Owner</b>	<b>Village</b>	<b>S.F. Nos</b>	<b>Extent in Ha</b>	<b>Status</b>
E-1	M/s. Sri Muthukumar Blue Metals, No. 94-C, Kundadam, Uthiyur Road, Kolumanguli Village, Dharapuram Taluk, Tiruppur District – 638 703.	Mudalipalayam	986/B2A (P)	2.45.0	22.01.2024 to 21.01.20234
<b>TOTAL EXTENT</b>				<b>2.45.0</b>	
<b>TOTAL CLUSTER EXTENT</b>				<b>5.28.41</b>	

Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016

## TERMS OF REFERENCE (ToR) COMPLIANCE – P1

Thiru. R. Karthick – TO24B0108TN5280988N Dated:24.05.2024

<b>SEIAA Specific Terms of Reference for (Mining of Minerals)</b>		
1	The PP should provide the detail report of Bio diversity study, Hydrogeological study, Hydrology study, Socio – Economic Study separately. The above-mentioned scientific studies report should be done by involving the reputed Research or Academic Institution.	Details are given in the Chapter No.3 and the Detailed report will be submitted in the Final EIA Appraisal
2	The PP shall include the cost of the above-mentioned studies in the EMP and furnish the same during the EIA Appraisal	The Cost for the studies incorporated and given in the Chapter No.10
3	The lease period is for 5 years. The mining plan is for the period of five years & the production should not exceed 1,89,560m <sup>3</sup> of rough stone and 24,000m <sup>3</sup> of Gravel with an ultimate depth of mining is 37m BGL. The annual peak production is 39,660m <sup>3</sup> of rough stone and 10,560m <sup>3</sup> of Gravel.	Noted & Agreed
<b>SEIAA STANDARD CONDITIONS</b>		
<b>Cluster Management Committee</b>		
1	Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	Cluster Management Committee has been constituted initially with 2 quarries.
2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc..	The information will be shared to the cluster management committee during the monthly meeting.
3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	The list of members of the committee formed will be submitted to AD/Mines before the execution of mining lease.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	All the information has been discussed in Chapter No.2.
5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	The risk management plan and disaster management plan will be followed as per the EIA report.
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.	Environmental policy is described in the EIA report Chapter No. 6 and the same will be followed.
7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	Proper action plan regarding the restoration will be followed by the committee.
8	The committee shall furnish the Emergency Management plan within the cluster.	The committee will submit the emergency management plan to the respective authority in the stipulated time period.
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	The information on the health of the workers and the local people will be updated periodically.
10	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	A proper action plan with reference to water, sanitation & safety will be devised and submitted by the committee to the respective authority.

11	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	The fire safety and evacuation plan will be carried out by as per the respective quarry mines managers.
<b><u>Impact study of mining</u></b>		
12	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following a) Soil health & soil biological, physical land chemical features . b) Climate change leading to Droughts, Floods etc. c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people. d) Possibilities of water contamination and impact on aquatic ecosystem health. e) Agriculture, Forestry & Traditional practices. f) Hydrothermal/Geothermal effect due to destruction in the Environment. g) Bio-geochemical processes and its foot prints including environmental stress. h) Sediment geochemistry in the surface streams.	Details of Soil health is given in Chapter No 3 and biodiversity is given in Chapter No 3. The project will not cause any significant changes in the climate Climatic changes and GHG are described in Chapter No 4. Details of water contamination and impact on aquatic ecosystem is given in Chapter No 4. Hydrothermal/ Geothermal effects due to destruction in the environment, Bio geochemical process and sediment geo chemistry given in the Chapter No 7.
<b><u>Agriculture &amp; Agro-Biodiversity</u></b>		
13	Impact on surrounding agricultural fields around the proposed mining Area.	As the proposed lease area is dominantly surrounded by mining land, barren land, and fallow land, the impact on the surrounding agricultural fields if present will be low. With proper mitigation measures, the project will be carried out to reduce the impact further to the level of negligence.
14	Impact on soil flora & vegetation around the project site.	The vegetation details have been provided in chapter III. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
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.	The vegetation details have been provided in chapter III. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area
16	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	Details are discussed in Chapter No.3
17	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	The Eco System of the area will be retained during the mining operation by the way of planting trees in the boundary barrier and un utilized areas. After completion of mining operation, the quarried-out pit will be facilitated to collect the rainwater to pit act as temporary reservoir
18	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	The project area is bounded by Existing quarries on the East side and remaining side is barren land. Budgetary allocation given in the Chapter No. 10..

<b>Forests</b>		
19	The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.	There is no Reserve Forest within 1km radius from the project area. The mining operation will not cause any significant impact to the Reserve Forest and Wild life Sanctuaries
20	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna	There is no forest/wildlife within 10km radius, chapter 3 details of Ecology and Biodiversity, and 4 endemic vulnerable and endangered indigenous flora and fauna.
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Details are discussed in the Chapter No.3
22	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	Anticipated Environment Impact and Mitigation measures are detailed in Chapter No.4
<b><u>Water Environment</u></b>		
23	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, Ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.	There are 7 open wells and 7 bore wells within the radius of 1km from the project area, Hydrogeological study has been conducted by the resistivity method
24	Erosion Control measures.	Details discussed in the chapter No.4
25	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.	Details in Chapter 3
26	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	Food webs describe who eats whom in an ecological community. Made of interconnected food chains, food webs help us understand how changes to ecosystems — say, removing a top predator or adding nutrients — affect many different species, both directly and indirectly. Whereas in this proposed project is for quarrying of Rough Stone and Gravel and is on a hard batholith formation where no diversion of any water bodies is proposed of there is no intersection of ground water table anticipated.
27	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	Details are given in the Chapter No 4.
28	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	Details in Chapter 4 impact of bio diversity.
29	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical. chemical components and microbial components.	Details of impact on soil environment is detailed in Chapter No.4
30	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Uthiyur Reserve Forest – 705.48m North There is, National Parks, Eco sensitive areas, Wild life sanctuaries within the radius of 10km. An ecological survey of the study area was conducted particularly with reference to the listing of species and assessment of the existing



		baseline ecological (terrestrial) condition in the study area. Ecological Environment is discussed under Chapter 3
<b>Energy</b>		
31	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	Detailed discussed in chapter 4
<b>Climate Change</b>		
32	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	<p>A greenhouse gas (GHG) is a gas that absorbs and emits radiant energy within the thermal infrared range, causing the greenhouse effect. The primary greenhouse gases in Earth's atmosphere are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and ozone (O<sub>3</sub>)</p> <p>Carbon dioxide (CO<sub>2</sub>): Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials. Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.</p> <p>Methane (CH<sub>4</sub>): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills.</p> <p>Nitrous oxide (N<sub>2</sub>O): Nitrous oxide is emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater</p>
33	The Environmental impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	Detailed discussed in chapter 3.
<b>Mine Closure Plan</b>		
34	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Progressive Mine closure plan has been prepared considering the entire lease period in the mining plan and the same has been approved.
<b>EMP</b>		
35	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Detailed discussed in chapter 10.
36	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	Detailed discussed in chapter 10.
<b>Risk Assessment</b>		
37	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	A Risk Assessment and management Plan Chapter- 7
<b>Disaster Management Plan</b>		
38	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to	Disaster management Plan details in Chapter-7

	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.	
<b>Others</b>		
39	The project proponent shall furnish VAC) 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.	Letter obtained from the VAO regarding surface features within 300m radius and attached in Annexure
40	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	The issues raised during public hearing is will be addressed in the Final EIA/EMP Report
41	The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	Plastic waste management in the project area detailed in Chapter No.7.

#### 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.	<b>Not applicable.</b> This is not a violation category project. This proposal falls under B1 Category
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	The applied land for quarrying is a Patta Land. Document is enclosed along with Approved Mining Plan as Annexure Volume 1.
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	<b>Noted &amp; agreed.</b>
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).	Map showing – Project area is with adjacent quarries details is enclosed in Figure No1.1 Project area boundary coordinates superimposed on Toposheet – Figure No. 1.1A Toposheet of the project area covering 10km radius – Figure No. 1.2 Geology map of the project area covering 10km radius - Figure No. 2.11
5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	<b>Map showing –</b> Geology map of the project area covering 10km radius - Figure No. 2.11 Geomorphological features are incorporated in the Toposheet map covering 10km radius around the project area Figure No. 2.12
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.	The applied area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government.

7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.	The proponent has framed their Environmental Policy and the same is discussed in the Chapter No 10.1.
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	It is an opencast quarrying operation proposed to operate in Mechanized method. The rough stone formation is a hard, compact and homogeneous body. The height and width of the bench will be maintained as 5m with 90 <sup>0</sup> bench angles. Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate. Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.
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.	<b>Noted &amp; agreed.</b> The study area considered for this study is 10 km radius and all data contained in the EIA report such as waste generation etc., is for the Life of the Mine / lease period.
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.	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3
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	<b>Not Applicable.</b> There is no waste anticipated during this quarry operation. The entire quarried out rough stone will be transported to the needy customers. No Dumps is proposed outside the lease area.
12	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	<b>Not Applicable.</b> There is no Forest Land involved in the proposed project area. The proposed project area is a Patta land. Approved Mining Plan is enclosed as Annexure Volume 1.
13	Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be	<b>Not Applicable.</b> The proposed project area does not involve any Forest Land.

	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.	<b>Not Applicable.</b> The project doesn't attract Recognition of Forest Rights Act, 2006.
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	No Reserve Forest within the Study 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.	<b>Not Applicable.</b> There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
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	<b>Not Applicable.</b> There are no National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
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.	Detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] was carried out and discussed under Chapter No. 3. There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
19	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravalli 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.	<b>Not Applicable.</b> Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range'.
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).	<b>Not Applicable.</b> The project doesn't attract The C. R. Z. Notification, 2018.
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	<b>Not Applicable.</b> There are no approved habitations within a radius of 300 meters.

	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.	Therefore, R&R Plan / Compensation details for the Project Affected People (PAP) is not anticipated and Not Applicable for this project.
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 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 pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.	Baseline Data were collected for Post Monsoon Season (March to May 2024) as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3.
23	Air quality modelling 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 modelling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD Model. Details in Chapter No. 4,
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.	Total Water Requirement for this project is given in the chapter No 2, Table No 2.13.
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Water for dust suppression, greenbelt development and domestic use will be obtained from accumulated rainwater/seepage water in mine pits. Drinking water will be sourced from the approved water vendors, No 2, Table No 2.13.
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	The rain water collected in the pits after spell of rain will be used for greenbelt development and dust suppression.
27	Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.	Impact Studies and Mitigation Measures of Water Quality discussed in Chapter No. 4.

28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	The ground water table is at 62m below ground level.  The ultimate depth of this projects is 37m from the general ground profile.  Maximum depth is proposed in this EIA project is 37m.
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.	Highest elevation of the project area is 295m AMSL Ultimate depth of the mine is 37m AMSL Water level in the area is 62m BGL
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.	Progressive greenbelt development plan has been prepared and discussed along with Recommended Species details are given in the Chapter 4, Table No.4.9
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.	Traffic density survey was carried out to analyse the impact of Transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no much significant impact due to the proposed transportation from the project area. Details in Chapter 2.
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.	Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease and the same has been discussed in the Chapter No.2. .
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Discussed in chapter No 2.
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.	Details in Chapter 10.
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	Details in Chapter 10.

	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.	Details in Chapter 4,
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.	Environment Management Plan Chapter 10.
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.	The outcome of public hearing will be updated in the final EIA/EMP report
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.	No litigation is pending in any court against this 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.	The proposed capital cost for Environmental Monitoring Programme is Rs 3,80,000/- and the recurring cost is Rs 76,000/- per annum. Details in Chapter 6.
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.	Details in Chapter 10.
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Details in Chapter 7.
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.	Details in Chapter.8.
44	<b>Besides the above, the below mentioned general points are also to be followed: -</b>	
A	Executive Summary of the EIA/EMP Report	Encloses as separate volume
B	All documents to be properly referenced with index and continuous page numbering.	All the documents are 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.	List of Tables and source of the data collected are given properly.
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	Baseline monitoring reports are enclosed with mining plan
E	Where the documents provided are in a language other than English, an English translation should be provided.	Not Applicable.
F	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Will be enclosed along with Final EIA /EMP Report.
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 are followed.	Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IA. II (I) Dated: 4th August, 2009 are followed.

	2009, which are available on the website of this Ministry, should be followed.	
H	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation	Noted & agreed.
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.	Not 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.	Surface Plan – Figure No. 2.2. Geological Plan – Figure No 2.9. Working Plan – Figure No 2.9. Closure Plan – Figure No.2.10.



## TERMS OF REFERENCE (ToR) COMPLIANCE – P2

Thiru. Susila – TO24B0108TN5642030N Dated:07.06.2024

<b>SEAC Conditions – Site Specific</b>		
1	The project proponent shall submit a Certified Compliance Report obtained from the office of the concerned DEE/TNPCB (or) IRO, MoEF & CC, Chennai as per the MoEF&CC O.M dated.08.06.2022 for the previous EC and appropriate mitigating measures for the noncompliance items, if any	The Certified Compliance report for the previous EC is applied and it will submit in the Final EIA Report
2	For the existing quarry, the PP shall obtain a letter from the concerned AD (Mines) which shall stipulate the following information: i. original pit dimension of the existing quarry ii. Quantity achieved Vs EC Approved Quantity iii. Balance Quantity as per Mineable Reserve calculated. iv. Mined out Depth as on date Vs EC Permitted depth v. Details of illegal/illicit mining carried out, if any vi. Quantity of material mined out outside the mine lease area (or) in the adjacent quarry/land. vii. Existing condition of Safety zone/benches viii. Details of any penalties levied on the PP for any violation in the quarry operation	Previously operated by the Proponent Thiru.T. Gunasekaran Lease Period from: 16.04.2018 to 15.04.2023 Pit Dimesion: 128m (L) x 84m (W) x 18m (D)
3	PP shall furnish a letter from AD/DD mines stating that the project will not fall under violation category.	Noted & Agreed
4	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc.	Details are given in the Chapter No.3
5	The Proponent shall develop greenbelt and garland drain around the boundary of the proposed quarry and the photographs indicating the same shall be shown during the EIA appraisal.	Noted and Agreed
6	The study on impact of the proposed quarrying operations on the surrounding environment which includes reserve forest, water bodies,	Detailed in Chapter No.4
7	The Project Proponent shall furnish the revised EMP based on the study carried out on impact of the dust & other environmental impacts due to proposed quarrying operations on the nearby agricultural lands for remaining life of the mine in the format prescribed by the SEAC considering the cluster situation	Detailed in Chapter No.10
<b>SEIAA Specific Condition</b>		
1	The PP shall carry out the scientific studies to design the controlled blast parameters for reducing the blast-induced ground/air- vibrations and eliminating the fly rock from the blasting operations carried out in the quarry, by involving anyone of these reputed Research and Academic Institution such as CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, IITMadras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. A copy of such scientific study report shall be submitted to the SEIAA along with EIA report	The Scientific Study Report will be submitted in the Final EIA Appraisal
2	The PP shall annually carry out the scientific studies to assess the hydrogeological condition of the quarry for ensuring the safety of the persons working in the mine and to determine impacts of the mining operation on the	The Scientific Study Report will be submitted in the Final EIA Appraisal

	ground water conditions in the waterbodies, by involving any one of the reputed Research and Academic Institution - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, University of Madras – Centre for Environmental Studies, and Anna University Chennai-Dept of Geology, CEG Campus. A copy of such scientific study report shall be submitted to the SEIAA along with EIA report.	
3	For the safety of the persons employed in the quarry, the PP shall carry out the scientific studies to assess the slope stability of the working benches and existing quarry wall by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. A copy of such scientific study report shall be submitted to the SEIAA along with EIA report.	The Scientific Study Report will be submitted in the Final EIA Appraisal
<b>SEAC Standard Conditions</b>		
1	In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m	Previously operated by the Proponent Thiru.T. Gunasekaran Lease Period from: 16.04.2018 to 15.04.2023 Pit Dimension: 128m (L) x 84m (W) x 18m (D)
2	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	Detailed in Chapter No.3
3	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	Detailed in Chapter No.3
4	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc located within 1 km of the proposed quarry.	The details of hydrological report in chapter-3
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	Detailed in Chapter No.3
6	The PP shall furnish DFO letter stating that the proximity distance of Reserve Forests, Protected Areas,	Uthiyur R.F –705.48m North DFO letter has been obtained and attached in the Draft EIA/EMP report annexure

	Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	
7	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	The Report will be Submitted in the Final EIA Appraisal
8	However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	The PP will submit the Slope Stability Plan when the depth reaches 30m.
9	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.	Affidavit will be submitted in the Final EIA/EMP report
10	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	The PP will submit the conceptual design for carrying out only controlled blasting in the Final EIA Appraisal.
11	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.	There is no other quarry is operated by the proponent
12	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines	Noted & Agreed
13	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.	Previously operated by the Proponent Thiru.T. Gunasekaran Lease Period from: 16.04.2018 to 15.04.2023 Pit Dimesion: 128m (L) x 84m (W) x 18m (D)
15	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided.	Satellite imagery of the project area along with boundary coordinates is given in the Chapter No 2, Figure No.2.7, Table no. 2.2.

	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).	Geomorphology of the area is given in Chapter No 2, Figure No.2.8 Land use pattern of the project area is tabulated in the Chapter No.2. Table no 2.3 Land use pattern of the Study area is tabulated in the Chapter No.3, Table no 3.3 Page no.52
16	The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.,	Drone video for this cluster will be taken and it will be submitted in the Final EIA/EMP report.
17	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	The Barbed Wire fencing has been erected all around the boundary. The Photographs is attached in chapter-2
18	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	Detailed in Chapter No.2
19	The Project Proponent shall provide the Organization chart indicating the appoint sent 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.	Discussed about Organization chart in Chapter-6
20	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details are discussed under Chapter No.3.
21	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.	Baseline Data were collected for One Season (Pre-Monsoon) Mar 2024 to May 2024 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3.
22	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	Cumulative impact study has been carried out covering proposed and existing quarries in the cluster and results related to air pollution, water pollution, & health impacts have been given in chapter No. 7, Pg. No 121, Based on the results, environmental management plan has been prepared and given in Chapter No. 10.
23	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	Discussed in Chapter No.-3
24	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3.

	and post operational phases and submitted. Impact, if any, of change of land use should be given.	
25	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	Not applicable
26	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not applicable
27	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
28	Impact on local transport infrastructure due to the Project should be indicated.	Detailed in Chapter No.3
29	A tree survey study shall be carried out (nos., name of the species, age, diameter etc.) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	There are no trees present in the target mining area and few trees present in the safety barrier. It is proposed to plant 810 trees along boundary and nearby village roads. There are few trees in buffer zone of 300 m from the proposed lease area and it shall not be cut down or have any impact due to the mining activities and project proponent ensures to carrying out activities like watering for preserving the green cover around 300 m from proposed project site.
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Mine closure plan is detailed in Chapter:4.
31	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible	The Flora and Fauna Study will be carried out along with educating local School students by the Functional Area Experts in Ecology and Biodiversity
32	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	Species are proposed to plant in the safety barrier as mentioned in the ToR appendix. Proposed species are given in the Chapter No 4
33	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site-specific choices. The proponent shall earmark the 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.	The plantation activities carried out in the project site as per the ToR condition It is a Existing lease. Around 810 trees are proposed to plant
34	A Disaster Management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Disaster management Plan details in Chapter-7
35	A Risk Assessment and Management Plan shall be prepared and included in the EIA/EMP Report for the	A Risk Assessment and management Plan Chapter- 7

	complete life of the proposed quarry (or) till the end of the lease period.	
36	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health impacts chapter- 10
37	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	No Public Health Implications anticipated due to this project. Details of CER and CSR are discussed under Chapter 8.
38	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	No Negative Impact on Socio Economic Environment on the Study Area is anticipated and this project shall benefit the Socio-Economic Environment by ways of employment for 27 people directly and 50 people indirectly.
39	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No Litigation is pending against the Project Proponent
40	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Project benefit is given in the Chapter No.8
41	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF & CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	No quarries is operated by the proponent
42	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	The EMP has been prepared for the 5 years and the details are given in the Chapter No. 10
43	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted and agreed

**SEIAA STANDARD CONDITIONS**

**Cluster Management Committee**

1	Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	Cluster Management Committee has been constituted initially with 2 quarries.
2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc..	The information will be shared to the cluster management committee during the monthly meeting.
3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	The list of members of the committee formed will be submitted to AD/Mines before the execution of mining lease.

4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	All the information has been discussed in Chapter No.2.
5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	The risk management plan and disaster management plan will be followed as per the EIA report.
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.	Environmental policy is described in the EIA report Chapter No. 6 and the same will be followed.
7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	Proper action plan regarding the restoration will be followed by the committee.
8	The committee shall furnish the Emergency Management plan within the cluster.	The committee will submit the emergency management plan to the respective authority in the stipulated time period.
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	The information on the health of the workers and the local people will be updated periodically.
10	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	A proper action plan with reference to water, sanitation & safety will be devised and submitted by the committee to the respective authority.
11	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	The fire safety and evacuation plan will be carried out by as per the respective quarry mines managers.
<b>Impact study of mining</b>		
12	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following a) Soil health & soil biological, physical land chemical features . b) Climate change leading to Droughts, Floods etc. c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people. d) Possibilities of water contamination and impact on aquatic ecosystem health. e) Agriculture, Forestry & Traditional practices. f) Hydrothermal/Geothermal effect due to destruction in the Environment. g) Bio-geochemical processes and its foot prints including environmental stress. h) Sediment geochemistry in the surface streams.	Details of Soil health is given in Chapter No 3 and biodiversity is given in Chapter No 3. The project will not cause any significant changes in the climate Climatic changes and GHG are described in Chapter No 4. Details of water contamination and impact on aquatic ecosystem is given in Chapter No 4. Hydrothermal/ Geothermal effects due to destruction in the environment, Bio geochemical process and sediment geo chemistry given in the Chapter No 7.
<b>Agriculture &amp; Agro-Biodiversity</b>		
13	Impact on surrounding agricultural fields around the proposed mining Area.	As the proposed lease area is dominantly surrounded by mining land, barren land, and fallow land, the impact on the surrounding agricultural fields if present will be low. With proper mitigation measures, the project will be carried out to reduce the impact further to the level of negligence.
14	Impact on soil flora & vegetation around the project site.	The vegetation details have been provided in chapter III. There is no schedule I species of

		animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
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.	The vegetation details have been provided in chapter III. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area
16	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	Details are discussed in Chapter No.3
17	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	The Eco System of the area will be retained during the mining operation by the way of planting trees in the boundary barrier and un utilized areas. After completion of mining operation, the quarried-out pit will be facilitated to collect the rainwater to pit act as temporary reservoir
18	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	The project area is bounded by Existing quarries on the East side and remaining side is barren land. Budgetary allocation given in the Chapter No. 10..
<b>Forests</b>		
19	The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.	There is no Reserve Forest within 1km radius from the project area. The mining operation will not cause any significant impact to the Reserve Forest and Wild life Sanctuaries
20	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna	There is no forest/wildlife within 10km radius, chapter 3 details of Ecology and Biodiversity, and 4 endemic vulnerable and endangered indigenous flora and fauna.
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Details are discussed in the Chapter No.3
22	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	Anticipated Environment Impact and Mitigation measures are detailed in Chapter No.4
<b>Water Environment</b>		
23	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, Ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.	There are 7 open wells and 7 bore wells within the radius of 1km from the project area, Hydrogeological study has been conducted by the resistivity method
24	Erosion Control measures.	Details discussed in the chapter No.4
25	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.	Details in Chapter 3



26	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	Food webs describe who eats whom in an ecological community. Made of interconnected food chains, food webs help us understand how changes to ecosystems — say, removing a top predator or adding nutrients — affect many different species, both directly and indirectly. Whereas in this proposed project is for quarrying of Rough Stone and Gravel and is on a hard batholith formation where no diversion of any water bodies is proposed of there is no intersection of ground water table anticipated.
27	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	Details are given in the Chapter No 4.
28	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	Details in Chapter 4 impact of bio diversity.
29	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical. chemical components and microbial components.	Details of impact on soil environment is detailed in Chapter No.4
30	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Uthiyur Reserve Forest – 705.48m North There is, National Parks, Eco sensitive areas, Wild life sanctuaries within the radius of 10km. An ecological survey of the study area was conducted particularly with reference to the listing of species and assessment of the existing baseline ecological (terrestrial) condition in the study area. Ecological Environment is discussed under Chapter 3
<b>Energy</b>		
31	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	Detailed discussed in chapter 4
<b>Climate Change</b>		
32	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	A greenhouse gas (GHG) is a gas that absorbs and emits radiant energy within the thermal infrared range, causing the greenhouse effect. The primary greenhouse gases in Earth's atmosphere are carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ), nitrous oxide (N <sub>2</sub> O), and ozone (O <sub>3</sub> ) Carbon dioxide (CO <sub>2</sub> ): Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials. Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Methane (CH <sub>4</sub> ): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills. Nitrous oxide (N <sub>2</sub> O): Nitrous oxide is emitted during agricultural, land use, and industrial

		activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater
33	The Environmental impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	Detailed discussed in chapter 3.
<b><u>Mine Closure Plan</u></b>		
34	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Progressive Mine closure plan has been prepared considering the entire lease period in the mining plan and the same has been approved.
<b><u>EMP</u></b>		
35	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Detailed discussed in chapter 10.
36	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	Detailed discussed in chapter 10.
<b><u>Risk Assessment</u></b>		
37	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	A Risk Assessment and management Plan Chapter- 7
<b><u>Disaster Management Plan</u></b>		
38	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Disaster management Plan details in Chapter-7
<b><u>Others</u></b>		
39	The project proponent shall furnish VAC) 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.	Letter obtained from the VAO regarding surface features within 300m radius and attached in Annexure
40	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	The issues raised during public hearing is will be addressed in the Final EIA/EMP Report
41	The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	Plastic waste management in the project area detailed in Chapter No.7.

<b>STANDARD TERMS OF REFERENCE</b>		
<b>S. No</b>	<b>Terms of Reference</b>	<b>Reply</b>
<b>1.1</b>	An EIA-EMP Report shall be prepared for peak capacity (.MTPA) operation in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.	Peak Production = 19,526m <sup>3</sup> of Rough Stone Proposed Depth = 42m bgl Project area of 1.21.46Ha.

1.2	An EIA-EMP Report would be prepared for peak capacity operation to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for.... MTPA of mineral production based on approved project/Mining Plan for.... MTPA.	Peak capacity of 19,526m <sup>3</sup> operation to cover the impacts and environment management plan in chapter- IV and Chapter-10 covered in project specific activities.  Baseline Data were collected for Summer Season March– May 2024 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. III
1.3	Proper KML file with pin drop and coordinate of mine at 500-1000 m interval be provided.	Noted, Google earth image showing lease area with Coordinates of pillars in chapter-
1.4	A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries, mines, and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given. The above details to	Land use and land cover of the 10km Radius of study area is discussed in Chapter No. III.  Geology map of the project area covering 10km radius Figure No. 2.5, Page No. 20. Geomorphology of the area is given in Chapter No 2 Figure No 2.6, Page No. 20  There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
1.5	Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.	Land use and land cover of the study area is discussed in Chapter No. III with Physical features such as waterbodies, odai, canal etc.,
1.6	A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.	DEM data using Drainage pattern around 10km radius showing streams and lakes etc., discussed in Chapter No. 3.
1.7	Catchment area with its drainage map of 25 km area within and outside the mine shall be provided with names, details of rivers/ riverlet system and its respective order. The map should clearly indicate drainage pattern of the catchment area with basin of major rivers. Diversion of drains/ river need elaboration in form of length, quantity and quality of water to be diverted.	Drainage pattern around 10km radius showing streams and lakes etc., is discussed in Chapter No. 3.

1.8	(Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.	Details in chapter-2 showing the land features. And also enclosed Approved mining plan in annexure
1.9	Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.	<p>It is an opencast quarrying operation proposed to operate in Mechanized method. The Rough Stone quarry formation is a hard, compact and homogeneous body.</p> <p>The height and width of the bench will be maintained as 5m with 90<sup>0</sup> bench angles.</p> <p>Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate.</p> <p>Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.</p>
1.10	Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.	Impact Studies and Mitigation Measures of Water Environment including Surface Water and Ground Water are discussed in Chapter 4.
1.11	A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-	<p>Not Applicable.</p> <p>The details of waste dump management are given in the Chapter No. 4</p>

1.12	Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations should be analyzed. Extent of area under surface rights and under mining rights should be specified. Area under Surface Rights				Land use and land cover of the study area is discussed in Chapter No. 3.  Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.5.		
			<b>Description</b>	<b>Present area (Ha)</b>	<b>Area at the end of lease period (Ha)</b>		
	<b>Sno</b>	<b>ML. project Land use</b>	<b>Area under Surface Rights (ha)</b>	<b>Area Under Mining Rights (ha)</b>	<b>Area under Both (ha)</b>		
	1	Agriculture Land					
	2	Forest Land					
	3	Grazing Land					
	4	Settlements					
	5	Others (Specify)					
			<b>S.No</b>	<b>Details</b>	<b>Area (Ha)</b>		
			1	Buildings			
		2	Infrastructure				
		3	Roads				
		4	Others (Specify)				
		Total					
1.13	Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan				Detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] was carried out and discussed under Chapter No. 3.  There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.		
1.14	One-season (other than monsoon) primary baseline data on environmental quality - air (PM10, PM2.5, SOx, NOx and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided. The detail of NABL/ MoEF&CC certification of the respective				Baseline Data were collected for Summer season March–May 2024 as per CPCB Notification and MoEF & CC Guidelines.Details in Chapter No. 3.		

1.15	Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air) / downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.	Details in chapter-3 showing the various sampling stations As per CPCB guidelines.
1.16	For proper baseline air quality assessment, Wind rose pattern in the area should be reviewed and accordingly location of AAMSQ shall be planned by the collection of air quality data by adequate monitoring stations in the downwind areas. Monitoring location for collecting baseline data should cover overall the 10km buffer zone i.e., dispersed in 10 km buffer area. In case of expansion, the displayed data of CAAQMS and its comparison with the monitoring data to be provided.	Air Quality Modelling and windrose pattern for prediction of incremental GLC's of pollutant was carried out using AERMOD view 13 Model.  Details in Chapter No. 4.
1.17	A detailed traffic study along with presence of habitation in 100 mts distance from both side of road, the impact on the air quality with its proper measures and plan of action with timeline for widening of road. The project will increase the no. of vehicle along the road which will indirectly contribute to carbon emission so what will be the compensatory action plan should be clearly spell out in EIA/ EMP report.	Traffic density survey was carried out to analyses the impact of Transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details in Chapter-II.
1.18	The socio-economic study to conducted with actual survey report and a comparative assessment to be provided from the census data should be provided in EIA/ EMP report also occupational status & economic status of the study area and what economically project will contribute should be clearly mention. The study should also include the status of infrastructural facilities and amenities present in the study area and a comparative assessment with census data to be provided and to	Detailed in chapter-3 socio-economic study with occupational status & economic status of the study area. The study should also include the status of infrastructural facilities and amenities present in the study area  CSR are discussed under Chapter 8.
1.19	The Ecology and biodiversity study should also indicate the likely impact of change in forest area for surface infrastructural development or mining activity in relation to the climate change of that area and what will be the compensatory measure to be	Detailed Ecology and biodiversity study in chapter-3

1.20	Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be submitted.	Detailed in chapter-4 population in the impact zone and measures for occupational health and safety and proposed occupational health in chapter-X
1.21	Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted.	Noted and agreed
1.22	Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls	The ground water table is at 62m below ground level. In these projects, ultimate depth is 42m Bgl  It is inferred the quarrying activities in the Cumulative EIA project (Quarry) will not intersect the Ground water table.
1.23	Study on land subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.	Detailed in Chapter-IV Anticipated and mitigation measures of in the study area.
1.24	Detailed water balance should be provided. The breakup of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.	Total Water Requirement: 1.5 KLD Discussed under Chapter 2, Table No 2.15, The required water will be met from rainwater accumulated in mine pit (when available) and from the approved water vendors.
1.25	PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each APCEs	Methodology And Instrument Used For Air Quality Analysis in chapter-3and Air Pollution control equipment (APCEs) in chapter-10 sub 10.2 Environmental policy.
1.26	PP shall propose to use LNG/CNG based mining machineries and trucks for mining operation and transportation of mineral. The measures adopted to conserve energy or use of renewable sources shall be explored.	Details in Machinery and equipment details in Chapter-2 Table No 2.10
1.27	PP to evaluate the green house emission gases from the mine operation/ washery plant and corresponding carbon absorption plan.	Noted and agreed
1.28	Site specific Impact assessment with its mitigation measures, Risk Assessment and Disaster Preparedness and Management Plan should be	A Risk Assessment and Disaster Preparedness and management Plan Chapter- 7
1.29	Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.	Detailed in Machinery and technology used Chapter-3 Table 3.17 – Methodology and Instrument Used for Air Quality Analysis Detailed study in chapter-4 Impact of choice of mining method and impact on air quality and blasting and noise and vibrations.

1.30	Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest	Traffic density survey was carried out to analyse the impact of Transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no much significant impact due to the proposed transportation from the project area. Details in Chapter 2. Infrastructure & other facilities will be provided to the Mine Workers after the
1.31	Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.	Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease and the same has been discussed in the Chapter No.2
1.32	The number and efficiency of mobile/static water jet, Fog cannon sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be	Detailed in chapter-2 for mineral transportation route with approach roads etc., and impacting air quality detailed given chapter-4
1.33	Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined-out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever	Discussed under Chapter 2. Mine Closure Plan is a part of Approved Mining Plan enclosed as Annexure Volume – 1.
1.34	Adequate greenbelt nearby areas, mineral stock yard and transportation area of mineral shall be provided with details of species selected and survival rate Greenbelt development should be	Greenbelt Development Plan is discussed under Chapter 4,
1.35	Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.	The total cost and the details are given in the Chapter No. 10
1.36	Details of R&R. Detailed project specific R&R Plan with data on the existing socio- economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc. and costs along with the schedule of the implementation of	Not Applicable.  There are no approved habitations within a radius of 300 meters.  Therefore, R&R Plan / Compensation details for the Project Affected People (PAP) is not anticipated and Not Applicable for this project.
1.37	CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.	CSR are discussed under Chapter 8. And specific budgetary provisions (capital and recurring) for specific activities over the life of the project in chapter-10
1.38	Corporate Environment Responsibility:	CER are discussed under Chapter 8.
1.39	a) The Company must have a well laid down Environment Policy approved by the Board of Directors.	Detailed in chapter-10 The Environment Policy
1.40	b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.	



1.41	c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.	The Environment Monitoring Cell discussed under Chapter 6
1.42	d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.	The Environment Monitoring Cell discussed under Chapter 6
1.43	e) Environment Management Cell and its responsibilities to be clearly spell out in EIA/	The Environment Monitoring Cell discussed under Chapter 6
1.44	f) In built mechanism of self-monitoring of compliance of environmental regulations should be	The Environment Monitoring Cell discussed under Chapter 6
1.45	Status of any litigations/ court cases filed/pending on the project should be provided.	No litigation is pending in any court against this project
1.46	PP shall submit clarification from DFO that mine does not falls under corridors of any National Park and Wildlife Sanctuary with certified map showing distance of nearest sanctuary.	<u>Vellode Birds Sanctuary 43km - NE</u> The letter was obtained from the DFO and attached in the Annexure.
1.47	Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable	The letter was obtained from the DFO and attached in the Annexure
1.48	Details on the Forest Clearance should be given as per the format given: Total Mine lease area (ha): Total Forest Land (Ha) : Date of FC : Extent of Forest Land : Balance area for which FC is yet to be obtained: Status of application for diversion of forest Land:	Sathankulam R.F. 705.48 m North  Total Mine Lease area 1.21.46ha The letter was obtained from the DFO and attached in the Annexure
1.49	In case of expansion of the proposal, the status of the work done as per mining plan and approved mine closure plan shall be detailed in EIA/ EMP	Enclosed Approved mining plan in Annexure volume-I
1.50	Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the time bound action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the	The outcome of public hearing will be updated in the final EIA/AMP report.
1.51	PP shall carry out survey through drone highlighting the ground reality for at least 10 minutes.	Noted and agreed
1.52	Detailed Chronology of the project starting from the first lease deed allotted/Block allotment/ Land acquired to its No. of renewals, CTO /CTE with details of no. renewals, previous EC(s) granted details and its compliance details, NOC details from various Govt bodies like Forest NOC(s),	Noted and agreed

<b>1.53</b>	The first page of the EIA/ EMP report must mention the peak capacity production, area, detail of PP, Consultant (NABET accreditation) and Laboratory (NABL / MoEF & CC certification)	As per detailed in front page of Draft EIA/EMP, NABET, NABL certification detailed given in the report.
<b>1.54</b>	The compliances of Tor must be properly cited with respective chapter section and page no in tabular form and also mention sequence of the respective ToR complied within the EIA-EMP	As per Tor compliance each chapter wise page and table, figure no given in the EIA/EMP report.

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## 1.INTRODUCTION

### 1.0 PREAMBLE

#### Project History P1: -

The project proponent Thiru R. Karthick applied for Rough Stone and Gravel Quarry over an extent of 1.61.95 Ha in S.F.No 984/2A1 (P) Mudalipalayam Village, Kangayam Taluk, Tiruppur District.

- Proponent applied for Rough Stone and Gravel quarry lease on 20.03.2023
- Precise area communication letter was issued by the District Collector vide RC. No. 110/Kanimam/2023 Dated 24.01.2024
- The Mining plan has been prepared by the Qualified person and got approval vide Letter RC. No. 110/Mines/2023 Dated 15.02.2024
- The Mining plan has been approved for the quantity of 1,89,560 m<sup>3</sup> of Rough Stone and 24,000m<sup>3</sup> of Gravel up to the depth of 37m bgl for the period of five years.

#### Project History P2: -

The project proponent Tmt. G. Susila applied for Rough Stone and Gravel Quarry over an extent of 1.21.46 Ha in S.F.No 986/B1 Mudalipalayam Village, Kangayam Taluk, Tiruppur District.

- Proponent applied for Rough Stone and Gravel quarry lease on 21.03.2023
- Precise area communication letter was issued by the District Collector vide RC. No. 112/Kanimam/2023 Dated 12.02.2024
- The Mining plan has been prepared by the Qualified person and got approval vide Letter RC. No. 112/Mines/2023 Dated 14.03.2024
- The Mining plan has been approved for the quantity of 94,511 m<sup>3</sup> of Rough Stone and 4,176m<sup>3</sup> of Gravel up to the depth of 42m bgl for the period of five years

As per the EIA Notification, 2006 and subsequent amendments and OM The proposal falls in the B1 Category (Cluster quarries - 2 proposal, 1 Existing, quarries forming Cluster Category {Total Extent of the Cluster is 5.25.41 Ha}- Cluster area calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1<sup>st</sup> July 2016).

- Proponent applied for Terms of Reference Identification: T024B0108TN5280988N Dated 24.05.2024 – P1 & T024B0108TN5642030N Dated 07.06.2024 – P2

Based on the ToR Baseline Monitoring study has been carried out for one season ie., **March to May 2024** and this EIA/EMP report is prepared for considering cumulative impacts arising out of this project, the Cumulative Environmental Impact Assessment study is undertaken, which is followed by preparation of a detailed Environmental Management Plan (EMP) to minimize those adverse impacts.

Environmental Impact Assessment (EIA) is the management tool to ensure the sustainable development and it is a process, used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision-making tool, which guides the decision makers in taking appropriate decisions for any project. EIA systematically examines both beneficial and adverse consequences of the project and ensures that these impacts are taken into account during the project designing. It also reduces conflicts by promoting community participation, information, decision makers, and helps in developing the base for environmentally sound project.

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## 1.1 PURPOSE OF THE REPORT

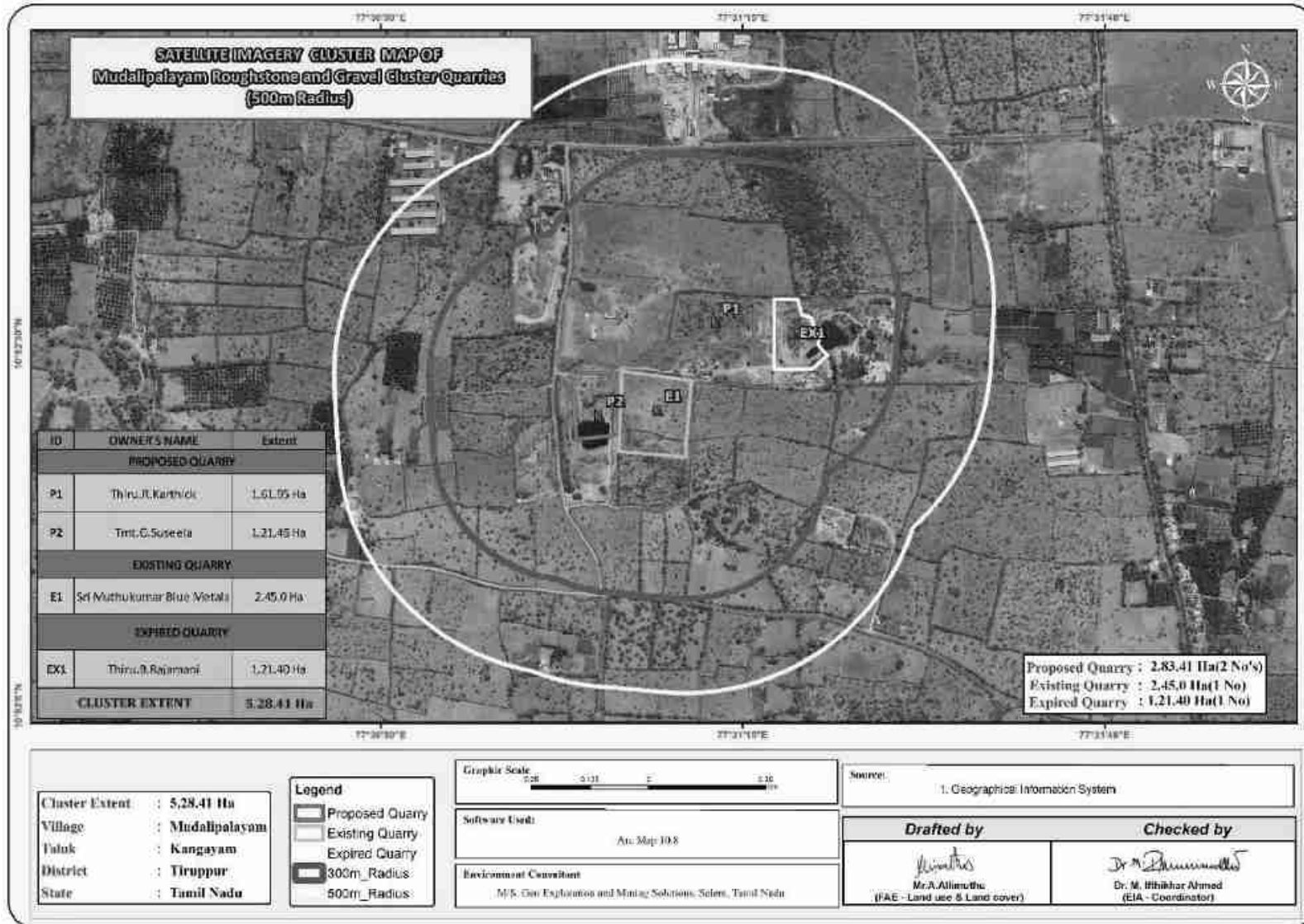
The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14<sup>th</sup> September 2006 and its subsequent amendments as per Gazette Notification S.O. 1889 of 20<sup>th</sup> April 2022, Mining Projects are classified under two categories i.e. A (> 250 Ha) and B ( $\leq$  250 Ha), and Schematic Presentation of Requirements on Environmental Clearance of Minor Minerals including cluster situation in Appendix–XI.

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B1 and appraised by SEAC/ SEIAA as well as for cluster situation.

The proposed projects are categorized under category “B1” Activity 1(a) (mining lease area in cluster situation) and will be considered at SEIAA – TN after conducting Public Hearing and Submission of EIA/EMP Report for Grant of Environmental Clearance.

**“Draft EIA report prepared on the basis of ToR Issued for carrying out public hearing for the grant of Environmental Clearance from SEIAA, Tamil Nadu”**

**FIGURE 1.1 SATELLITE IMAGERY CLUSTER QUARRIES**



## 1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENTS

### 1.2.1 Identification of Project Proponent

**TABLE 1.1: DETAILS OF PROJECT PROPONENT – P1**

<b>Name of the Project Proponent</b>	Thiru.R. Karthick
<b>Address</b>	S/o. Rajendran, No.72, Kavilipalayampudhur, Velampalayam, Tiruppur District, Tamil Nadu State – 641 652
<b>Mobile</b>	+91 98430 17407
<b>Email</b>	yuvaanraja@gmail.com
<b>Status</b>	Individual

**TABLE 1.1A: DETAILS OF PROJECT PROPONENT – P2**

<b>Name of the Project Proponent</b>	Tmt.G. Susila
<b>Address</b>	W/o. Gunasekaran, No.1/241, milk Society opposite, Kuppusamynaidupuram, Semmpalayam, Palladam, Tiruppur District, Tamil Nadu State – 641 662
<b>Mobile</b>	+91 85086 77996
<b>Email</b>	sritirupathybluemetals@gmail.com
<b>Status</b>	Individual

### 1.2.2 Identification of Project

**TABLE 1.2: SALIENT FEATURES OF THE PROPOSED PROJECT – P1**

Name of the Project	Thiru. R. Karthick Rough Stone and Gravel Quarry	
S.F. No.	984/2A1 (Part)	
Extent	1.61.95 ha	
Village, Taluk and District	Mudalipalayam Village, Kangayam Taluk, Tiruppur District.	
Land Type	It is a Patta Land, registered in the name of Thiru. B. Maheskumar vide patta No. 1035. The Applicant registered lease deed with the pattadhar	
Toposheet No	58-F/09	
Latitude between	10° 52' 29.32"N to 10° 52' 33.27"N	
Longitude between	77° 31' 10.08"N to 77° 31' 15.88"E	
Elevation of the area	295m AMSL	
Lease period	5 Years	
Mining Plan period	5 years	
Proposed Depth of Mining	37m bgl (2m Gravel + 35m Rough stone)	
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	5,63,570	32,204
Mineable Reserves	1,89,560	24,000
Year wise Production for Five years	1,89,560	24,000
Peak Production	39,660	10,560
Ultimate Pit Dimension	150m (L) x 80m (W) x 37m(D) bgl	
Water Level in the region	58-62 m bgl	

Method of Mining	Opencast Mechanized Mining Method involving drilling and Controlled blasting using Slurry Explosives	
Topography	The lease applied area exhibits plain terrain. The area has gentle sloping towards Eastern side and altitude of the area is 295m above from Mean Sea level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the surface outcrops & nearby existing quarry pit situated on the eastern side.	
Machinery proposed	Jack Hammer	6 Nos
	Compressor	2 Nos
	Excavator with Bucket and Rock Breaker	1 No
	Tippers	3 Nos
	Water Sprinkling Tanker	1 No
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone.	
Proposed Manpower Deployment	27 Nos	
Project Cost	Rs. 46,01,000/-	
EMP Cost	Rs. 3,80,000/-	
Total Project cost	Rs. 49,81,000/-	
CER Cost	Rs. 5,00,000/-	
Nearby Water Bodies	Varatukarai Odai	1.06Km_SE
	Odai	6.1Km_N
	Amaravathi River	8.1Km_SE
Greenbelt Development Plan	Proposed to plant 810 Nos of trees considering 500 Nos of trees/ Ha criteria. The plantation will be developed around the project site and nearby village roads.	
Proposed Water Requirement	2.0 KLD	
Nearest Habitation	750m – South West	
Nearest Reserve Forest	Uthiyur R.F – 705.48 m – North (Source - TNGIS)	
Nearest Wild Life Sanctuary	Vellode Birds Sanctuary – 43 Km – NE	

Source: Approved Mining & Land Documents.

**TABLE 1.2A: SALIENT FEATURES OF THE PROPOSED PROJECT – P2**

Name of the Project	Tmt. G. Susila Rough Stone and Gravel Quarry	
S.F. No.	986/B1 (Part)	
Extent	1.21.46 ha	
Village, Taluk and District	Mudalipalayam Village, Kangayam Taluk, Tiruppur District.	
Land Type	It is a Patta Land, registered in the name of applicant (Tmt.G.Susila) vide patta No.1026.	
Toposheet No	58-F/09	
Latitude between	10° 52' 23.36"N to 10° 52' 27.95"N	
Longitude between	77° 31' 03.24"N to 77° 31' 06.43"E	
Elevation of the area	279m AMSL	
Lease period	5 Years	
Mining Plan period	5 years	
Proposed Depth of Mining	42m bgl (2m Gravel + 40m Rough stone)	
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	3,68,926	8,396
Mineable Reserves	94,511	4,176



Year wise Production for Five years	94,511	4,176
Peak Production	19,526	4,176
Existing Pit Dimension	128m (L) x 84m (W) x 18m(D) bgl	
Ultimate Pit Dimension	128m (L) x 84m (W) x 42m(D) bgl	
Water Level in the region	58-62 m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and Controlled blasting using Slurry Explosives	
Previous History	The lease was previously operated by the Thiru.T.Gunasekaran vide proceeding's No. 384/Mines/2016, Dated: 16.04.2018 of the period of 16.04.2018 – 15.04.2023 with EC: Lr.No.SEIAA-TN/F.No.5898/1(a)/EC.No.3900/2016, Dated: 18.11.2016	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards Southeast side and altitude of the area is 279m above from Mean Sea level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the surface outcrops & nearby existing quarry pit situated on the eastern side.	
Machinery proposed	Jack Hammer	3 Nos
	Compressor	1 Nos
	Excavator with Bucket and Rock Breaker	1 No
	Tippers	2 Nos
	Water Sprinkling Tanker	1 No
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone.	
Proposed Manpower Deployment	20 Nos	
Project Cost	Rs. 37,17,000/-	
EMP Cost	Rs. 3,80,000/-	
Total Project cost	Rs. 40,97,000/-	
CER Cost	Rs. 5,00,000/-	
Nearby Water Bodies	Varatukarai Odai	1.07Km_SE
	Odai	6.2Km_N
	Amaravathi River	8.5Km_SE
Greenbelt Development Plan	Proposed to plant 600 Nos of trees considering 500 Nos of trees/ Ha criteria The plantation will be developed around the project site and nearby village roads	
Proposed Water Requirement	1.0 KLD	
Nearest Habitation	500m – South West	
Nearest Reserve Forest	Uthiyur R.F – 705.48 m – North (Source - TNGIS)	
Nearest Wild Life Sanctuary	Vellode Birds Sanctuary – 43 Km – NE	

Source: Approved Mining & Land Documents

### 1.3 BRIEF DESCRIPTION OF THE PROJECT

#### 1.3.1 Nature and Size of the Project

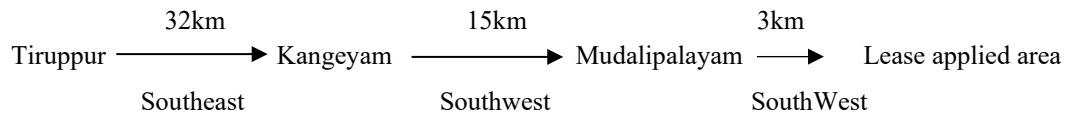
The quarrying operation is proposed to be carried out by Opencast Mechanized Mining method with 5.0m bench height and 5.0m bench width by deploying Jack Hammer Drilling & Slurry Explosive during blasting. Hydraulic Excavator and tippers are used for Loading and transportation. Rock Breakers are deployed to avoid secondary blasting.

**P1** - The peak production of Rough Stone is 39,660m<sup>3</sup> maximum in a year (132m<sup>3</sup> per day/ 12 Tippers per day considering 12m<sup>3</sup> per load). The depth of the mining is 37m bgl.

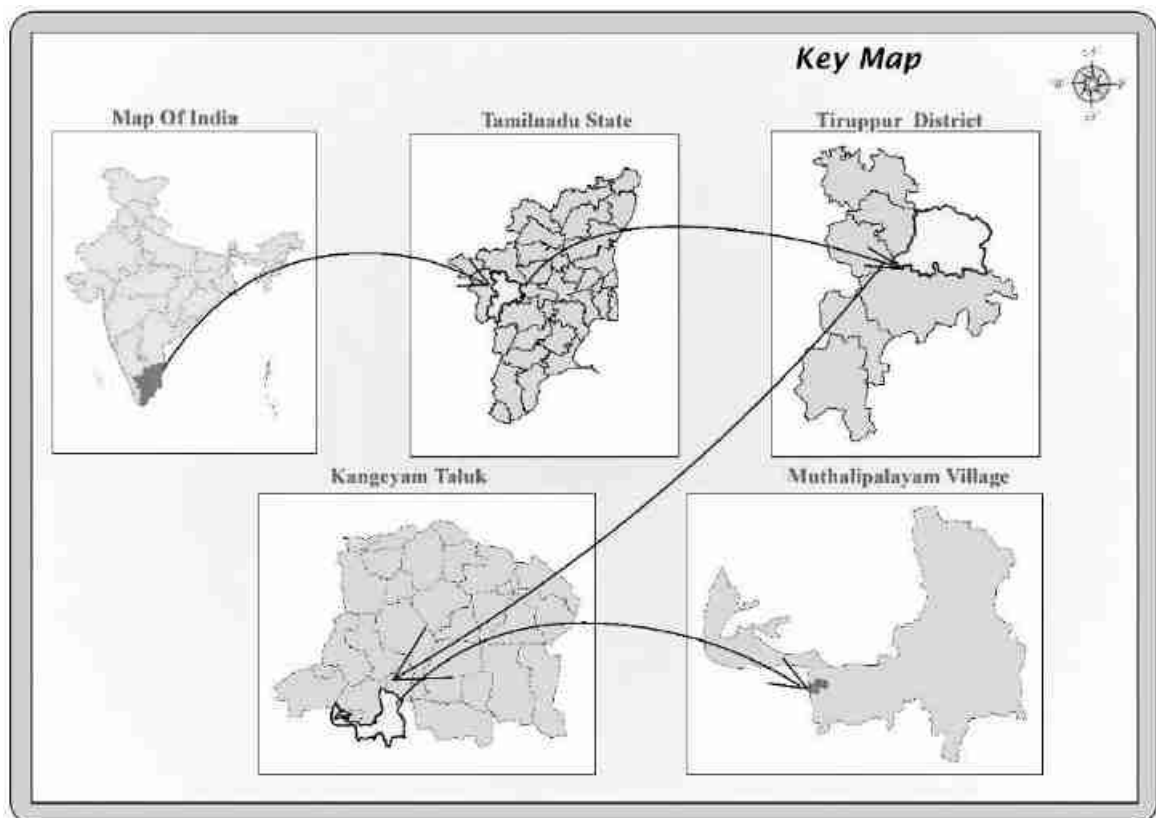
**P2** - The peak production of Rough Stone is 19,526m<sup>3</sup> maximum in a year (66m<sup>3</sup> per day/ 6 Tippers per day considering 12m<sup>3</sup> per load). The depth of the mining is 42m bgl.

### 1.3.2 Location of the Project

- The project site is located in Mudalipalayam Village, Kangayam Taluk, Tiruppur District.
- 32Km South East of Tiruppur town, 15km South West of Kangayam and lease applied area located along Mudalipalayam Village.



**FIGURE 1.2 LOCATION MAP OF THE PROJECT SITE**



Source: Survey of India Toposheet 58-H/15

**FIGURE 1.3: TOPOSHEET MAP OF THE STUDY AREA 10 KM RADIUS**

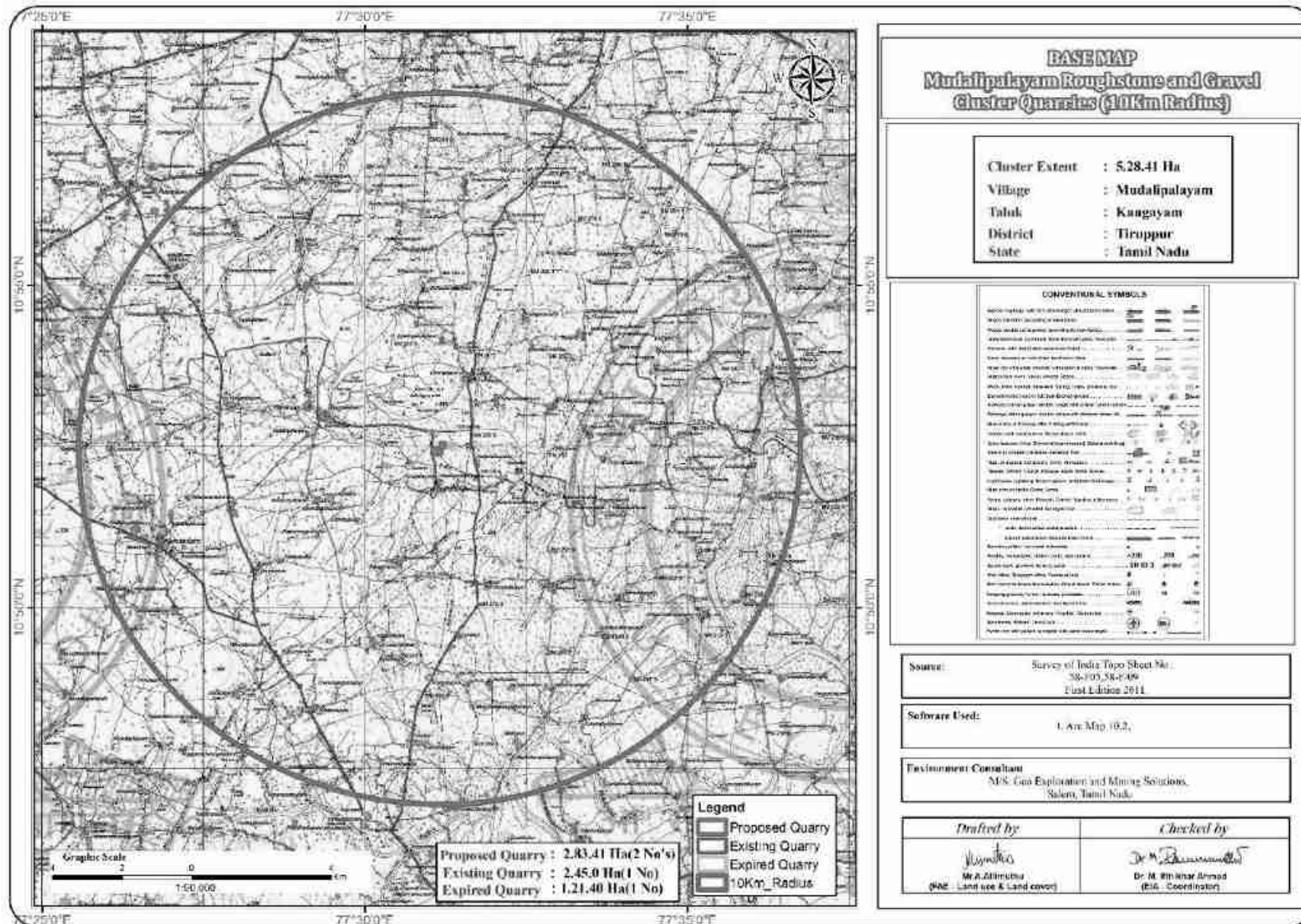
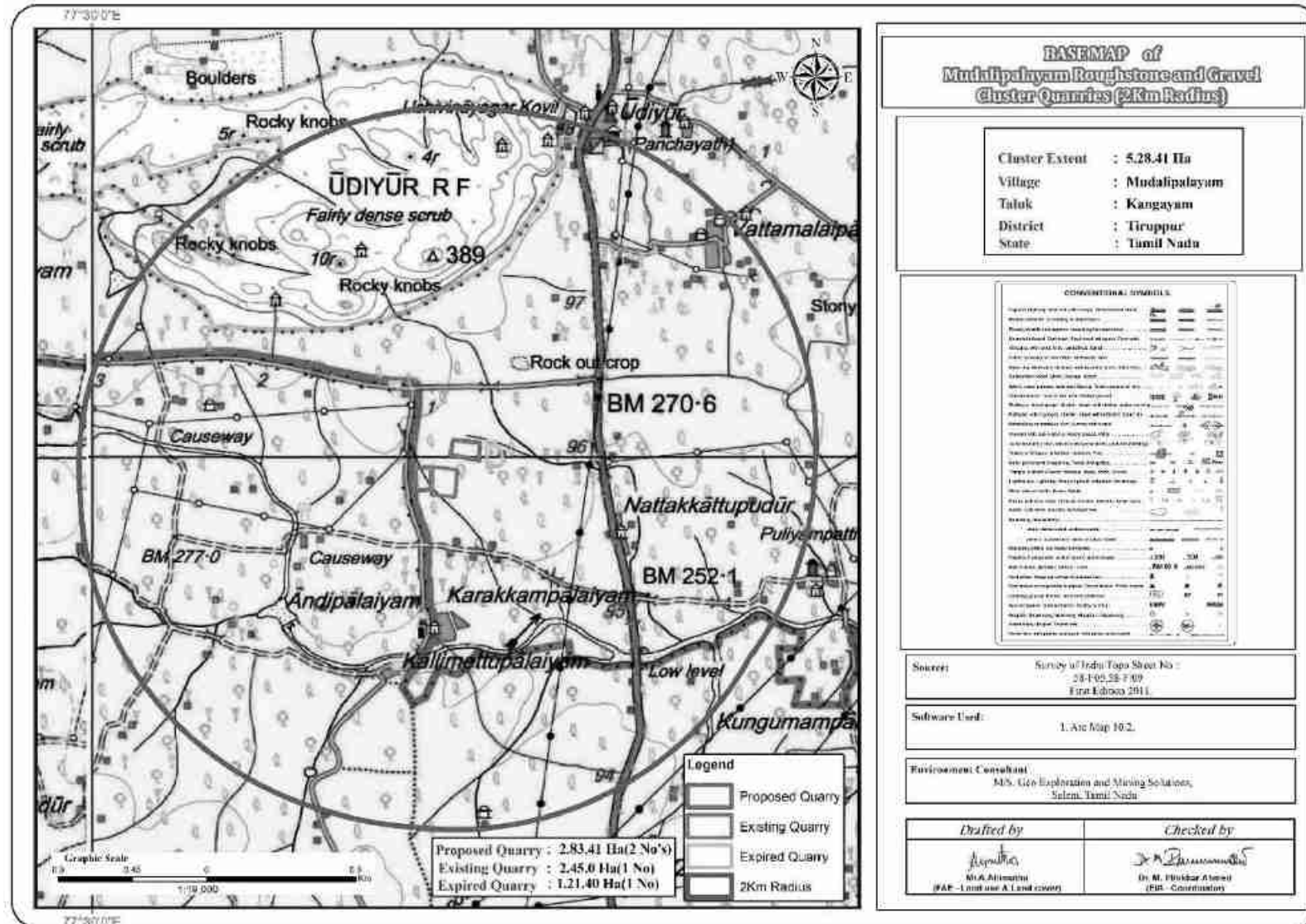


FIGURE 1.4: TOPOSHEET MAP OF THE STUDY AREA 2KM RADIUS



## 1.4 ENVIRONMENTAL CLEARANCE

The Environmental Clearance process for the project will comprise of four stages. These stages in sequential order are given below: -

- Screening,
- Scoping
- Public consultation &
- Appraisal

### SCREENING – P1

- Proponent applied for Rough Stone and Gravel quarry lease on 20.03.2023
- Precise area communication letter was issued by the District Collector vide RC. No. 110/Kanimam/2023 Dated 24.01.2024.
- The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Tiruppur District, vide RC. No. 110/Mines/2023 Dated 15.02.2024
- The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018
- Proponent applied for ToR for Environmental Clearance vide online Proposal No. SIA/TN/MIN/465628/2024. dated: 11.03.2024.

### SCREENING – P2

- Proponent applied for Rough Stone and Gravel quarry lease on 21.03.2023
- Precise area communication letter was issued by the District Collector vide RC. No. 112/Kanimam/2023 Dated 12.02.2024.
- The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Tiruppur District, vide RC. No. 112/Mines/2023 Dated 14.03.2024
- The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018
- Proponent applied for ToR for Environmental Clearance vide online Proposal No. SIA/TN/MIN/469431/2024. dated: 16.04.2024.

### SCOPING - P1:

- The proposal was placed in 457<sup>th</sup> SEAC meeting held on 03.04.2024 and the committee recommended for issue of ToR.
- The proposal was considered in 716<sup>th</sup> SEIAA meeting held on 03.05.2024 and issued Terms of Reference Identification: T024B0108TN5280988N Dated 24.05.2024

### SCOPING - P2:

- The proposal was placed in 467<sup>th</sup> SEAC meeting held on 16.05.2024 and the committee recommended for issue of ToR.
- The proposal was considered in 726<sup>th</sup> SEIAA meeting held on 03.06.2024 and issued Terms of Reference Identification: T024B0108TN5642030N Dated 07.06.2024

## **PUBLIC CONSULTATION**

Application to The Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district is submitted along with this Draft EIA/ EMP Report and the outcome of public hearing proceedings will be detailed in the Final EIA/EMP Report.

### **APPRAISAL –**

Appraisal is the detailed scrutiny by the State Expert Appraisal Committee (SEAC) of the application and other documents like the final EIA & EMP Report, outcome of the Public Consultations including Public Hearing Proceedings, submitted by the proponent to the regulatory authority concerned for grant of environmental clearance.

### **1.5 TERMS OF REFERENCE (ToR)**

The ToR was issued by the SEIAA vide Terms of Reference Identification: T024B0108TN5280988N Dated 24.05.2024 – P1 & T024B0108TN5642030N Dated 07.06.2024 – P2. The Details of the ToR Compliance is given in the Page No. A -CC

### **1.6 POST ENVIRONMENT CLEARANCE MONITORING**

The proponent shall submit a half-yearly compliance report in respect of stipulated Environmental Clearance terms and conditions to MoEF & CC Regional Office & SEIAA after grant of EC on 1<sup>st</sup> June and 1<sup>st</sup> December of each calendar year as per MoEF & CC Notification S.O. 5845 (E) Dated: 26.11.2018.

### **1.7 GENERIC STRUCTURE OF EIA DOCUMENT**

The overall contents of the EIA report follow the list of contents prescribed in the EIA Notification 2006 and the “Environmental Impact Assessment Guidance Manual for Mining of Minerals” published by MoEF & CC.

### **1.8 THE SCOPE OF THE STUDY**

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the summer season (March to May 2024) for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suggest suitable mitigation measures for likely adverse impacts due to the proposed project.

**TABLE 1.3: ENVIRONMENT ATTRIBUTES**

<b>Sl.No.</b>	<b>Attributes</b>	<b>Parameters</b>	<b>Source and Frequency</b>
1	Ambient Air Quality	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>2</sub>	Continuous 24-hourly samples twice a week for three months at 7 locations (2 Core & 5 Buffer)
2	Meteorology	Wind speed and direction, temperature, relative humidity and rainfall	Near project site continuous for three months with hourly recording and from secondary sources of IMD station

3	Water quality	Physical, Chemical and Bacteriological parameters	Grab samples were collected at 6 locations – 1 Surface water and 5 Ground water samples; once during study period.
4	Ecology	Existing terrestrial and aquatic flora and fauna within 10 km radius circle.	Limited primary survey and secondary data was collected from the Forest department.
5	Noise levels	Noise levels in dB(A)	8 locations – data monitored once for 24 hours during EIA study
6	Soil Characteristics	Physical and Chemical Parameters	Once at 6 locations during study period
7	Land use	Existing land use for different categories	Based on Survey of India topographical sheet and satellite imagery and primary survey.
8	Socio-Economic Aspects	Socio-economic and demographic characteristics, worker characteristics	Based on primary survey and secondary sources data like census of India 2011.
9	Hydrology	Drainage pattern of the area, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected from secondary sources as well as hydro-geology study report prepared.
10	Risk assessment and Disaster Management Plan	Identify areas where disaster can occur by fires and explosions and release of toxic substances	Based on the findings of Risk analysis done for the risk associated with mining.

Source: Field Monitoring Data

### 1.8.1 Regulatory Compliance & Applicable Laws/Regulations for all Proposed Quarries

- Application for Quarrying Lease as per Tamil Nadu Minor Mineral Concession Rules, 1959.
- Obtained Precise Area Communication Letter as per Tamil Nadu Minor Mineral Concession Rules, 1959 for Preparation of Mining Plan and obtaining Environmental Clearance.
- The Mining Plan has been approved under Rule 41 & 42 as amended of Tamil Nadu Minor Mineral Concession Rules, 1959.
- Terms of Reference Identification: P1 - T024B0108TN5280988N Dated 24.05.2024
- Terms of Reference Identification: P2 - T024B0108TN5642030N Dated 07.06.2024

\*\*\*\*\*

## 2. PROJECT DESCRIPTION

### 2.0 GENERAL

The Proposed Rough Stone Quarries requires Environmental Clearance. There are 2 proposed and 1 existing quarry forming a cluster; calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1<sup>st</sup> July 2016 and the total extent of cluster is 5.28.41 ha.

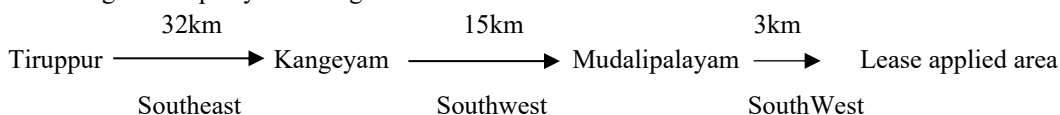
As the extent of cluster are more than 5 ha, the proposal falls under B1 Category as per the Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018, and requirement for EIA, EMP and Public Consultation for obtaining Environmental Clearance.

### 2.1 DESCRIPTION OF THE PROJECT

The proposed project is site specific and there is no additional area required for this project. There is no effluent generation/discharge from this project. Method of mining is opencast mechanized method involving splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers and rock breakers to avoid secondary blasting.

### 2.2 LOCATION OF THE PROJECT

- The project site is located in Mudalipalayam Village, Kangayam Taluk, Tiruppur District.
- 32 Km South East of Tiruppur town, 15 km South West of Kangayam and lease applied area located along Mudalipalayam Village.



**TABLE 2.1: SITE CONNECTIVITY**

Nearest Roadway	NH – 381 – Tiruppur – Oddanchatram -5.8 km – South West SH – 83A – Kangayam – Dharapuram -1.0km – North East
Nearest Village	Karukkampalayam – 1.0Km – South East
Nearest Town	Kangayam – 15.2 km – Northeast
Nearest Railway Station	Uttukuli –31.9Km – North West
Nearest Airport	Coimbatore – 55km – North West
Seaport	Thoothukudi - 244km – South West

Source: Survey of India Toposheet

**TABLE 2.2: CO-ORDINATES – PROJECT BOUNDARY – P1**

Corner Nos.	Latitude	Longitude
1	10°52'30.39" N	77°31'10.08" E
2	10°52'33.27" N	77°31'10.64" E
3	10°52'32.72" N	77°31'15.88" E
4	10°52'29.32" N	77°31'15.68" E
<b>Datum: UTM-WGS84, Zone 43 North</b>		

Source: Approved Mining Plan



**TABLE 2.2A: CO-ORDINATES – PROJECT BOUNDARY – P2**

Corner Nos.	Latitude	Longitude
1	10°52'23.36" N	77°31'03.50" E
2	10°52'27.91" N	77°31'03.24" E
3	10°52'27.95" N	77°31'06.18" E
4	10°52'23.64" N	77°31'06.43" E

**Datum: UTM-WGS84, Zone 43 North**

**FIGURE 2.1: TOPOGRAPHICAL VIEW OF PROJECT AREA – P1**

Project Site Photographs



Fencing & Greenbelt at Project site

**FIGURE 2.1A: TOPOGRAPHICAL VIEW OF PROJECT AREA – P2**



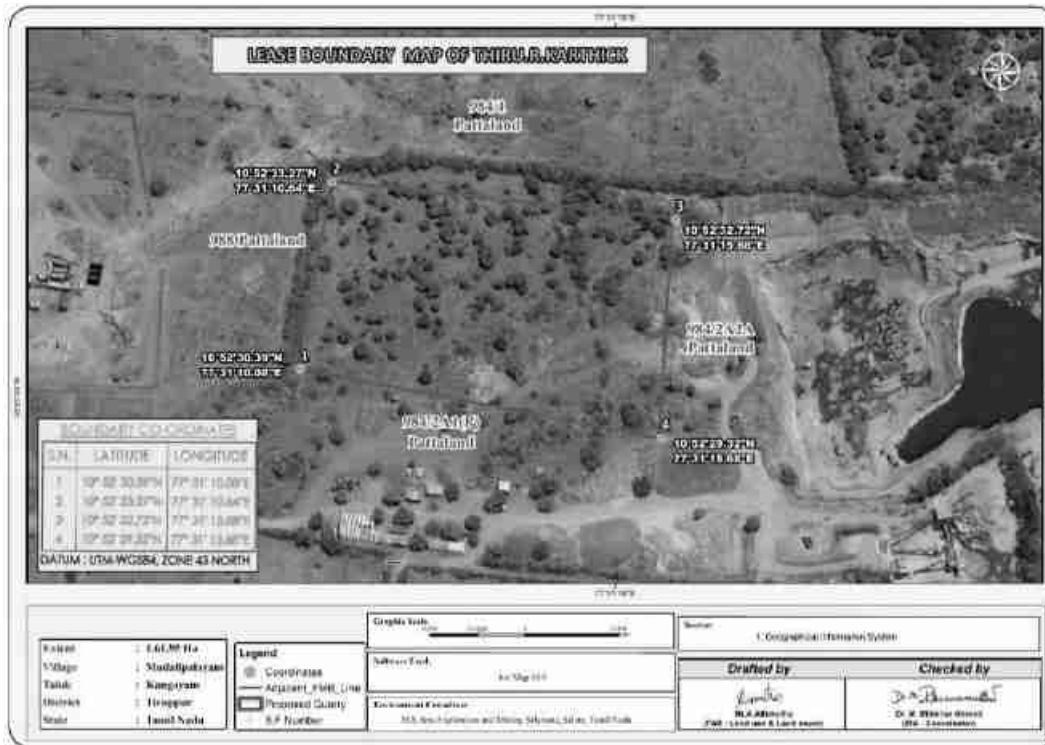


Project Site Photographs



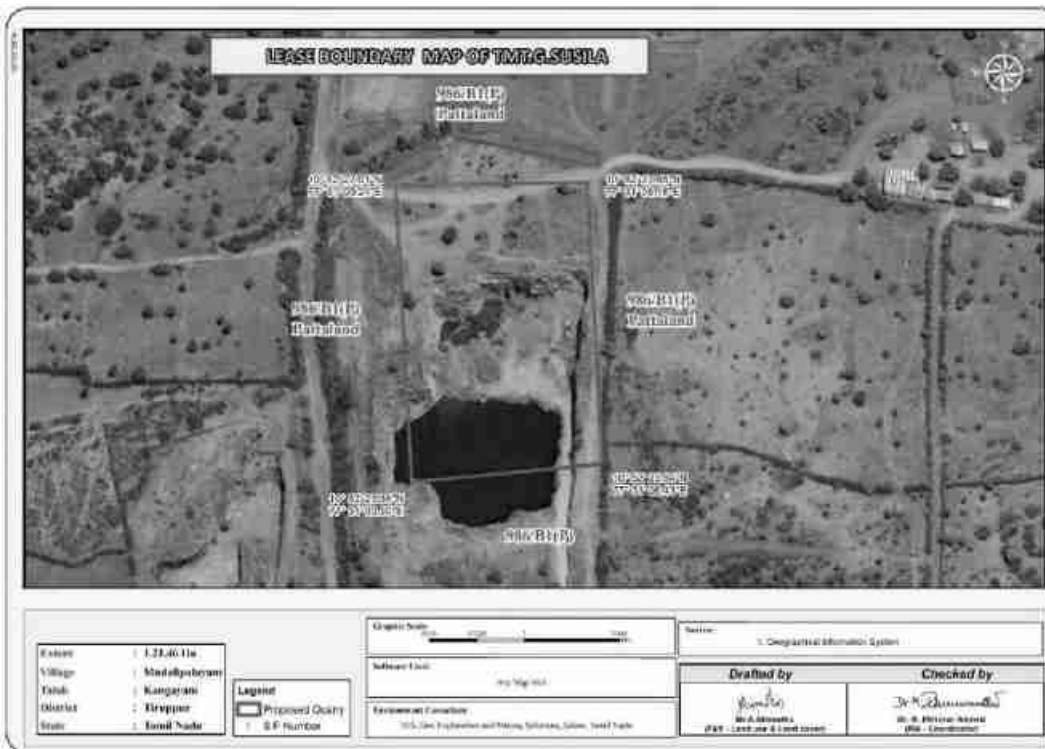
Fencing & Greenbelt at Project site

**FIGURE 2.2: GOOGLE IMAGE OF THE PROJECT AREA – P1**

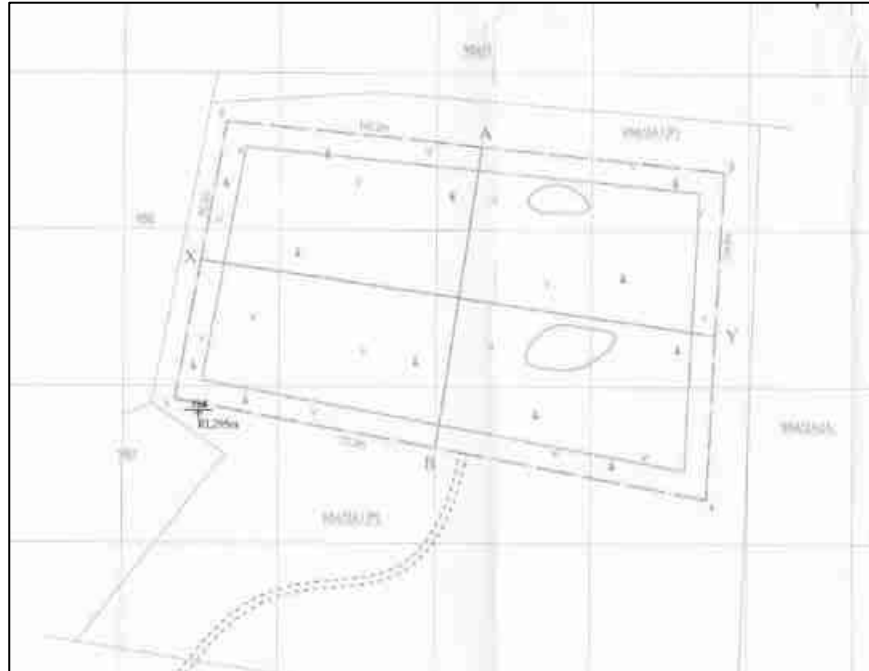


Source: Google Earth Imagery

**FIGURE 2.2A: GOOGLE IMAGE OF THE PROJECT AREA – P2**

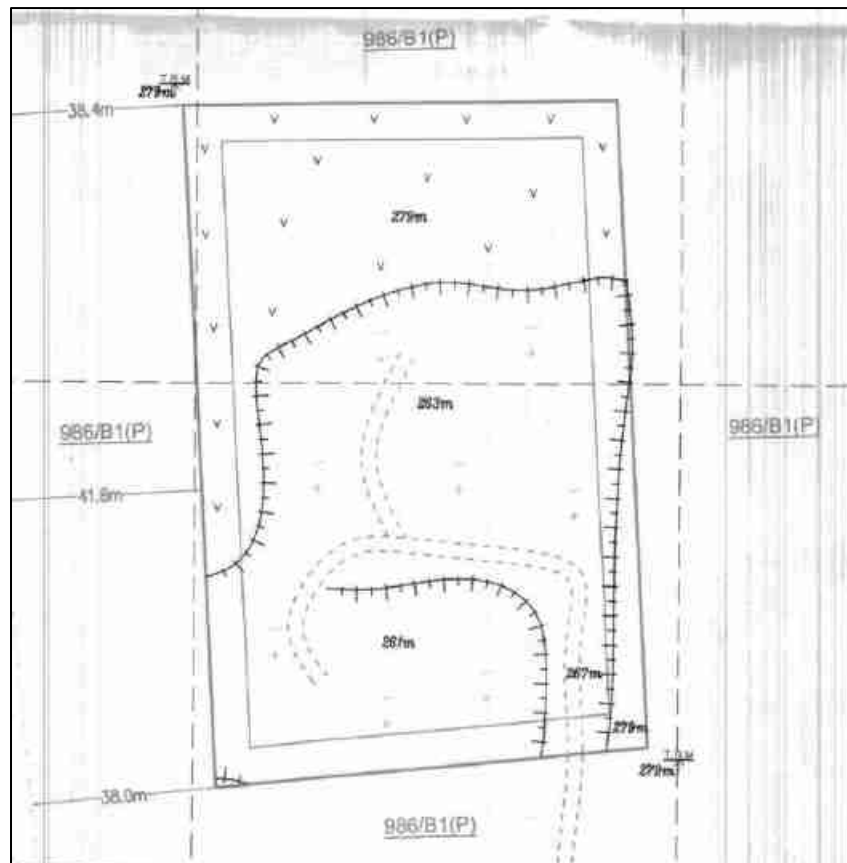


**FIGURE 2.3: QUARRY LEASE PLAN / SURFACE PLAN – P1**



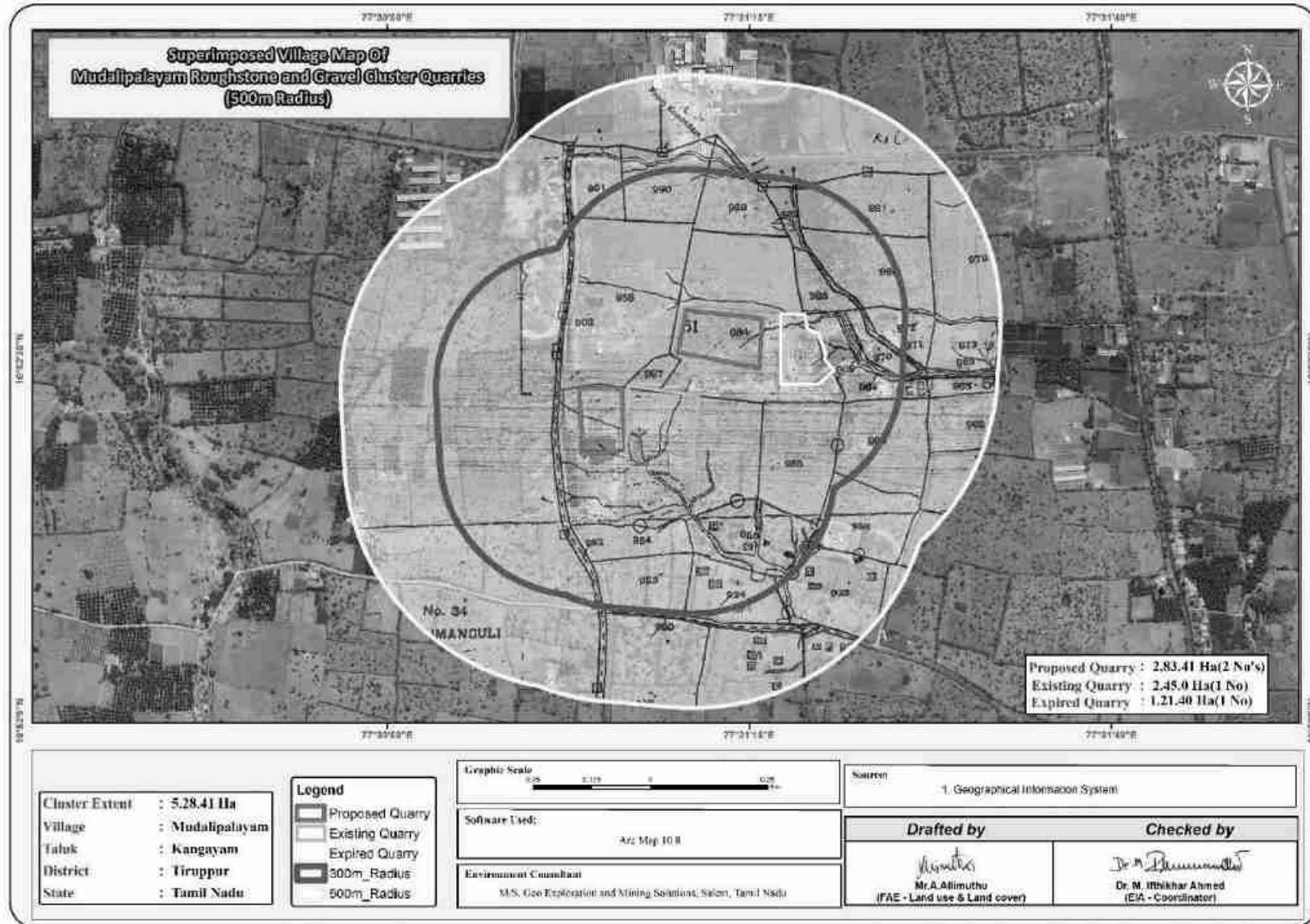
Source: Approved Mining Plan

**FIGURE 2.3A: QUARRY LEASE PLAN / SURFACE PLAN – P2**

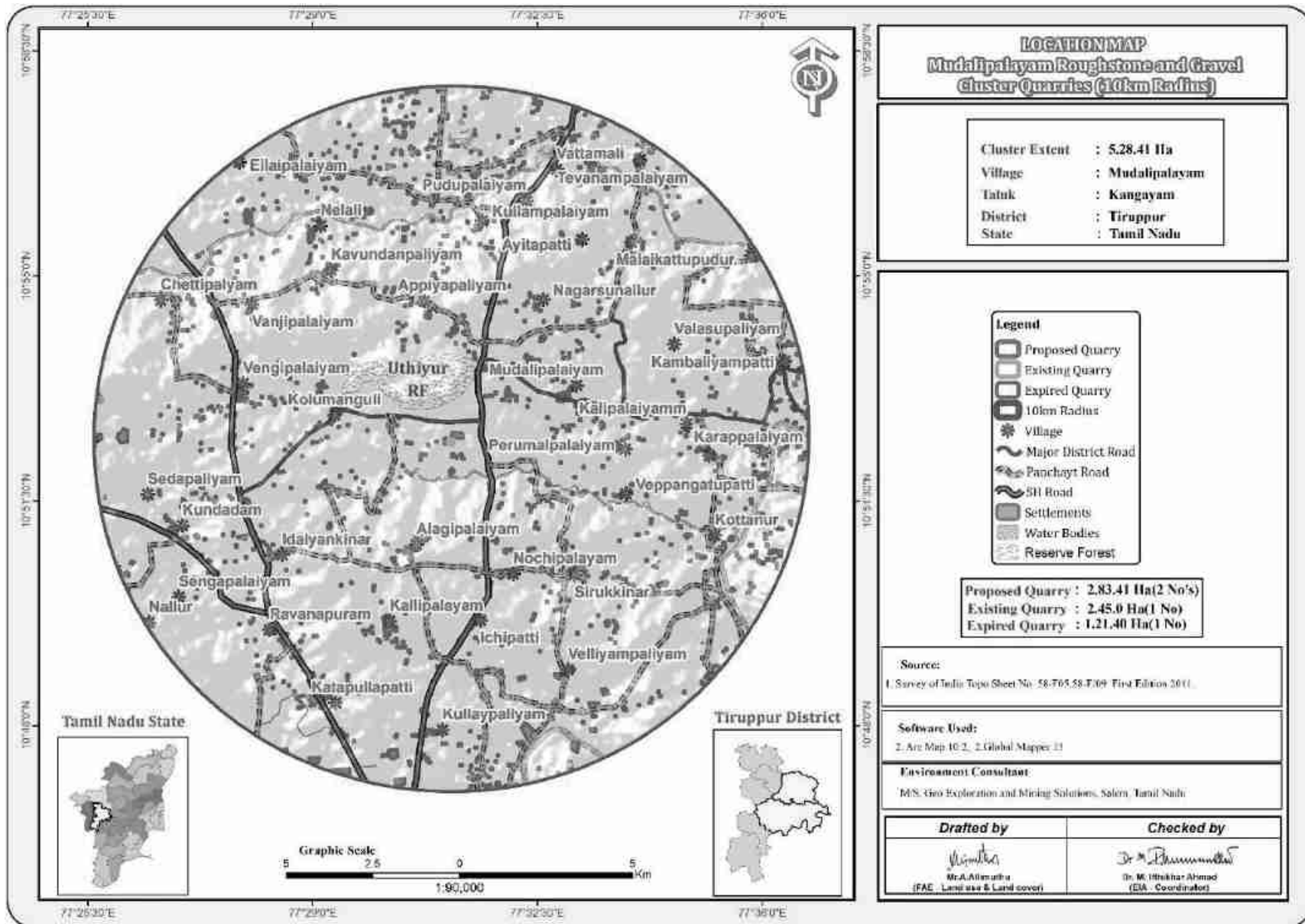


Source: Approved Mining Plan

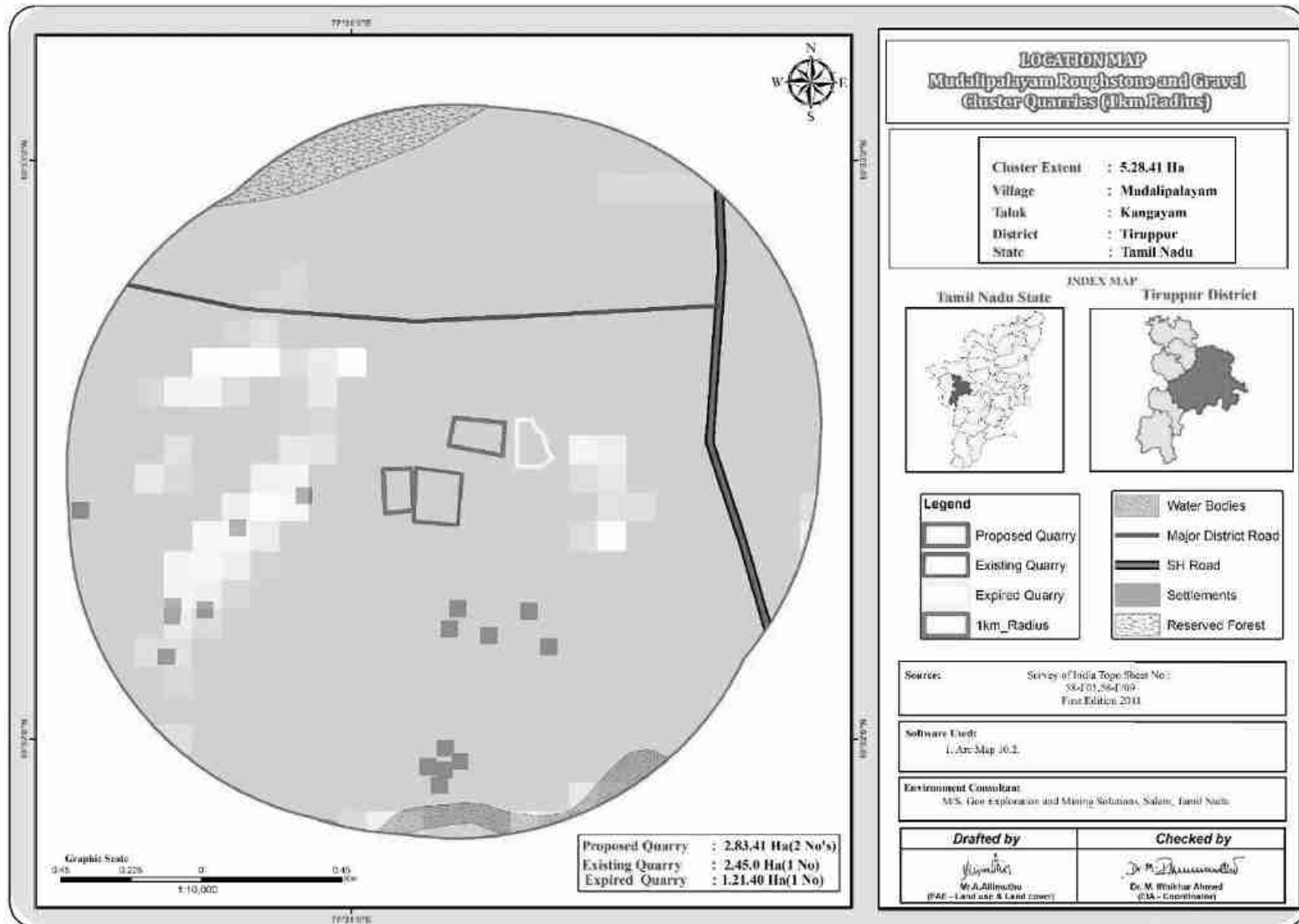
**FIGURE 2.4: VILLAGE MAP SUPERIMPOSED ON GOOGLE EARTH IMAGE**



**FIGURE 2.5: IMAGE SHOWING SURFACE FEATURES AROUND 10 KM RADIUS**



**FIGURE 2.6: IMAGE SHOWING SURFACE FEATURES AROUND 1 KM RADIUS**





### 2.2.1 Project Area

- The project is site specific & no beneficiation or processing in the project site.
- There is no forest land involved in the proposed projects and is devoid of major vegetation and trees.

**TABLE 2.3: LAND USE PATTERN – P1**

Description	Present area (Ha)	Area required during the first five year (Ha)	Area at the end of this quarrying period (Ha)
Area under quarrying	Nil	1.23.30	0.74.8
Infrastructure	Nil	0.01.00	0.01.0
Roads	Nil	0.02.00	0.02.0
Green Belt	Nil	0.24.00	0.08.2
Unutilized Area	1.61.95	0.11.65	0.05.0
<b>Grand Total</b>	<b>1.61.95</b>	<b>1.61.95</b>	<b>1.61.95</b>

Source: Approved Mining

**TABLE 2.3A: LAND USE PATTERN – P2**

Description	Present area (Ha)	Area at the end of this quarrying period (Ha)
Area under quarrying	0.75.7	1.00.6
Infrastructure	Nil	0.01.0
Roads	0.01.0	0.02.0
Green Belt	Nil	0.13.9
Unutilized Area	0.44.7	0.03.9
<b>Grand Total</b>	<b>1.21.4</b>	<b>1.21.4</b>

Source: Approved Mining

### 2.2.2 Size or Magnitude of Operation

**TABLE 2.4: RESOURCES AND RESERVES – P1**

PARTICULARS	DETAILS	
	Rough Stone in m <sup>3</sup>	Gravel in m <sup>3</sup>
Geological Resources	5,63,570	33,204
Mineable Reserves	1,89,560	24,000
Production for five-year plan period	1,89,560	24,000
Peak Production	39,660	10,560
Mining Plan Period / Lease Applied Period	5 Years	
Number of Working Days	300 Days	
Production per day	133	36
No of Lorry loads (12m <sup>3</sup> per load)	12	3
Total Depth of Mining	37m (2m Gravel +35m Rough stone) below ground level.	

Source: Approved mining plan.

**TABLE 2.4A: RESOURCES AND RESERVES – P2**

PARTICULARS	DETAILS	
	Rough Stone in m <sup>3</sup>	Gravel in m <sup>3</sup>
Geological Resources	3,68,926	8,396
Mineable Reserves	94,511	4,176
Production for five-year plan period	94,511	4,176
Peak Production	19,526	4,176
Mining Plan Period / Lease Applied Period	5 Years	
Number of Working Days	300 Days	
Production per day	66	14
No of Lorry loads (12m <sup>3</sup> per load)	6	1
Total Depth of Mining	42m (2m Gravel +40m Rough stone) below ground level.	

## 2.3 GEOLOGY

### 2.3.1 Regional Geology

Tiruppur district of Tamil Nadu forms a part of southern Granulitic terrain and is predominantly occupied by crystalline rocks of Archaean to late Proterozoic age. Regionally, the rocks can be grouped under five categories namely –

- I. Charnockite Group represented by Charnockite, Pyroxene Granulite and Magnetite Quartzite,
- II. Peninsular Gneissic Complex (II) comprising hornblende-biotite gneiss,
- III. Basic intrusive include Pyroxinite/Dunite
- IV. Younger intrusive comprising, Nepheline-Syenite, Pink Granite, Pegmatite and Quartz veins and
- V. Quaternary sediments of Kankar and soil

#### Stratigraphy of the area: -

Age	Group	Lithology
Holocene		Block cotton soil/clay ± gypsum
Cenozoic		Kankar/calc-tufa
Neoproterozoic	Acid intrusives	Quartz veins Pegmatite Pink Granite
	Sivamalai syenite Complex	Nepheline-syenite
	Chalk Hills (Basic Intrusives)	Pyroxenite/Dunite
Archaean - Palaeoproterozoic	Peninsular Gneissic Complex (II) PGC (II)	Pink Granite Gneiss Hornblende Biotite gneiss
Archaean	Charnockite Group	Charnockite (Unclassified) Pyroxene Granulite Banded Magnetite Quartzite

Tiruppur District is predominantly occupied by hornblende Biotite gneisses of PGC (II) with enclaves of Magnetite Quartzite, Pyroxene Granulite and Charnockite. The area exposes several bands of Pyroxene Granulite which is medium grained, medium to dark grey in colour and stand out prominently in the gneissic country generally

parallel to regional foliation. Charnockite is coarse grained, massive, many places it is foliated, grey colored and greasy and exposed as boulder outcrops and small knolls. It is well exposed in Central, Western and Southern parts of the Tiruppur District. The general strike of foliation varies from ENE-WSW, E-W with dipping towards NW and N respectively.

Hornblende-Biotite gneiss is well foliated, medium to coarse grained, pale grey and exposed as sheets and small knolls. Pink Granite gneiss occurs as thin bands and lensoidal bodies. It is a medium grained rock composed of alternating bands of mafic (mainly of biotite and hornblende) and felsic (Feldspar and Quartz) minerals. It is well recognized in Avinasi area.

Basic intrusives such as pyroxinite/dunite occurs as Outcrop and lensoidal bodies in the country rock and mostly concordant to the regional foliation. Many basic intrusive are reported in south and south-east of Tiruppur town. The trend of these bodies is east-west.

Nepheline syenite is a leucocratic, coarse-grained rock and composed mainly of Feldspar with Nepheline and shows pitted appearance due to removal of Nepleline. This alkaline rock is available in and around Sivanmalai area only. Acid intrusives comprising pink granite, pegmatite and quartz veins are traversed country rocks in micro (cm wide-meter long) to meso-scale (few meters wide and several meter long) extend. Granite is exposed around 9 km SW of Avanashi. Small scale pegmatite and quartz veins are noticed almost in all the rock types. Acid intrusives are overlain by sediments of Quaternary age, represented by Kankar and black cotton soil with Gypsum. Most of the area is covered by brown and red brown soil. Some part of the area covered with black cotton soil contains Gypsum as lumps. Black cotton soil covers south-western part of the district.

Source: District Survey Report for Minor Minerals Tiruppur District – May 2019

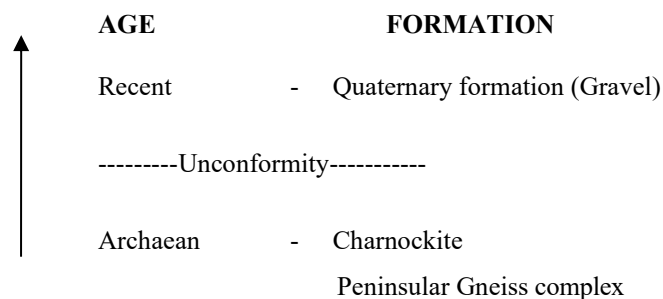
<https://cdn.s3waas.gov.in/s3d1f255a373a3cef72e03aa9d980c7eca/uploads/2019/05/2019052585.pdf>

### 2.3.2. Local Geology

The lease applied area is a exhibits plain terrain. The area has gentle sloping towards Eastern side and altitude of the area is 295m above from Mean Sea level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the nearby existing quarries.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N70°E – S70°W with dipping towards NW30°.

The general geological sequences of the rocks in this area are given below:



### 2.3.4 Hydrogeology

Tiruppur District is underlain by crystalline metamorphic complex in the western parts of district and sedimentary tract in eastern side. An area of 4551 Sq.km is covered by crystalline rocks (63%) and 2671 Sq.km is covered by sediments (37%). The general geological sequence of formation is given below:

Quaternary - Laterites, Sands and Clays

Tertiary - Sandstone, Gravels and Clays

Cretaceous - Limestone, Calcareous Sandstone and Clay unconformity.

Archaean - Charnockites, Gneisses, Granites, Dolerites and Pegmatite

- The major part of the area is covered by metamorphic crystalline rocks of charnockite, granitic gneiss of Archaean age intruded by dolerite dykes and pegmatite veins. These rocks are highly metamorphosed and have been subjected to very severe folding, crushing and faulting.
- Ground Water occurs under the phreatic condition and wherever there are deep seated fractures, it occurs under semi-confined to confined conditions.
- Occurrence of Ground Water in hard rock depends upon the intensity and depth of weathering, fractures and fissures present in the rocks.
- Granites and gneisses yield moderately compared to the yield in Charnockites.
- Depth of well in hard rock generally ranges between 8 and 15m below ground level.
- Generally, yield in open wells ranges from 30 to 250m<sup>3</sup> /day and in bore well between 260 and 430 m<sup>3</sup> /day. The weathered thickness varies from 2.5 m to 42m in general there are 3 to 5 fracture zones within 100 m and 1 to 4 fracture zones between 100 and 200 m.

The Cretaceous formation is represented by Arenaceous Lime stone, Calcareous sand - stone and marl. The Tertiary formation is argillaceous comprising of Silty clay stones, argillaceous Lime stone.

The Quaternary deposits represented by the river deposits of Ponnaiyar and Varahanadhi spread over as patches in Tiruppur District. The alluvium consists of unconsolidated sands, gravelly sands, clays and clayey sands. The thickness of the sands ranges between 15 and 25 m in the alluvial formation which also form potential aquifers. In some areas, sand stone of tertiary formation are the potential groundwater reservoirs.

#### **Aquifer Systems:**

Occurrence and storage of groundwater depend upon three factors viz., Geology, Topography and rainfall in the form of precipitation. Apart from Geology, wide variation in topographic profile and intensity of rainfall constitutes the prime factors of groundwater recharge. Aquifers are part of the more complex hydro geological system and the behaviour of the entire system cannot be interpreted easily. In hard rock terrain the occurrence of Ground Water is limited to top weathered, fissured and fractured zone which extends to maximum 30m on an average it is about 10-15 m in Tiruppur District.

In Sedimentary formations, the presence of primary inter granular porosity enhances the transmitting capacity of groundwater where the yield will be appreciable. The sedimentary area which occupies the eastern part of the district along the coastal tract is more favourable for groundwater recharge. Ground Water occurs both in semi confined and confined conditions. A brief description of occurrence of groundwater in each formation is furnished below.

#### **Alluvial Formations**

In the river alluvium groundwater occurs under water table condition. The maximum thickness is 37 m and the average thickness of the aquifer is approximately 12 m. These formations are porous and permeable which have good water bearing zones.

#### **Tertiary Cuddalore sandstone**

Tertiary formations are represented by Cuddalore Sandstone and characterised as fluvial to brackish marine deposits. Predominantly this formation is divided into Lower and Upper Cuddalore formations. In the Upper Cuddalore formations the groundwater occurs in semi confined conditions, whereas in the Lower Cuddalore the groundwater occurs in confined condition with good groundwater potential.

#### **Cretaceous Formations**

Groundwater occurring in the lens shape in the sandy clay lenses and fine sand is underlain by white and black clay beds which constitute phreatic aquifer depth which ranges 10m to 15m below ground level. Phreatic aquifer in Limestone is potential due to the presence of Oolitic Limestone.

#### **Hard Rock Formations**

Groundwater occurs under water table conditions but the intensity of weathering, joint, fracture and its development are much less in other type of rocks when compared to gneissic formation. The groundwater potential is low, when compared with the gneissic formations.

**Granitic Gneiss**

Groundwater occurs under water table conditions in weathered, jointed and fractural formations. The pore space developed in the weathered mantle acts as shallow granular aquifers and forms the potential water bearing and yielding zones water table is shallow in canal and tank irrigation regions and it is somewhat deeper in other regions.

**Charnockite**

Groundwater occurs under water table conditions but the intensity of weathering, joint, fracture and its development are much less when compared to gneissic formations. The groundwater potential is low, when compared with the gneissic formations.

**Aquifer Parameters**

The thickness of aquifer in this district is highly erratic and varies between 15 m to 40 m below ground level. The inter granular Porosity is essentially dependent on the intensity and degree of weathering and fracture development in the bed rock. As discussed earlier deep weathering has developed in Gneissic formations and moderate weathering in charnockite formations. The range of aquifer parameters in hard rock and sedimentary formations are given below:

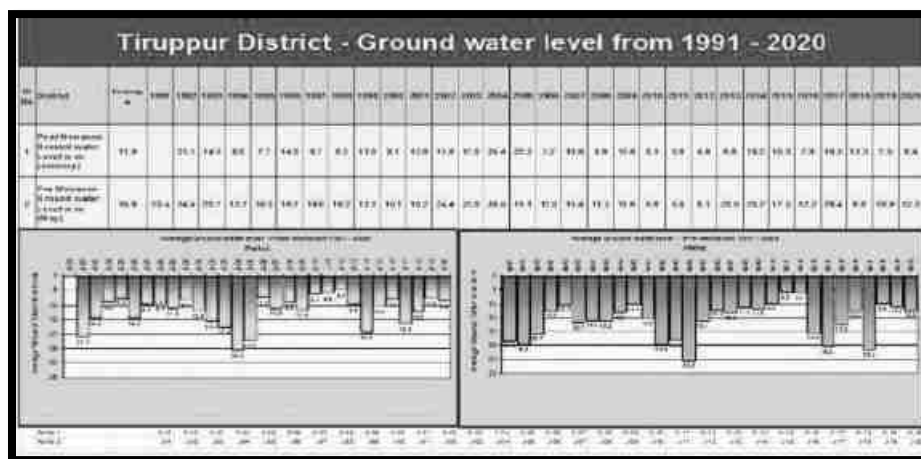
**TABLE 2.5: RANGE OF AQUIFER PARAMETERS**

Name	Sp. Capacity (lpm/d)	Specific Yield (%)	T (m <sup>2</sup> /d)	K (m/day)	Yield of wells (lps)
Alluvium	2.08	7.2	98	19.7	2.5
Tertiary	78-173	1.4-3.5	46-134	16-33	2-3.3
Cretaceous	33-782	0.3-2.56	33-782	10-66	1.1-3.5
Crystalline	27-224	0.8-2.5	16-60	5-20	1-2

Source: <http://nwm.gov.in/sites/default/files/Notes%20on%20Trippur%20District.pdf>

The Ground Water levels from the 38 number of observation wells of TWAD have been analyzed for Post-Monsoon and Pre-Monsoon.

**FIGURE 2.8: GROUND WATER LEVEL VARIATIONS OF TIRUPPUR DISTRICT**

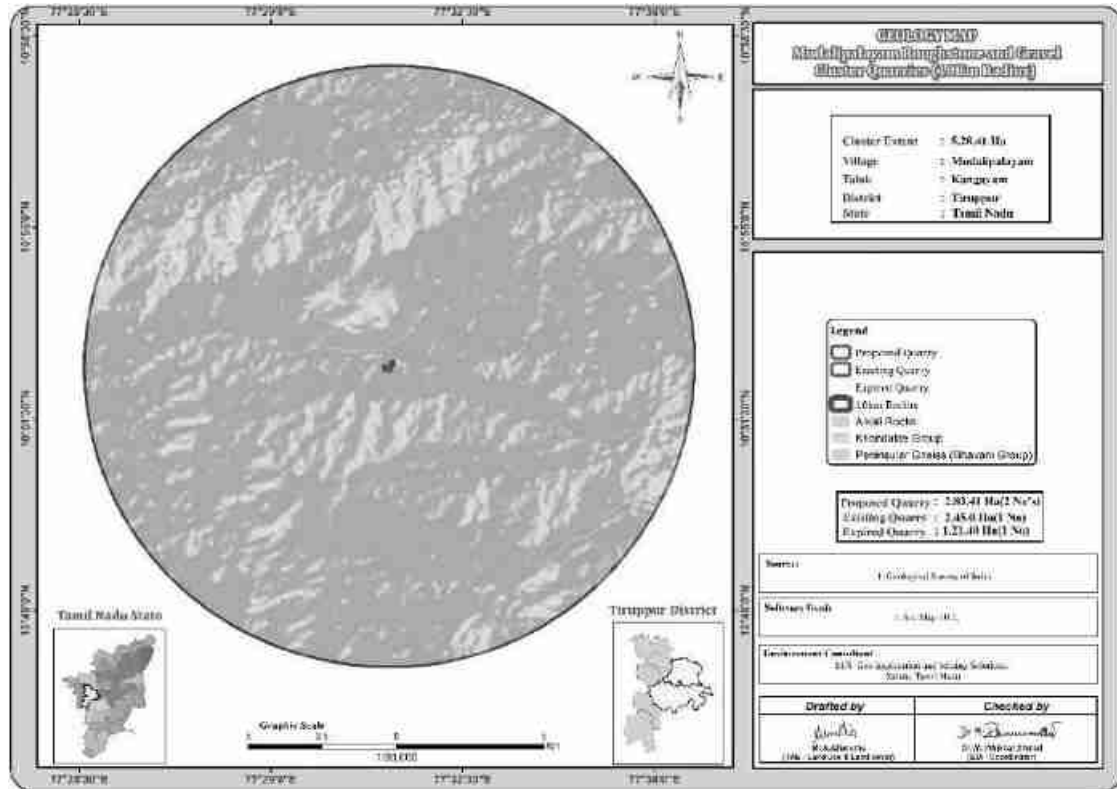


**TABLE 2.6: GROUND WATER LEVEL VARIATIONS OF TIRUPPUR DISTRICT**

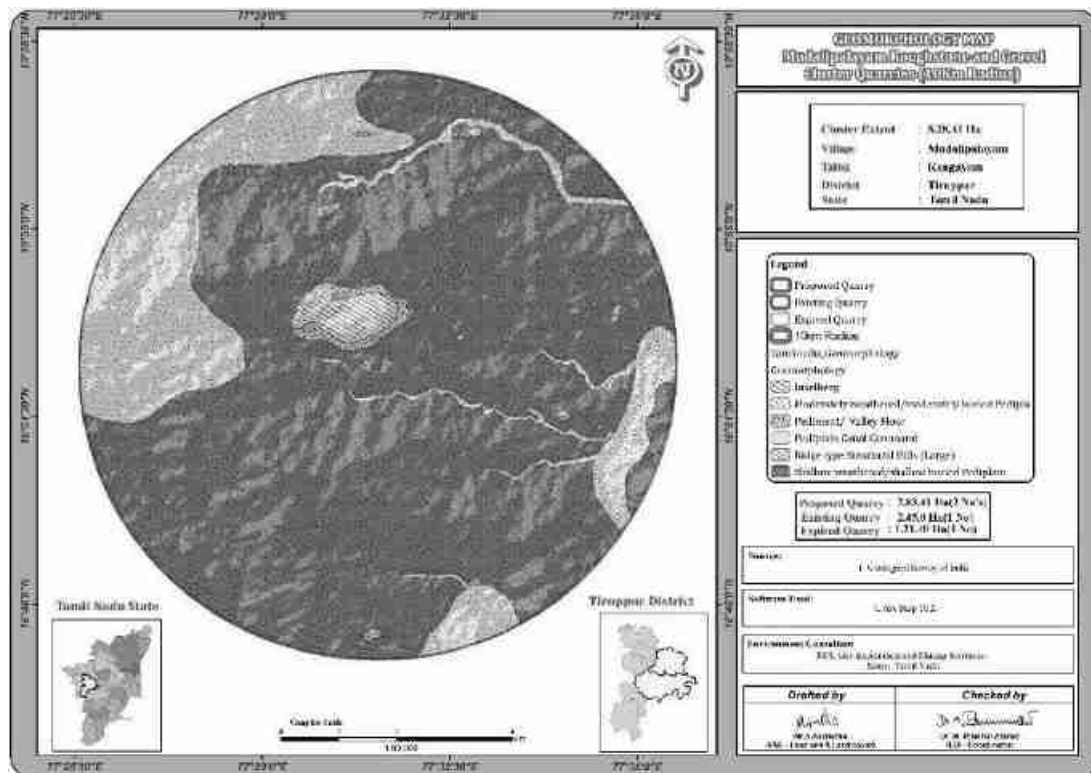
Jan 2017	May 2017	Jan 2018	May 2018	Jan 2019	May 2019	Jan 2020	May 2020	Jan 2021	May 2021	5 Years Pre-Monsoon Average	5Years Post Monsoon Average
16.3	26.4	12.4	9.8	7.6	10.9	8.4	12.3	7.1	10.6	11.9	8.8

Source: <https://www.twadboard.tn.gov.in/content/tiruppur>

**FIGURE 2.7: REGIONAL GEOLOGY MAP**



**FIGURE 2.8: GEOMORPHOLOGY MAP**



## 2.4 RESOURCES AND RESERVES

The Resources and Reserves of Rough Stone and Gravel were calculated based on Cross-Section Method by plotting sections to cover the maximum lease area. Based on the availability of Geological Resources the Mineable Reserves are calculated by considering excavation system of bench formation and leaving essential safety distance of 7.5 m (Safety Barrier all around the applied area) and safety distance as per precise area communication letter and deducting the locked up reserves during bench formation (Also called as Bench Loss) and the Mineable Reserves is calculated considering there is no waste / overburden / side burden (100% Recovery Anticipated).

**TABLE 2.5: RESOURCES AND RESERVES – P1**

Description	Rough Stone m <sup>3</sup>	Gravel m <sup>3</sup>
Geological Resource in m <sup>3</sup>	5,63,570	32,204
Mineable Resource in m <sup>3</sup>	1,89,560	24,000
Year wise production for five-year plan period	1,89,560	24,000

Source: Approved Mining Plan

**TABLE 2.5A: RESOURCES AND RESERVES – P2**

Description	Rough Stone m <sup>3</sup>	Gravel m <sup>3</sup>
Geological Resource in m <sup>3</sup>	3,68,926	8,396
Mineable Resource in m <sup>3</sup>	94,511	4,176
Year wise production for five-year plan period	94,511	4,176

Source: Approved Mining Plan

**TABLE 2.6: YEAR-WISE PRODUCTION PLAN FIVE YEARS - P1**

YEAR	ROUGH STONE (m <sup>3</sup> )	GRAVEL (m <sup>3</sup> )
I	38,200	10,560
II	39,600	4,800
III	37,260	8,640
IV	39,660	-
V	34,840	-
<b>TOTAL</b>	<b>1,89,560</b>	<b>24,00</b>

Source: Approved Mining Plan

**TABLE 2.6A: YEAR-WISE PRODUCTION PLAN FIVE YEARS – P2**

YEAR	ROUGH STONE (m <sup>3</sup> )	GRAVEL (m <sup>3</sup> )
I	18,140	4,176
II	18,560	-
III	18,215	-
IV	19,526	-
V	19,070	-
<b>TOTAL</b>	<b>94,511</b>	<b>4,176</b>

Source: Approved Mining Plan

### Disposal of Waste

The overburden in the form of Gravel formation is about 28,176m<sup>3</sup> up to depth 2m during this period. the Gravel will be directly loaded into tippers for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fees to the Government.

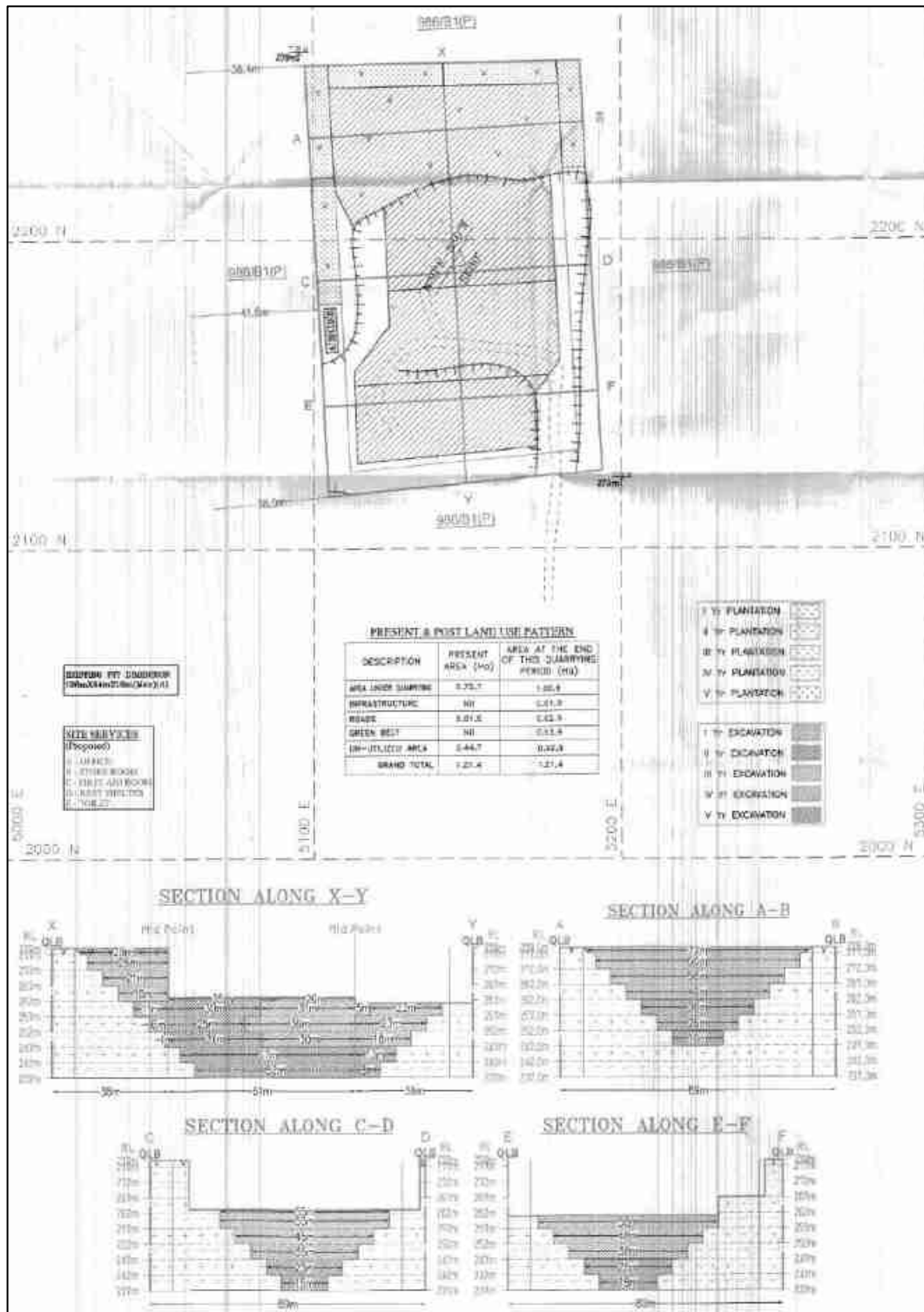
**FIGURE 2.9: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS -P1**



Source: Approved Mining Plan



**FIGURE 2.9A: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS - P2**



Source: Approved Mining Plan

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## Conceptual Mining Plan/ Final Mine Closure Plan

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.

**TABLE 2.7: ULTIMATE PIT DIMENSION – P1**

<b>Length (Max) (m)</b>	<b>Width (Max) (m)</b>	<b>Depth (Max)</b>
150	80	37m bgl

Source: Approved Mining Plan

**TABLE 2.7A: ULTIMATE PIT DIMENSION – P2**

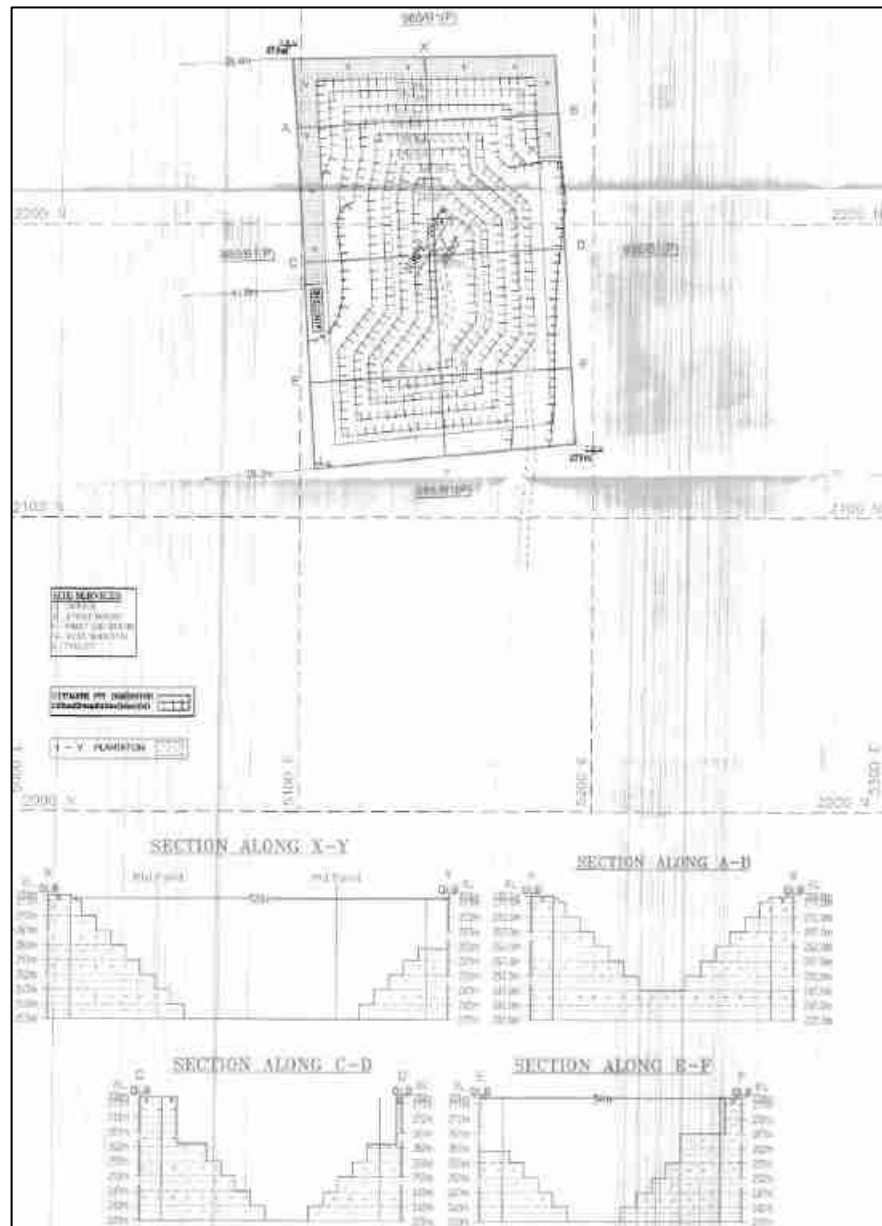
<b>Length (Max) (m)</b>	<b>Width (Max) (m)</b>	<b>Depth (Max)</b>
128	84	42m bgl

Source: Approved Mining Plan

FIGURE 2.10: CLOSURE PLAN AND SECTIONS – P1

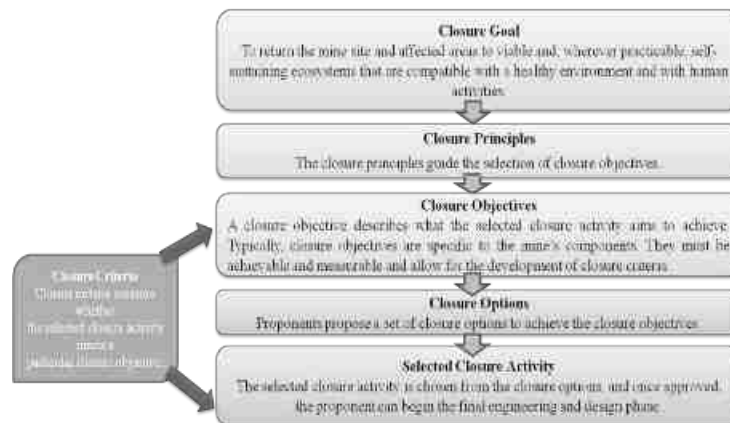


Source: Approved Mining Plan

**FIGURE 2.10A: CLOSURE PLAN AND SECTIONS – P2**

- At the end of life of mine, the excavated mine pit / void will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season.
- After mine closure the greenbelt developed along the safety barrier and top benches and temporary water reservoir will enhance the ecosystem
- Mine Closure is a process of returning a disturbed site to its natural state or which prepares it for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety.
- The principal closure objectives are for rehabilitated mines to be physically safe to humans and animals, geotechnically stable, geo-chemically non-polluting/ non-contaminating, and capable of sustaining an agreed post-mining land use.

## Closure Objectives –



- Access to be limited, for the safety of humans and wildlife.
- The open pit mine workings and pit boundary are physically and geo-technically stable.
- Water quality in flooded pits is safe for humans, aquatic life, and wildlife.
- Discharge of contaminated drainage has been minimized and controlled.
- Original or desired new surface drainage patterns have been established.
- For flooded pits, in-pit aquatic habitat has been established where practical and feasible.
- Emergency access and escape routes from flooded pits for humans and wildlife are in place.
- Dust levels are safe for people, vegetation, aquatic life, and wildlife.

## Closure Planning & Options Considerations in Mine Design –

- The closure of mine is well planned at the initial stage of planning & design consideration by the internal and external stake holders
- Construction of 2m height bund all along the mine pit boundary and ensure its stability all time & construction of garland drain along the natural slope to avoid sliding and collection of soil to the pit & surface runoff during rainfall
- After complete exploitation of mineral, the lowest bench foot wall side will be maintained as plain surface without any sump pits to avoid any accidents
- All the sharp edges will be dressed to smoother face before the closure of mine and ensure no loose debris on hanging wall side
- The project proponent as a part of social responsibilities assures to supply the stored mine pit water to the nearby villages after effective treatment process as per the standards of TNPCB & TWAD
- Native species will be planted in 3 row patterns on the boundary barriers and 1<sup>st</sup> bench, a full-time sentry will be appointed at the gate to prevent inherent entry of public & cattle.
- The access road to the quarry will be cut-off immediately after the closure
- The layout design shall be prepared and get approved from Department of Geology and Mining.
- The proponent is instructed to construct as per the layout approved
- Physical and chemical stability of structures left in place at the site, the natural rehabilitation of a biologically diverse, stable environment, the ultimate land use is optimized and is compatible with the surrounding area and the requirements of the local community, and taking the needs of the local community into account and minimizing the socio-economic impact of closure
- There will be a positive change in the environmental and ecology due to the mine closure

## 2.5 METHOD OF MINING

Open cast Mechanized Mining Method is proposed by formation of 5.0-meter height bench with a bench width not less than the bench height. Bench slope will be maintained as 60°.

The Rough Stone is a batholith formation and the splitting of rock mass of considerable volume from the parent rock mass will be carried out by deploying jackhammer drilling and Slurry Explosives will be used for blasting. Hydraulic Excavator attached with rock breaker/ bucket with tipper combination will be involved for the excavation/breaking of Rough stone after blasting. Hydraulic excavators attached with bucket unit will be deployed for loading the Rough Stone into the tippers and then the stone is transported from pithead to the nearby crushers.

It is recommended to obtain necessary statutory permission from the Department of Geology and Mining for Using Heavy Earth Moving Machineries, Blasting and appointment of Mines Manager etc.,

### 2.5.1 Drilling & Blasting Parameters – P1

Drilling will be carried out using Jack hammer and compressor, the depth of the hole will be maximum 1.5m. Drilling & Blasting will be carried out as per parameters given below: -

Spacing	–	1.2m
Burden	–	1.0m
Depth of hole	–	1.6 m
Charge per hole	–	0.5kg
Powder factor	–	5.0 tonnes/kg
Diameter of hole	–	32 mm
Peak production Capacity	=	133m <sup>3</sup> of Rough Stone per day
Spacing X Burden X Depth	=	1.2m X 1.0m X 1.6m = 1.92m <sup>3</sup>
	=	133m <sup>3</sup> X 2.6 (Bulk Density) = 345Ts per hole

Hence for the peak production of 133m<sup>3</sup> (345Ts) = 58 Nos of holes to be drilled per day

Explosives per hole = ½ kg hence 29 kg of Explosives will be utilized maximum considering the peak production

### Drilling & Blasting Parameters – P2

Drilling will be carried out using Jack hammer and compressor, the depth of the hole will be maximum 1.5m. Drilling & Blasting will be carried out as per parameters given below: -

Spacing	–	1.2m
Burden	–	1.0 m
Depth of hole	–	1.6m
Charge per hole	–	0.5kg
Powder factor	–	5.0 tonnes/kg
Diameter of hole	–	32 mm
Peak production Capacity	=	66m <sup>3</sup> of Rough Stone per day
Spacing X Burden X Depth	=	1.2m X 1.0m X 1.6m = 3.8m <sup>3</sup>
	=	66m <sup>3</sup> X 2.6 (Bulk Density) = 171Ts per hole

Hence for the peak production of 66m<sup>3</sup> (171Ts) = 29 Nos of holes to be drilled per day

Explosives per hole = ½ kg hence 15 kg of Explosives will be utilized maximum considering the peak production

### Type of Explosives to be used –

Slurry explosives (An explosive material containing substantial portions of a liquid, oxidizers, and fuel, plus a thickener), NONEL / Electric Detonator & Detonating Fuse.

### Storage of Explosives –

No proposal for storage of explosives within the project area, the project proponent will made agreement with authorized explosives agencies for carrying out blasting activities and competent person as per DGMS guidelines will be employed for safety and supervision of overall quarrying activities.

The explosives will be sourced from the blasting agency on daily basis and the blasting will be carried out under the supervision of competent qualified Blaster and it will be ensured that there shall be no balance of explosive stock; any balance stock will be taken back by the supplier.

### 2.5.2 Extent of Mechanization

**TABLE 2.8 PROPOSED MACHINERY DEPLOYMENT – P1**

S.NO.	TYPE	NOS	SIZE/CAPACITY	MOTIVE POWER
1	Jack hammers	6	1.2m to 2.0m	Compressed air
2	Compressor	2	400psi	Diesel Drive
3	Excavator with Bucket and Rock Breaker	2	300 HP	Diesel Drive
4	Tippers	3	20 Tonnes	Diesel Drive
5	Water Sprinkling Tanker	1	10000 litres	Diesel Drive

Source: Approved Mining Plan

**TABLE 2.8A PROPOSED MACHINERY DEPLOYMENT – P2**

S.NO.	TYPE	NOS	SIZE/CAPACITY	MOTIVE POWER
1	Jack hammers	3	1.2m to 2.0m	Compressed air
2	Compressor	1	400psi	Diesel Drive
3	Excavator with Bucket and Rock Breaker	1	300 HP	Diesel Drive
4	Tippers	2	20 Tonnes	Diesel Drive
5	Water Sprinkling Tanker	1	10000 litres	Diesel Drive

Source: Approved Mining Plan

## 2.6 GENERAL FEATURES

### 2.6.1 Existing Infrastructures

Infrastructures like Mine office, Temporary Rest shelters for workers, Latrine and Urinal Facilities will be constructed as per the Mine Rule after the grant of quarry lease in all the proposed quarries.

### 2.6.2 Drainage Pattern

There are no streams, canals or water bodies crossing within the project area. The drainage pattern of the area is dendritic – sub dendritic.

### 2.6.3 Traffic Density

The traffic survey conducted based on the transportation route of material, the Rough Stone is proposed to be transported mainly through

Traffic density measurements were performed at two locations

1. Karukkamapalayam Panchayat Road (Panchayat Road)
2. Thayampalayam to Uthiyur Road (Major District Road)

Traffic density measurement was made continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., Heavy motor vehicles, light motor vehicles and two/three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station during each shift- one person on either direction for counting the traffic. At the end of each hour, fresh counting and recording was undertaken.

**TABLE.2.9: TRAFFIC SURVEY LOCATIONS**

Station Code	Road Name	Distance and Direction	Type of Road
TS1	Karukkamapalayam Panchayat Road	570m - SW	Panchayat Road
TS2	Thayampalayam to Uthiyur Road (Major District) Road	1.3Km – NW	Major District Road

Source: On-site monitoring by GEMS FAE & TM

**TABLE 2.10: EXISTING TRAFFIC VOLUME**

Station code	HMV		LMV		2/3 Wheelers		Total PCU
	No	PCU	No	PCU	No	PCU	
TS1	68	204	30	30	66	33	267
TS2	90	270	60	60	150	75	405

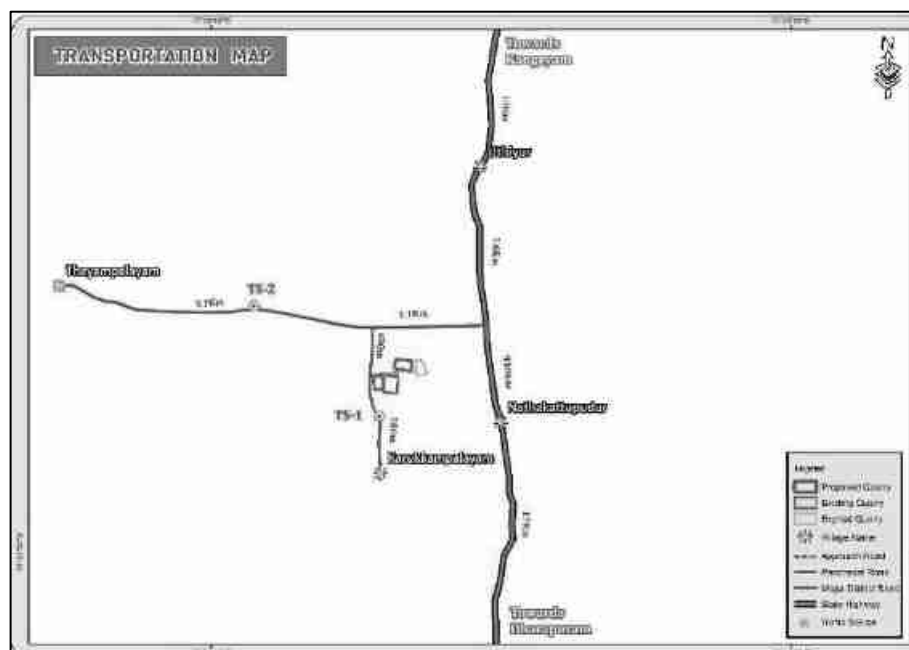
Source: On-site monitoring by GEMS FAE & TM

\* PCU conversion factor: HMV (Trucks and Bus) = 3, LMV (Car, Jeep and Auto) = 1 and 2/3 Wheelers = 0.5

**TABLE 2.11: ROUGH STONE & GRAVEL HOURLY TRANSPORTATION REQUIREMENT**

Transportation of Rough Stone & Gravel per day		
Capacity of trucks	No. of Trips per day	Volume in PCU
20 tonnes	22	66

**FIGURE.2.11: MINERAL TRANSPORTATION ROUTE MAP**





**Proposed Transportation Route:**

1. No Major Habitation, Schools in the proposed transportation route.

**TABLE 2.12: SUMMARY OF TRAFFIC VOLUME**

Route	Existing Traffic volume in PCU	Incremental traffic due to the project	Total traffic volume	Hourly Capacity in PCU as per IRC – 1960 guidelines
Karukkamapalayam Panchayat Road	267	66	333	900
Thayampalayam to Uthiyur Road (Major District) Road	405	66	471	1200

Source: On-site monitoring analysis summary by GEMS FAE & TM

- Due to these projects the existing traffic volume will not exceed
- As per the IRC 1960 this existing Panchayat Road can handle 900 PCU in hour and State Highway Road can handle 1500 PCU in hour hence there will not be any conjunction due to this proposed transportation.

**2.6.4 Mineral Beneficiation and Processing**

There is no proposal for the mineral processing or ore beneficiation in any of the proposed project.

**2.7 PROJECT REQUIREMENT****2.7.1 Water Source & Requirement**

Detail of water requirements in KLD as given below:

**TABLE 2.13: WATER REQUIREMENT FOR THE PROJECT – P1**

Purpose	Quantity	Source
Dust Suppression	03.KLD	From the existing pit or from the water vendors
Green Belt	1.90KLD	From the existing pit or from the water vendors
Sanitation & Drinking	0.7KLD	From the existing pit or from the water vendors.
Total	<b>2.0 KLD</b>	

Source: Prefeasibility report

**TABLE 2.13A: WATER REQUIREMENT FOR THE PROJECT – P2**

Purpose	Quantity	Source
Dust Suppression	0.5KLD	From the existing pit or from the water vendors
Green Belt	0.3KLD	From the existing pit or from the water vendors
Sanitation & Drinking	0.2KLD	From the existing pit or from the water vendors.
Total	<b>1.0 KLD</b>	

Source: Prefeasibility report

**2.7.2 Power and Other Infrastructure Requirement**

Power is not required for the mining operation; the mining operation will be carried out using Diesel Generator and Earth moving machineries using diesel. The quarrying activity is proposed during day time only (General Shift 8 AM – 5 PM, Lunch Break 1 PM – 2 PM). Electricity for use in office and other internal infrastructure will be obtained from TNEB by project proponent.

No workshops are proposed inside the project area hence there will not be any process effluent generation from the project area. Domestic effluent from the mine office will be discharged to septic tank and soak pit. There is no toxic

effluent expected to generate in the form of solid, liquid or gaseous form hence there is no requirement of waste treatment plant.

### 2.7.3 Fuel Requirement – P1

One Excavator will excavate 25m<sup>3</sup> of Broken up Rough Stone per hour and 60m<sup>3</sup> of Gravel per hour.

Peak production of Rough Stone = 133m<sup>3</sup>

Peak production of Gravel = 36m<sup>3</sup>

Type of machinery	Working hours	Average Diesel consumption/ Hour	Quantity of Diesel in Ltrs
Working hours of Excavator (Aprx)	133m <sup>3</sup> /25 m <sup>3</sup> = 6 Hrs (Rough stone)	18 Ltrs	108
	36/60m <sup>3</sup> = 1Hrs	18 Ltrs	18
Compressor	Working hours per day 3 Hrs	8 Ltrs	24
Tippers, Motor pumps to drain water	Occasionally		20
<b>Total Diesel Consumption</b>			<b>170</b>

The Maximum diesel consumption is around 170 Ltrs per day considering the peak production.

### Fuel Requirement – P2

One Excavator will excavate 25m<sup>3</sup> of Broken up Rough Stone per hour and 60m<sup>3</sup> of Gravel per hour.

Peak production of Rough Stone = 66m<sup>3</sup>

Peak production of Gravel = 14m<sup>3</sup>

Type of machinery	Working hours	Average Diesel consumption/ Hour	Quantity of Diesel in Ltrs
Working hours of Excavator (Aprx)	66m <sup>3</sup> /25 m <sup>3</sup> = 3 Hrs (Rough stone)	18 Ltrs	54
	14/60m <sup>3</sup> = 1Hrs	18 Ltrs	18
Compressor	Working hours per day 3 Hrs	8 Ltrs	24
Tippers, Motor pumps to drain water	Occasionally		20
<b>Total Diesel Consumption</b>			<b>116</b>

The Maximum diesel consumption is around 116 Ltrs per day considering the peak production

### 2.7.4 Project Cost

The Environmental Management plan has been prepared considering the mode of working, Safety of the employees and Monitoring periods the total cost of P1 – 49.81 Lakhs & P2 – 41.79 Lakhs

## 2.8 EMPLOYMENT REQUIREMENT:

The following manpower's are proposed in the mining plan to carry out the day-to-day quarrying activities, the same employment is maintaining aimed at the proposed production target and also to comply with the statutory provisions of the Metalliferous mine's regulations, 1961.

**TABLE 2.14: PROPOSED MANPOWER DEPLOYMENT – P1**

Designation	No of persons
Mines Manager/Mines Foreman	1
Mate/Blaster	1
Geologist	1
Jack hammer operator	12
Excavator	1
Truck & Water Sprinkler Driver	4
Labour & Helper	2
Cleaner & Co-operator	5
Security	1
<b>Total</b>	<b>28</b>

Source: Approved Mining Plan & Pre-Feasibility report.

**TABLE 2.14A: PROPOSED MANPOWER DEPLOYMENT – P2**

Designation	No of persons
Mines Manager/Mines Foreman	1
Mate/Blaster	1
Geologist	1
Jack hammer operator	6
Excavator	1
Truck & Water Sprinkler Driver	3
Labour & Helper	2
Cleaner & Co-operator	4
Security	1
<b>Total</b>	<b>20</b>

Source: Approved Mining Plan & Pre-Feasibility report.

## 2.9 PROJECT IMPLEMENTATION SCHEDULE

The mining operation will commence after the grant of Environmental Clearance, Consent to operate (CTO), Execution of Lease Deed and Obtaining permission from the DGMS (Notice of Opening).

**TABLE 2.15: EXPECTED TIME SCHEDULE**

Sl.No.	Particulars	Time Schedule (In Month)					Remarks if any
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	
1	Environmental Clearance						
2	Consent to Operate						
3	Execution of Lease deed						
4	Permission from DGMS						
Time line may vary; subjected to rules and regulations /& other unforeseen circumstances							

Source: Anticipated based on Timelines framed in EIA Notification & CPCB Guidelines.

### 3. DESCRIPTION OF ENVIRONMENT

#### 3.0 GENERAL

The baseline environment quality represents the background environmental scenario of various environmental components such as Land, Water, Air, Noise, Biological and Socio-economic status of the study area. Field monitoring studies to evaluate the base line status of the project site were carried out covering March to May 2024 with CPCB guidelines for the following attributes –

- Land
- Water
- Air
- Noise
- Biological
- Socio-economic status

Environmental data has been collected with reference to cluster quarries by EHS 360 labs Pvt Ltd– An accredited by ISO/IEC 17025:2017 (NABL).

#### Study Area

An area of 10 km radius (aerial distance) from the periphery of the cluster is considered for EIA study. The study area has been divided into two zones viz **core zone** and **buffer zone**.

- Core zone is considered as cluster area
- Buffer zone taken as 10km radius from the periphery of the Cluster. Both Core zone and Buffer zone is taken as the study area.

#### Study Period

The baseline study was conducted during the Winter season i.e., March to May 2024.

#### Study Methodology

- The project area was surveyed in detail with the help of Total Station Survey instruments and pillars were marked. The boundary coordinates were superimposed on the satellite imagery to understand the relief of the area, besides Land use pattern of the area was studied through the Bhuvan (ISRO)
- Soil samples were collected and analysed for relevant physio-chemical characteristics in order to assess the impact due to mining activities and to recommend saplings for Greenbelt development.
- Ground water samples were collected from the existing bore wells, Surface water was collected from water bodies in the buffer zone and analysed as per CPCB Guidelines.
- An onsite meteorological station was setup in cluster area, to collect data about wind speed, wind direction, temperature, relative humidity, rainfall and general weather conditions were recorded throughout the study period.
- Air quality Data's were collected by installation of Respiratory Dust Samplers (RDS) for Fugitive dust, PM<sub>10</sub> and SO<sub>2</sub>, NO<sub>x</sub> with gaseous attachments & Fine Dust Samplers (FDS) for PM<sub>2.5</sub> and other parameters as per NAAQ norms and analysed for primary air pollutants to work out the existing status of air quality.
- The Noise level measurements were also made at various locations in different intervals of time with the help of sound level meter to establish the baseline noise levels in the impact zone.
- Baseline biological studies were carried out to assess the ecology of the study area to study the existing flora and fauna pattern of the area.

- Socio-Economic survey was conducted at village and household level in the study area to understand the present socio-economic conditions and assess the extent of impact due to the proposed mining project. The sampling methodologies for the various environmental parameters required for the study, frequency of sampling, method of samples analysis, etc., are given below Table 3.1.

**TABLE 3.1: MONITORING ATTRIBUTES AND FREQUENCY OF MONITORING**

Attribute	Parameters	Frequency of Monitoring	No. of Locations	Protocol
Land-use Land cover	Land-use Pattern within 10 km radius of the study area	Data from census handbook 2011 and from the satellite imagery	Study Area	Satellite Imagery Primary Survey
*Soil	Physio-Chemical Characteristics	Once during the study period	6 (2 core & 4 buffer zone)	IS 2720 Agriculture Handbook - Indian Council of Agriculture Research, New Delhi
*Water Quality	Physical, Chemical and Bacteriological Parameters	Once during the study period	6 (1 surface water & 5 ground water)	IS 10500& CPCB Standards
Meteorology	Wind Speed Wind Direction Temperature Cloud cover Dry bulb temperature Rainfall	1 Hourly Continuous Mechanical/Auto matic Weather Station	1	Site specific primary data& Secondary Data from IMD Station
*Ambient Air Quality	PM10 PM2.5 SO2 NOX Fugitive Dust	24 hourly twice a week (March to May 2024)	7 (2 core & 5 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient Noise	Hourly observation for 24 Hours per location	7 (2 core & 5 buffer zone)	IS 9989 As per CPCB Guidelines
Ecology	Existing Flora and Fauna	Through field visit during the study period	Study Area	Primary Survey by Quadrate & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio–Economic Characteristics, Population Statistics and Existing Infrastructure in the study area	Site Visit & Census Handbook, 2011	Study Area	Primary Survey, census handbook & need based assessments.

Source: On-site monitoring/sampling by EHS 360 labs Pvt Ltd in association with GEMS

\* All monitoring and testing have been carried out as per the Guidelines of CPCB and MoEF & CC.

### 3.1 LAND ENVIRONMENT

The main objective of this section is to provide a baseline status of the study area covering 10km radius around the proposed mine site so that temporal changes due to the mining activities on the surroundings can be assessed in future.

#### 3.1.1 Land Use/ Land Cover

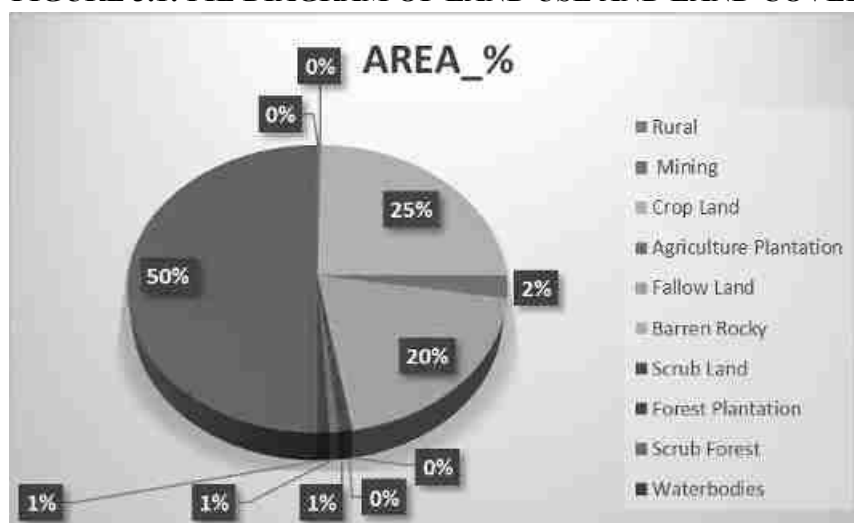
A visual interpretation technique has been adopted for land use classification based on the keys suggested in the chapter – V of the guidelines issued by NNRMS Bangalore & Level III classification with 1:50,000 scale for the preparation of land use mapping. Land use pattern of the area was studied through LISS III imagery of Bhuvan (ISRO). The 10 km radius map of study area was taken for analysis of Land use cover.

**TABLE 3.2: LAND USE / LAND COVER TABLE 10 Km RADIUS**

S.No	CLASSIFICATION	AREA_HA	AREA_%
<b>BUILTUP</b>			
1	Rural	172.12	0.53
2	Mining	57.53	0.18
<b>AGRICULTURAL LAND</b>			
3	Crop Land	16115.85	49.38
4	Agriculture Plantation	1642.17	5.03
5	Fallow Land	12815.58	39.27
<b>BARREN/WASTE LANDS</b>			
6	Barren Rocky	71.68	0.22
7	Scrub Land	304.48	0.93
<b>FOREST</b>			
8	Forest Plantation	363.67	1.11
9	Scrub Forest	490.56	1.50
<b>WETLANDS/ WATER BODIES</b>			
10	Waterbodies	602.24	1.85
<b>TOTAL</b>		32635.89	100.00

Source: Survey of India Toposheet and Landsat Satellite Imagery

**FIGURE 3.1: PIE DIAGRAM OF LAND USE AND LAND COVER**



From the above table, pie diagram and land use map it is inferred that the majority of the land in the study area is Agriculture and fallow land (includes crop land) 93.68% followed by Built-up Lands – 0.71%, Scrub land – 1.50%, and Water bodies 1.85%.

The total mining area within the study area is 57.53 ha i.e., 0.18%. The cluster area of 5.28.41 ha contributes about 0.18 % of the total mining area within the study area. This small percentage of Mining Activities shall not have any significant impact on the environment.

### **3.1.2 Topography**

The project area is almost plain terrain having gentle slope towards Eastern side. The altitude of the area is 295m AMSL. The area is covered by 2m thickness of gravel followed by massive charnockite which is clearly inferred from the nearby existing quarry.

### **3.1.3 Drainage Pattern of the Area**

The drainage pattern of the area is dendritic – sub dendritic. Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin. They are governed by the topography of the land, whether a particular region is dominated by hard or soft rocks, and the gradient of the land. There are no streams, canals or water bodies crossing within the project area.

### **3.1.4 Seismic Sensitivity**

The proposed project site falls in the seismic Zone II, low damage risk zone as per BMTPC, Vulnerability Atlas of Seismic zone of India IS: 1893 – 2002. The project area falls in the hard rock terrain on the peninsular shield of south India which is highly stable.

### **3.1.5 Environmental Features in the Study Area**

There is no Wildlife Sanctuaries, National Park and Archaeological monuments within project area. No Protected and Reserved Forest area is involved in the project area. Therefore, there will be no need to acquisition/diversion of forest land. The details related to the environment sensitivity around the proposed mine lease area i.e. 10 km radius, are given in the below Table 3.3.

FIGURE 3.2: PHYSIOGRAPHIC MAP 10KM RADIUS

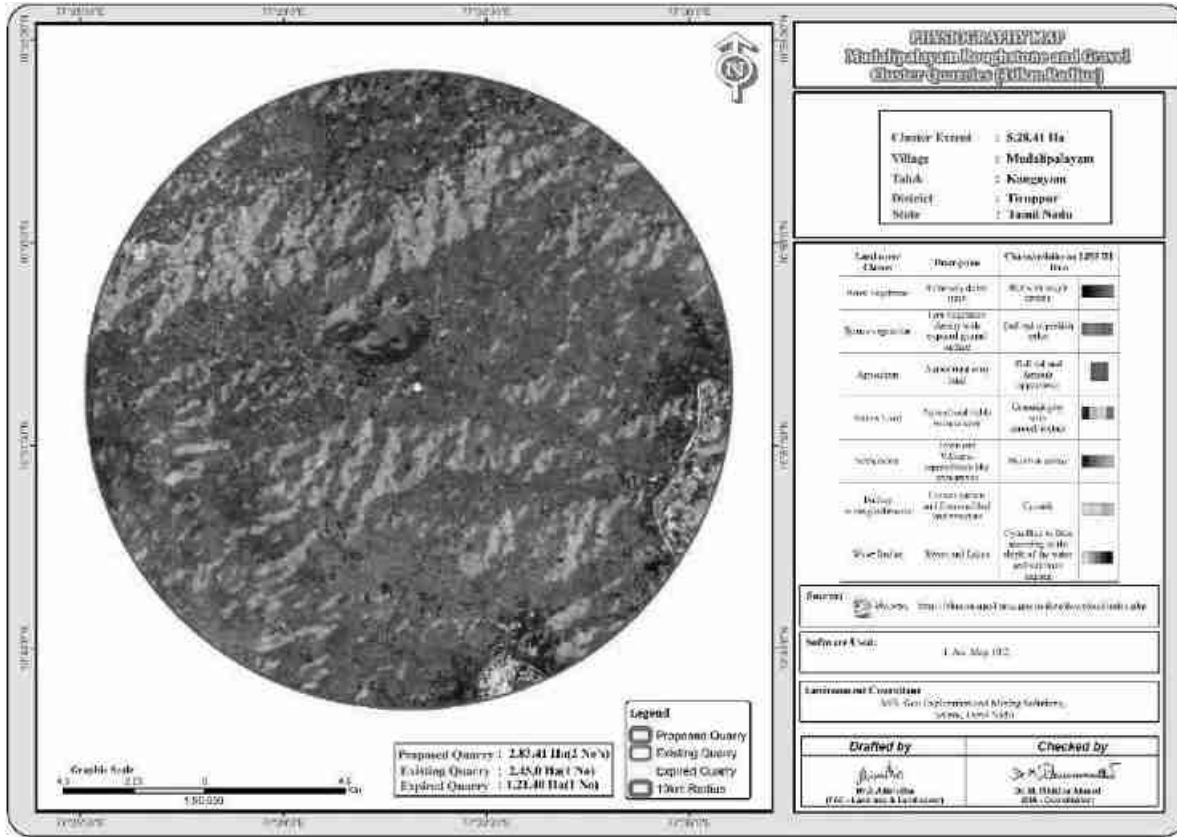
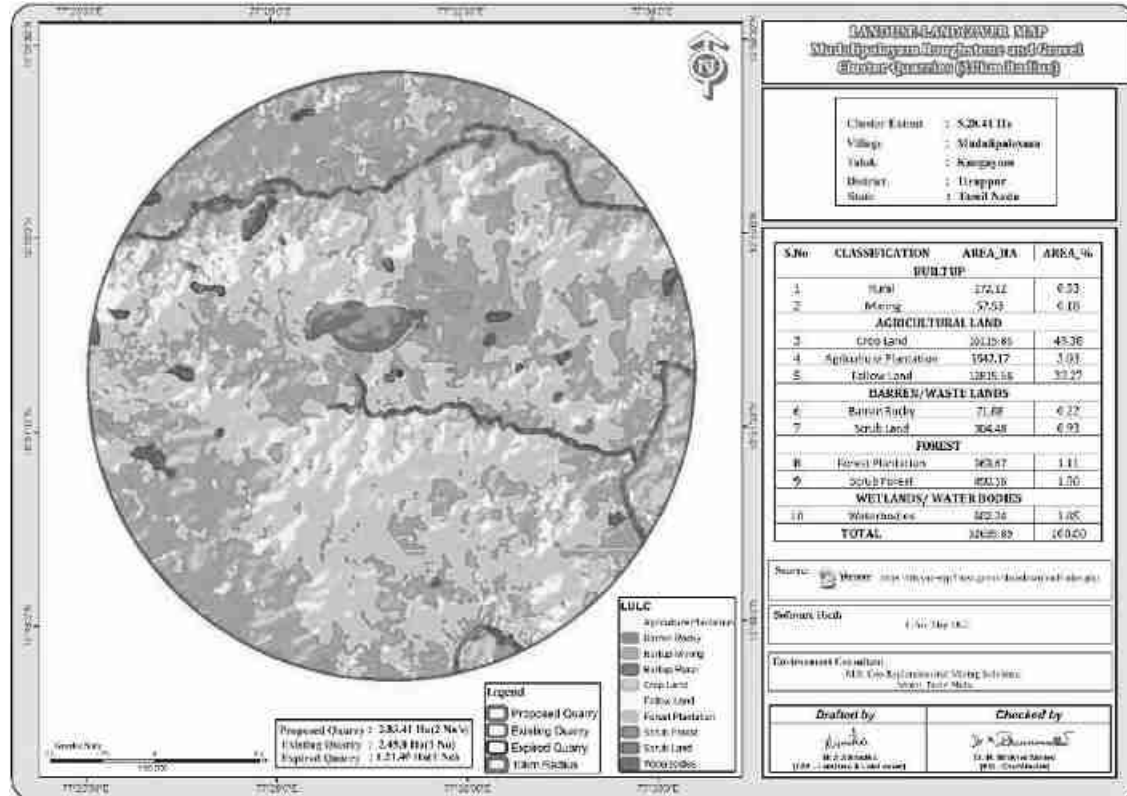


FIGURE 3.3: LAND USE LAND COVER MAP 10KM RADIUS





**TABLE 3.3: DETAILS OF ENVIRONMENT SENSITIVITY AROUND THE CLUSTER**

Sl.No	Sensitive Ecological Features	Name	Arial Distance in km from Cluster
1	National Park / Wild life Sanctuaries	Vellode Bird Sanctuary	43 Km – North East
2	Reserve Forest	Uthiyur R.F	705.48 m - North (Source - TNGIS)
3	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10Km Radius
4	Critically Polluted Areas	None	Nil within 10km Radius
5	Mangroves	None	Nil within 10km Radius
6	Mountains/Hills	None	Nil within 10km Radius
7	Notified Archaeological Sites	None	Nil within 10km Radius
8	Industries/ Thermal Power Plants	None	Nil within 10km Radius
9	Defence Installation	None	Nil within 10km Radius

Source: Survey of India Toposheet

**TABLE 3.4: NEARBY WATER BODIES FROM THE PROPOSED PROJECT SITE – P1**

Sl.No	NAME	DISTANCE & DIRECTION
1	Varatukarai Odai	1.06Km SE
2	Odai	6.1Km N
3	Amaravathi River	8.1Km SE

Source: Village Cadastral Map and Field Survey

**TABLE 3.4A: NEARBY WATER BODIES FROM THE PROPOSED PROJECT SITE – P2**

Sl.No	NAME	DISTANCE & DIRECTION
1	Varatukarai Odai	1.07Km SE
2	Odai	6.2Km N
3	Amaravathi River	8.5Km SE

Source: Village Cadastral Map and Field Survey

### 3.1.6 Soil Environment

Soil quality of the study area is one of the important components of the land environment. The composite soil samples were collected from the study area and analysed for different parameters. The locations of the monitoring sites are detailed in Table 3.5 and Figure 3.5.

#### The objective of the soil sampling is -

To determine the baseline soil characteristics of the study area; study the impact of proposed activity on soil characteristics and study the impact on soil more importantly agriculture production point of view.

**TABLE 3.5: SOIL SAMPLING LOCATIONS**

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	S1	Core Zone	Project Area	10°52'27.44"N 77°31'5.86"E
2	S2	Core Zone	Project Area	10°52'31.51"N 77°31'11.58"E
3	S3	Mudhalipalayam	3.2km NE	10°53'1.74"N 77°33'3.45"E
4	S4	Idayankinaru	5.5km SW	10°50'39.93"N 77°28'30.76"E
5	S5	Sengondampalayam	4.5km North	10°55'0.39"N 77°30'59.88"E
6	S6	Sirukinar	5.0km SE	10°50'15.21"N 77°32'54.80"E

Source: On-site monitoring/sampling by EHS 360 labs Pvt Ltd in association with GEMS.

#### Methodology –

For studying soil quality, sampling locations were selected to assess the existing soil conditions in and around the project site representing various land use conditions. The samples were collected by auger boring into the soil up to 90-cm depth. Six (6) locations were selected for soil sampling on the basis of soil types, vegetative cover, industrial & residential activities including infrastructure facilities, which would accord an overall idea of the soil characteristics. The samples were analysed for physical and chemical characteristics. The samples were sent to laboratory for analysis. The samples were filled in Polythene bags, coded and sent to laboratory for analysis and the details of methodology in respect are given in below Table 3.6.

**TABLE 3.6: METHODOLOGY OF SAMPLING COLLECTION**

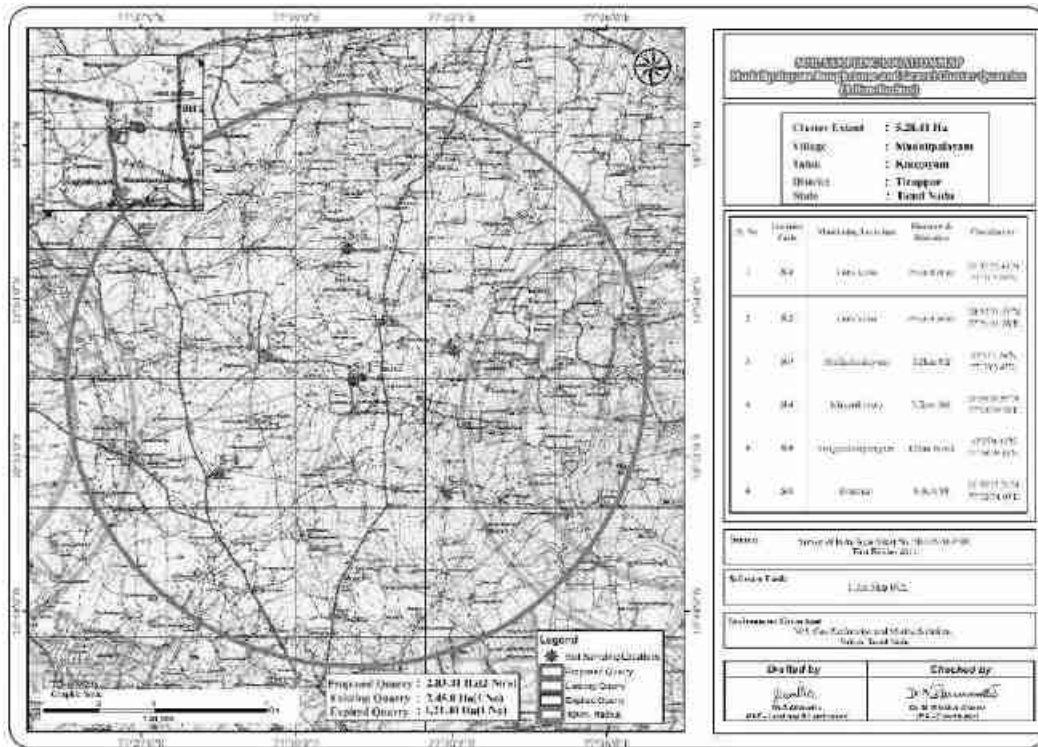
Particulars	Details
Frequency	One grab sample from each station-once during the study period
Methodology	Composite grab samples of the topsoil were collected from 3 depths, and mixed to provide a representative sample for analysis. They were stored in airtight Polythene bags and analysed at the laboratory.

Source: On-site monitoring/sampling by EHS 360 labs Pvt Ltd in association with GEMS

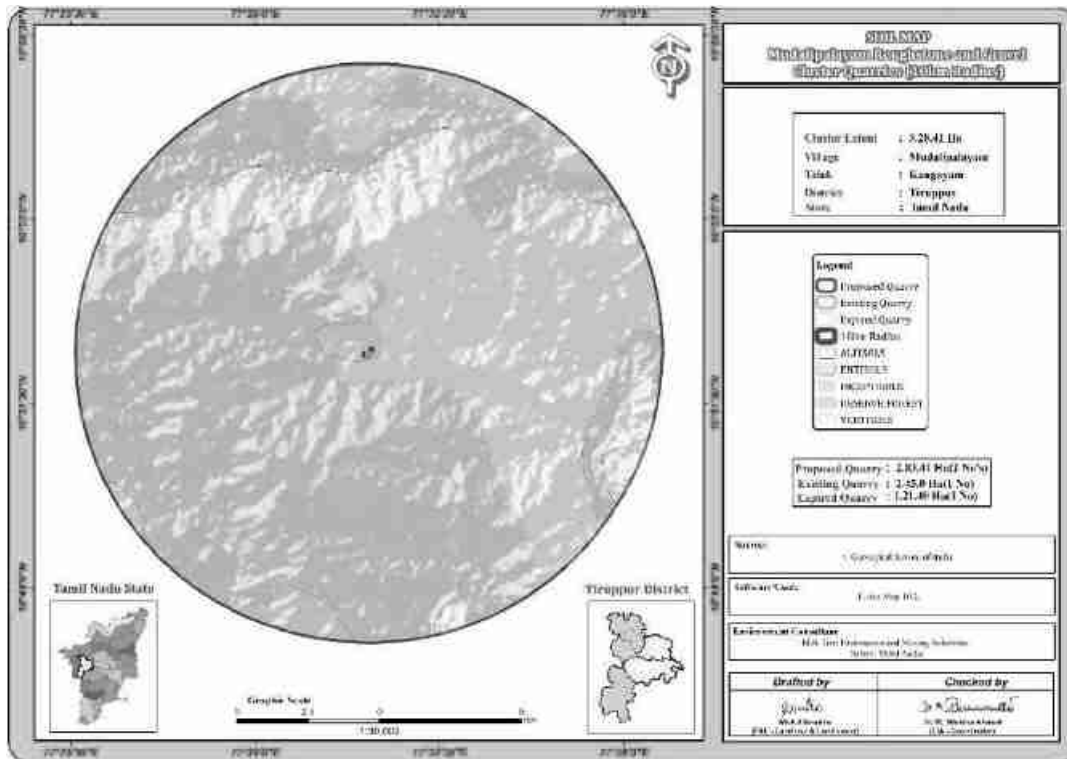
#### Soil Testing Result –

The samples were analysed as per the standard methods prescribed in “Soil Chemical Analysis (M.L. Jackson, 1967) & Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India”. The important properties analysed for soil are bulk density, porosity, infiltration rate, pH and Organic matter, kjeldahi Nitrogen, Phosphorous and Potassium. The standard classifications of soil are presented below in Figure 3.4 and the physico-chemical characteristics of the soil & Test Results in Table 3.7.

**FIGURE 3.5: SOIL SAMPLING LOCATIONS AROUND 10 KM RADIUS**



**FIGURE 3.6: SOIL MAP**



**TABLE 3.7: SOIL QUALITY OF THE STUDY AREA**

S. No	Test Parameters	Protocols	S-1 Core Zone	S-2 Core Zone	S-3 Mudhalipalayam	S-4 Idayankinaru	S-5 Sengondampalayam	S-6 Sirukinar
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	6.8	7.05	6.78	6.97	7.56	7.65
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	402 µmhos/cm	310 µmhos/cm	376 µmhos/cm	285 µmhos/cm	336.8 µmhos/cm	415µmhos/cm
03	<b>Texture:</b>							
	Clay	Gravimetric method	35.6 %	34.3%	36.2 %	36.5%	34.4 %	36.7%
	Sand		27.6 %	28.8 %	28.9 %	24.6 %	28.7 %	25.5 %
	Silt		36.8%	36.9%	34.9%	38.9 %	36.9 %	37.8 %
04	Water Holding Capacity	By Gravimetric method	46.8 %	40.9 %	43.7 %	42.5 %	46.9 %	44.8 %
05	Bulk Density	By Cylindrical method	1.08 g/cm <sup>3</sup>	0.87 g/cm <sup>3</sup>	0.91 g/cm <sup>3</sup>	0.81 g/cm <sup>3</sup>	1.09g/cm <sup>3</sup>	1.03 g/cm <sup>3</sup>
06	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	102.5 mg/kg	121.4 mg/kg	62.1 mg/kg	66.7mg/kg	55.6mg/kg	49.6 mg/kg
07	Magnesium as Mg		38 mg/kg	51.9 mg/kg	32.6 mg/kg	30.2 mg/kg	36 mg/kg	23.7 mg/kg
08	Manganese as Mn		18.9mg/kg	18.4 mg/kg	22.5 mg/kg	27.6 mg/kg	18.5 mg/kg	27 mg/kg
09	Zinc as Zn		1.02mg/kg	2.01 mg/kg	1.85 mg/kg	1.28 mg/kg	1.92 mg/kg	1.28 mg/kg
10	Boron as B		1.2 mg/kg	1.07 mg/kg	2.08 mg/kg	1.42 mg/kg	1.21mg/kg	3.60 mg/kg
11	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	82.7 mg/kg	68 mg/kg	41.5 mg/kg	56.5 mg/kg	60.4mg/kg	41.6 mg/kg
12	Total Soluble Sulphate as SO <sub>4</sub>	IS 2720 Part 27 : 1977 (Reaff:2015)	0.016 %	0.0011 %	0.0018 %	0.0017 %	0.0014 %	0.0018 %
13	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	31.4 mg/kg	32.5mg/kg	28.7 mg/kg	38 mg/kg	37 mg/kg	34.8 mg/kg
14	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	2.15mg/kg	1.6 mg/kg	1.09 mg/kg	1.15 mg/kg	2.18 mg/kg	2.84 mg/kg
15	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	405 mg/kg	320.8 mg/kg	387.5 mg/kg	326.8 mg/kg	349.5 mg/kg	415.4 mg/kg
16	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)					
17	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)					
18	Copper as Cu		BDL (DL : 1.0 mg/kg)					
19	Lead as Pb		1.05 mg/kg	0.70	1.17	1.09	1.08 mg/kg	0.89 mg/kg
20	Iron as Fe		3.47 mg/kg	3.97 mg/kg	1.69 mg/kg	3.68 mg/kg	3.68 mg/kg	2.67 mg/kg
21	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.46 %	1.12 %	1.96 %	1.84 %	1.99 %	2.49 %
22	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	0.85%	0.65 %	1.14 %	1.07%	1.16 %	1.45 %
23	Cation Exchange Capacity	USEPA 9080 – 1986	41.4 meq/100g of soil	39.6 meq/100g of soil	38.7 meq/100g of soil	40.8 meq/100g of soil	41.9meq/100g of soil	42.7 meq/100g of soil

Source: Sampling Results by EHS 360 labs Pvt Ltd.

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## Interpretation & Conclusion

### Physical Characteristics –

The physical properties of the soil samples were examined for texture, bulk density, porosity and water holding capacity. The soil texture found in the study area is Clay (34.3 % to 36.7 %) to Sandy Loam Soil and Bulk Density of Soils in the study area varied between 0.81 – 1.09 g/cc. The Water Holding Capacity and Porosity of the soil samples is found to be medium i.e., ranging from 40.9 – 46.9 %.

### Chemical Characteristics –

- The nature of soil is slightly alkaline to strongly alkaline with pH range 6.78 to 7.65
- The available Nitrogen content range between 320.8 to 415.4 mg/kg
- The available Phosphorus content range between 1.09 to 2.84 mg/kg
- The available Potassium range between 28.7 mg/kg to 38 mg/kg

### Observation:

The pH of the Soil indicates that the soil is Neutral and arid region and ideal for plant growth.

## 3.2 WATER ENVIRONMENT

The water resources, both surface and groundwater play a significant role in the development of the area. The purpose of this study is to assess the water quality characteristics for critical parameters and evaluate the impacts on agricultural productivity, domestic community usage, recreational resources and aesthetics in the vicinity. The water samples were collected and transported as per the norms in pre-treated sampling cans to laboratory for analysis.

### 3.2.1 Surface Water Resources:

Amaravathi River is the major surface water body in the study area and the rainfall over the area is moderate, the rainwater storage in open wells and trenches are in practice over the area and the stored water acts as source of drinking water for few months after rainy season.

### 3.2.2 Ground Water Resources:

Groundwater occurs in all the crystalline formations of oldest Achaeans and Recent Alluvium. The occurrence and behaviour of groundwater are controlled by rainfall, topography, geomorphology, geology, structures etc., The weathering is controlled by the intensity of weathering and fracturing. Dug wells as wells as bore wells are more common ground water abstraction structures in the area. The diameter of the dug well is in the range of 7 to 10 m and depth of dug wells range from 7.2 to 13 m bgl. The dug wells yield up to 1 lps in summer months and few wells remains dry. The yield is adequate for irrigation for one or two crops in monsoon period.

### 3.2.3 Methodology

Reconnaissance survey was undertaken and monitoring locations were finalized based on;

- Drainage pattern;
- Location of Residential areas representing different activities/likely impact areas; and
- Likely areas, which can represent baseline conditions

One (1) surface water and Five (5) ground water samples were collected from the study area and were analysed for physio-chemical, heavy metals and bacteriological parameters in order to assess the effect of mining and other activities on surface and ground water. The samples were analysed as per the procedures specified by CPCB, IS-

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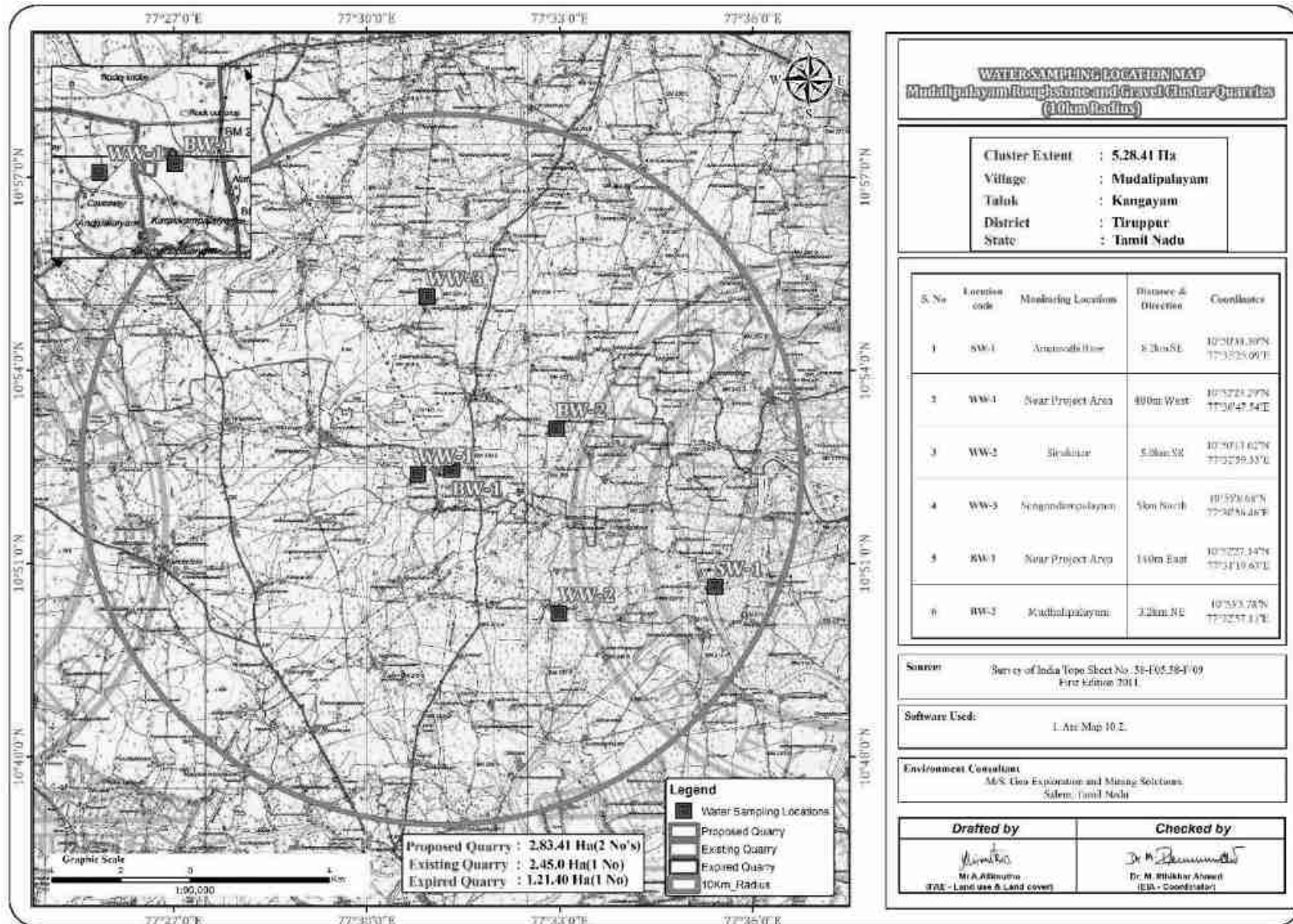
10500:2012 and 'Standard methods for the Examination of Water and Wastewater' published by American Public Health Association (APHA). The water sampling locations are given in Table 3.8 and shown as Figure 3.5.

**TABLE 3.8: WATER SAMPLING LOCATIONS**

S.NO	CODE	LOCATIONS	DISTANCE & DIRECTION	CO-ORDINATES
<b>SURFACE WATER</b>				
1	SW-1	Amaravathi River	8.2km SE	10°50'38.30"N 77°35'25.09"E
<b>GROUND WATER</b>				
2	WW-1	Near Project Area	480m West	10°52'23.29"N 77°30'47.54"E
3	WW-2	Sirukinar	5.0km SE	10°50'13.62"N 77°32'59.33"E
4	WW-3	Sengondampalayam	5km North	10°55'8.68"N 77°30'56.46"E
5	BW-1	Near Project Area	140m East	10°52'27.14"N 77°31'19.63"E
6	BW-2	Mudhalipalayam	3.2km NE	10°53'5.78"N 77°32'57.11"E

Source: On-site monitoring/sampling by EHS 360 labs Pvt Ltd in association with GEMS

**FIGURE 3.8: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS**



**TABLE 3.9: GROUND WATER SAMPLING RESULTS**

S.NO	Parameter	WW-1 Near Project Area	WW-2 Sirukinar	WW-3 Sengondampalayam	BW-1 Near Project Area	BW-2 Mudhalipalayam
1	Color	5 Hazen	5 Hazen	5 Hazen	5 Hazen	5 Hazen
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	pH@ 25oC	7.16	7.21	7.51	7.64	7.62
4	Electrical Conductivity @ 25oC	1178 µmhos/cm	1355 µmhos/cm	1175 µmhos/cm	1279 µmhos/cm	1314 µmhos/cm
5	Turbidity	<1.0 NTU	<1 NTU	<1 NTU	<1.0 NTU	<1 NTU
6	Total Dissolved Solids	695 mg/l	799 mg/l	693 mg/l	754 mg/l	775 mg/l
7	Total Hardness as CaCO3	448mg/l	404 mg/l	368 mg/l	312 mg/l	324 mg/l
8	Calcium as Ca	120 mg/l	109 mg/l	99.3 mg/l	65.9 mg/l	92.9 mg/l
9	Magnesium as Mg	36.9 mg/l	32.1 mg/l	29.1 mg/l	35.9 mg/l	22.3 mg/l
10	Total Alkalinity	258.5 mg/l	320.6 mg/l	265.5 mg/l	273.3 mg/l	245.2 mg/l
11	Chloride as Cl-	168.6 mg/l	475.8 mg/l	382.5 mg/l	223.5 mg/l	253.7 mg/l
12	Sulphate as SO4-	60.2 mg/l	71.2 mg/l	68.5 mg/l	45.8 mg/l	51.8 mg/l
13	Iron as Fe	0.28 mg/l	0.31 mg/l	0.29 mg/l	0.52 mg/l	0.49 mg/l
14	Free Residual Chlorine	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)
15	Fluoride as F	0.28 mg/l	0.27 mg/l	0.34 mg/l	0.26 mg/l	0.27 mg/l
16	Nitrates as NO3	5.2 mg/l	4.7 mg/l	4.9 mg/l	3.2 mg/l	4.6 mg/l
17	Copper as Cu	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)
21	Selenium as Se	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
23	Lead as Pb	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
25	Total Chromium	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)
26	Boron as B	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)
28	Phenolic Compunds as C6H5OH	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents as	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
30	Cynaide as CN	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
31	Total Coliform	Absent	Absent	Absent	Present	Present
32	E-Coli	Absent	Absent	Absent	Absent	Absent
33	Barium as Ba	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)
34	Ammonia (as Total	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
35	Sulphide as H2S	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
36	Molybdenum as Mo	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
37	Total Arsenic as As	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
38	Total Suspended Solids	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)

\* IS: 10500:2012-Drinking Water Standards; # within the permissible limit as per the WHO Standard. The water can be used for drinking purpose in the absence of alternate sources. Note: SW- Surface water, GW – Ground water



**TABLE 3.10: SURFACE WATER SAMPLING RESULTS**

Sl. No.	Parameter	Unit	RESULT	CPCB Designated Best Use
			SWI- Tank Near Perunkulam	
1	Colour	Hazen	12	300
2	Odour	-	Agreeable	Not specified
3	pH@ 25°C	-	8.12	6.5 – 8.5
4	Electrical Conductivity @ 25°C	µs/cm	1487	
5	Turbidity	NTU	9.4	Not specified
6	Total Dissolved Solids	mg /l	877	1500
7	Total Hardness as CaCO <sub>3</sub>	mg/l	496	Not specified
8	Calcium as Ca	mg/l	129.8	Not specified
9	Magnesium as Mg	mg/l	41.8	Not specified
10	Total Alkalinity as CaCO <sub>3</sub>	mg/l	425.5	Not specified
11	Chloride as Cl <sup>-</sup>	mg/l	501.6	600
12	Sulphate as SO <sub>4</sub> <sup>-</sup>	mg/l	98.1	400
13	Iron as Fe	mg/l	0.68	50
14	Free Residual Chlorine	mg/l	BDL (DL:0.1 mg/l)	400
15	Fluoride as F	mg/l	0.37	1.5
16	Nitrates as NO <sub>3</sub>	mg/l	7.8	50
17	Copper as Cu	mg/l	BDL (DL:0.01)	1.5
18	Manganese as Mn	mg/l	BDL (DL:0.02)	Not specified
19	Mercury as Hg	mg/l	BDL (DL:0.0005)	Not specified
20	Cadmium as Cd	mg/l	BDL (DL:0.001)	0.01
21	Selenium as Se	mg/l	BDL (DL:0.005)	Not specified
22	Aluminium as Al	mg/l	BDL (DL:0.005)	Not specified
23	Lead as Pb	mg/l	BDL (DL:0.005)	0.1
24	Zinc as Zn	mg/l	BDL(DL : 0.05)	15
25	Total Chromium	mg/l	BDL(DL : 0.02)	0.05
26	Boron as B	mg/l	BDL(DL : 0.05)	Not specified
27	Mineral Oil	mg/l	BDL(DL : 0.01)	Not specified
28	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/l	BDL (DL:0.0005)	0.005
29	Anionic Detergents as MBAS	mg/l	BDL (DL:0.01)	Not specified
30	Cyanide as CN	mg/l	BDL (DL:0.01)	0.05
31	Biological Oxygen Demand, 3 days @ 27°C		11.0	3
32	Chemical Oxygen Demand		30	Not specified
33	Dissolved Oxygen		4.8	4
34	Total Coliform	MPN/ 100ml	300 MPN/100ml	5000
35	E-Coli		40MPN/100ml	Not specified
36	Barium as Ba	mg/l	BDL (DL:0.05)	300
37	Ammonia (as Total Ammonia-N)	mg/l	BDL(DL:1.0)	Not specified
38	Sulphide as H <sub>2</sub> S	mg/l	BDL (DL:0.01)	Not specified
39	Molybdenum as Mo	mg/l	BDL (DL:0.02)	Not specified
40	Total Arsenic as As	mg/l	BDL (DL:0.005)	0.2
41	Total Suspended Solids	mg/l	2.0	-

**Note :** APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number.

### 3.2.4 Interpretation & Conclusion

#### Surface Water

The pH varied from 8.51 to 8.71 while turbidity found within the standards (Optimal pH range for sustainable aquatic life is 6.5 to 8.5 pH).

#### Total Dissolved Solids:

Total Dissolved Solids varied from 1342 to 1397mg/l, the TDS mainly composed of carbonates, bicarbonates, Chlorides, phosphates and nitrates of calcium, magnesium, sodium and other organic matter.

#### Other parameters:

Chloride content is 113.8 to 139.5mg/l and sulphates varied from 53 to 77.6 mg/l.

#### Ground Water

The pH of the water samples collected ranged from 7.24 to 7.80 and within the acceptable limit of 6.5 to 8.5. pH, Sulphates and Chlorides of water samples from all the sources are within the limits as per the Standard. On Turbidity, the water samples meet the requirement. Total Dissolved Solids were found in the range of 826 to 1135mg/l in all samples. Total hardness varied between 356 to 452mg/l for all samples.

On Microbiological parameters, the water samples from all the locations meet the requirement. The parameters thus analysed were compared with IS 10500:2012 and are well within the prescribed limits.

### 3.2.5 Hydrology and Hydrogeological studies

The district is underlain by hard rock formation fissured and fractured crystalline rocks constitute the important aquifer systems in the district. Geophysical prospecting was carried out in that area by SSRMP-80 Instrument by qualified Geo physicist with the help of IGIS software and it was inferred that the low resistance encountered at the depth between 62m bgl. The maximum depth proposed out of proposed projects is 42m (2m Gravel + 40m Rough stone) below ground level.

#### Ground water levels and Flow Direction based on the Bore well and open well Data's

In general the ground water movement is based on the gradient i.e., water moves from the highest static ground water elevation to lowest static ground water elevation point. The ground water movement is important aspect to locating the recharge and discharge areas. Therefore the data has been collected in the study area. Water level measured in the seven open well and six borewells.

The average water level in the open well is varies from = 11m to 12.7m bgl

The water level in the bore well is varies from = 56 to 57.7m bgl

Based on the water level contour map of the open well and bore well the water flow direction in the particular region is towards North side.

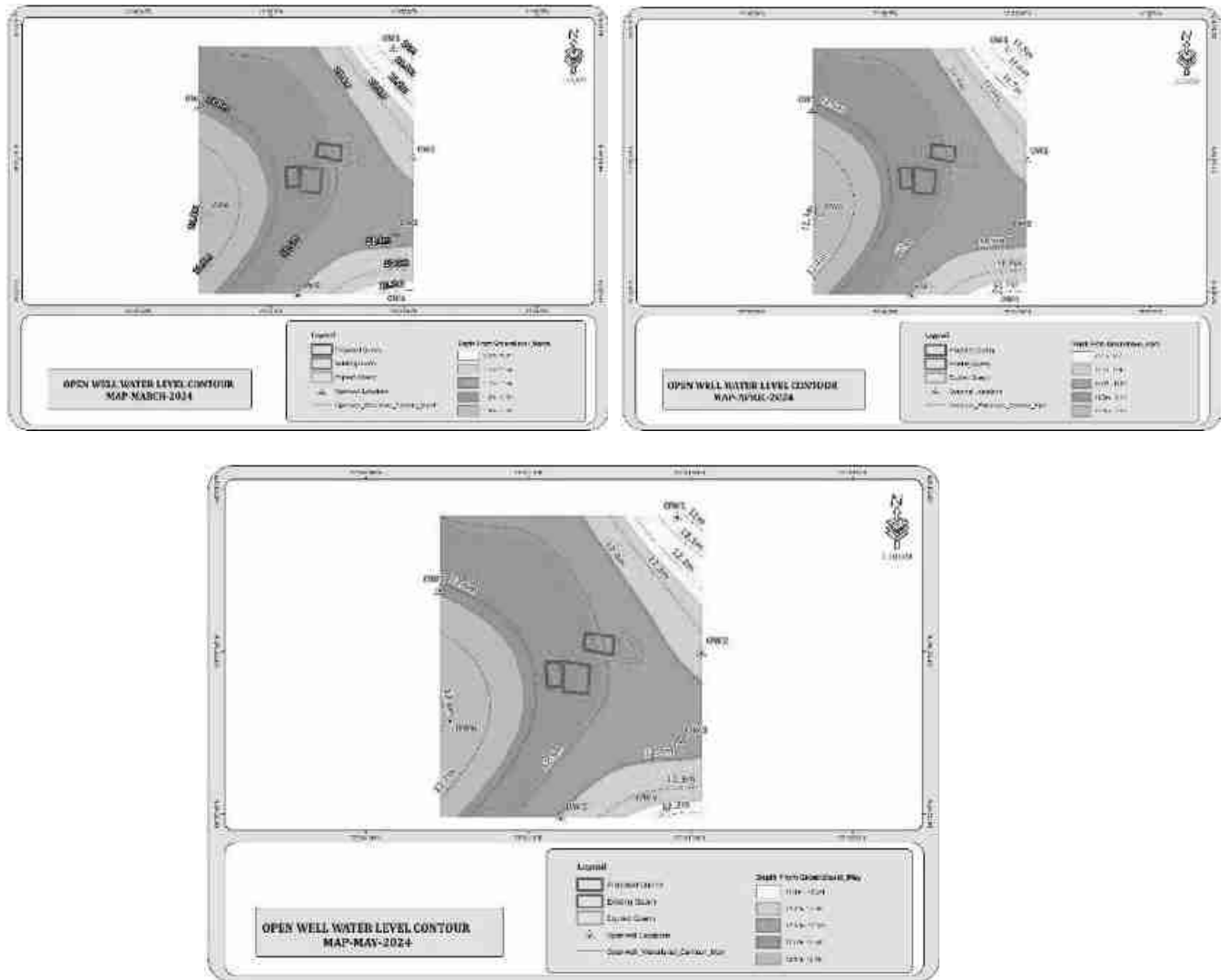
The water level in the area is above 52m hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

**TABLE 3.11: WINTER SEASON WATER LEVEL OF OPEN WELLS 1 KM RADIUS**

S.NO	LABEL	LONGITUDE	LATITUDE	Mar-24	Apr-24	May-24
1	OW-1	10° 52' 54.97"N	77° 31' 27.59"E	11	11.5	12
2	OW-2	10° 52' 30.02"N	77° 31' 32.06"E	11.3	11.8	12.3
3	OW-3	10° 52' 13.49"N	77° 31' 28.23"E	11.5	12	12.5
4	OW-4	10° 52' 01.05"N	77° 31' 25.28"E	11.2	11.7	12.2
5	OW-5	10° 51' 59.40"N	77° 31' 06.01"E	11.4	11.9	12.4
6	OW-6	10° 52' 17.46"N	77° 30' 45.57"E	11.8	12.3	12.8
7	OW-7	10° 52' 41.45"N	77° 30' 43.61"E	11.6	12.1	12.6

Source: Onsite monitoring data

**FIGURE 3.9: OPEN WELL CONTOUR MAP- Mar 2024 - May 2024**

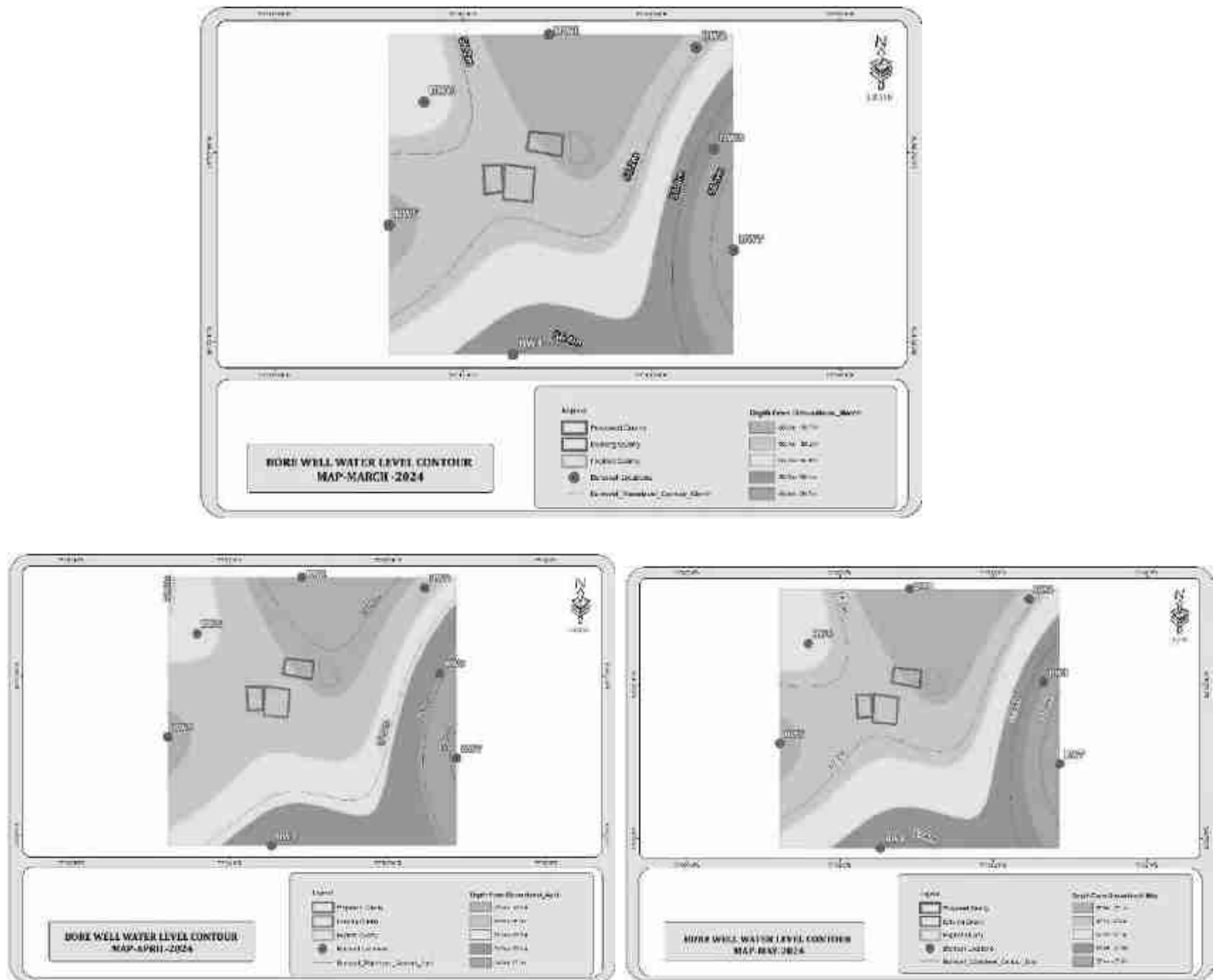


**TABLE 3.12: WINTER SEASON WATER LEVEL OF BOREWELLS 1 KM RADIUS**

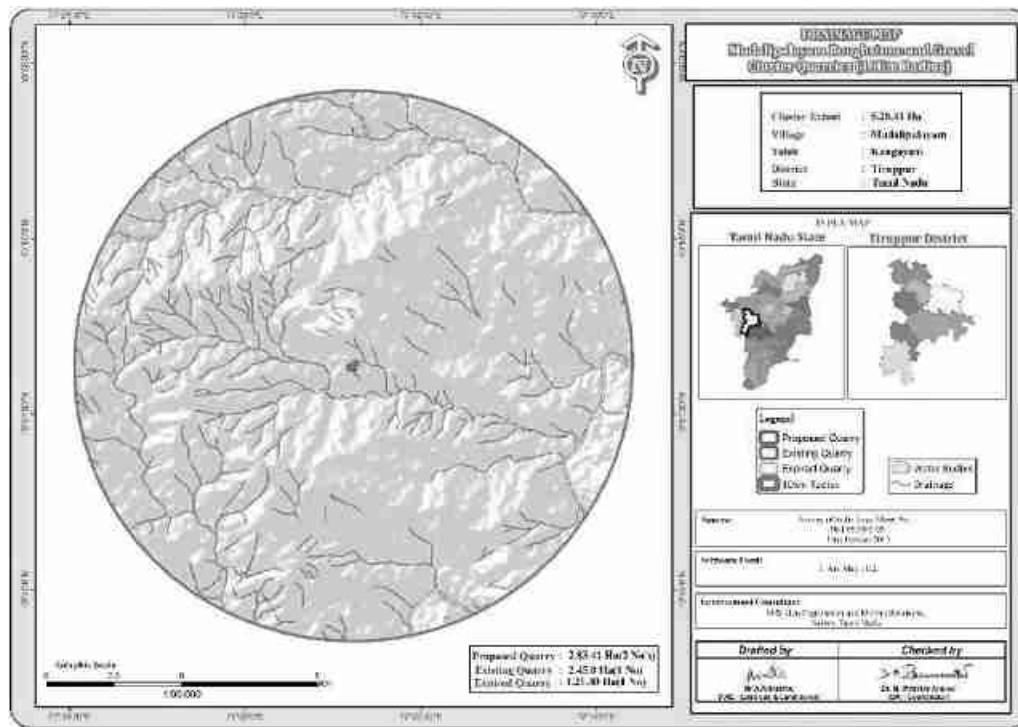
S.NO	LABEL	LONGITUDE	LATITUDE	Mar-24	Apr-24	May-24
1	BW1	10° 52' 48.79"N	77° 31' 13.71"E	56	56.5	57
2	BW2	10° 52' 46.73"N	77° 31' 37.09"E	56.2	56.7	57.2
3	BW3	10° 52' 30.52"N	77° 31' 39.91"E	56.5	57	57.5
4	BW4	10° 51' 57.89"N	77° 31' 07.96"E	56.4	56.9	57.4
5	BW5	10° 52' 18.47"N	77° 30' 48.27"E	56.1	56.6	57.1
6	BW6	10° 52' 38.04"N	77° 30' 53.81"E	56.3	56.8	57.3
7	BW7	10° 52' 14.48"N	77° 31' 43.12"E	56.8	57.3	57.8

Source: Onsite monitoring data

**FIGURE 3.10: BOREWELL CONTOUR MAP – Mar 2024 to May 2024**

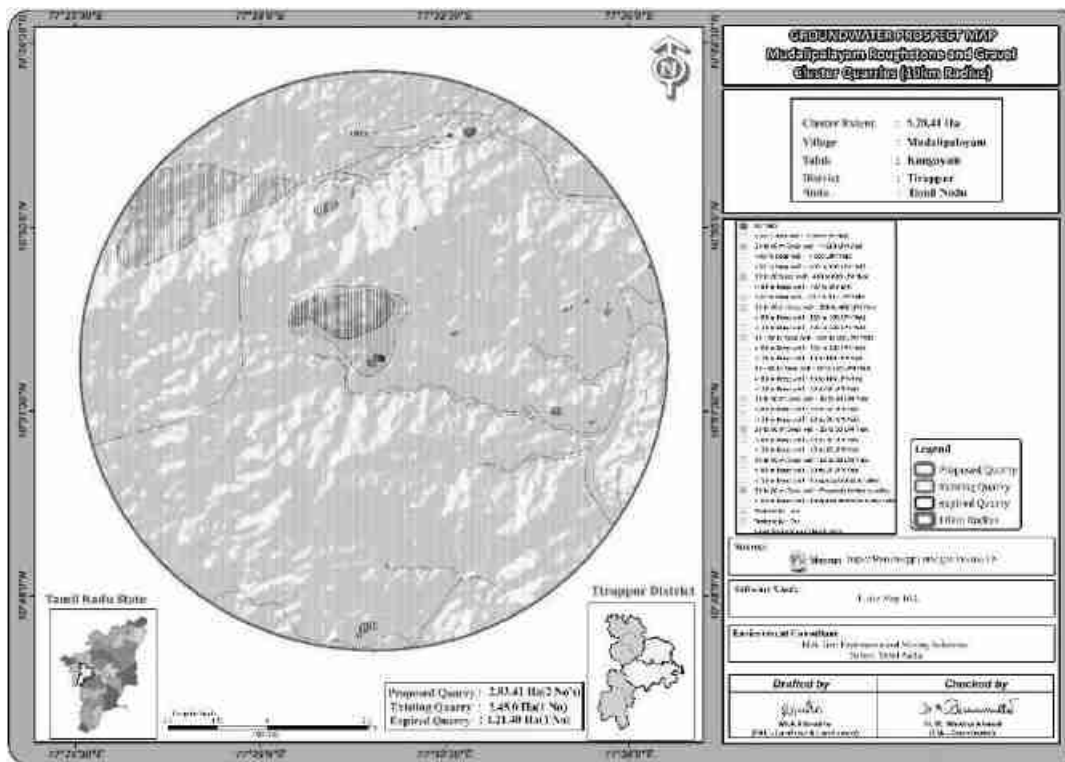


**FIGURE 3.11: DRAINAGE MAP AROUND 10 KM RADIUS FROM PROJECT SITE**



Remarks: it is inferred that the area is dendritic to sub dendritic pattern

**FIGURE 3.12: GROUND WATER PROSPECT MAP**



Remarks: Water table in the area is 30-80m as per the Bhuvan Data

## Geophysical Resistivity Survey

### 3.2.5.1 Methodology and Data Acquisition

The Geophysical Electrical Resistivity survey conducted in the area Schlumberger configuration, Vertical Electrical Sounding (VES) method. Schlumberger electrode set up was employed for making sounding measurements. Since it is least influenced by lateral in homogeneities and is capable of providing higher depth of investigation. This is four electrodes collinear set up where in the outer electrodes send current into the ground and the inner electrodes measure the potential difference.

The present study utilizes maximum current electrode separation  $AB/2$ . The data from this survey are commonly arranged and contoured in the form of Pseudo-section that gives an approximate of the subsurface resistivity. This technique is used for the inversion of Schlumberger VES data to predict the layer parameter namely layer resistivity and Geo electric layer thickness. The main goal of the present study is to search the vertical in homogeneities that is consistent with the measured data.

For a Schlumberger among the Apparent resistivity can be calculated as follows.

$$\rho_a = \frac{GAV}{I}$$

$\Delta V$  = potential difference between receiving electrodes

$G$  = Geometric Factor.

Rocks show wide variation in resistivity ranging from 10<sup>-8</sup> more than 10<sup>+14</sup> ohmmeter. On a broad classification, one can group the rocks falling in the range of 10<sup>-8</sup> to 1 ohmmeter as good conductors. 1 to 10<sup>6</sup> ohmmeter as intermediate conductors and 10<sup>6</sup> to 10<sup>12</sup> ohmmeter as more as poor conductor. The resistivity of rocks and subsurface lithology, which is mostly dependent on its porosity and the pore fluid resistivity is defined by Archie's Law,

$$\rho_r = F\rho_w = a \emptyset^m \rho_w$$

$\rho_r$  = Resistivity of Rocks

$\rho_w$  = Resistivity of water in pores of rock

$F$  = Formation Factor

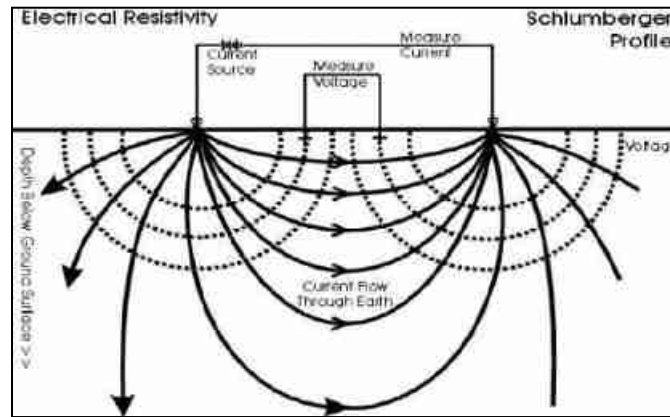
$\emptyset$  = Fractional pore volume

$A$  = Constants with values ranging from 0.5 to 2.5

### 3.2.5.2 Survey Layout

The field equipment deployed for the study is in a deep resistivity meter with a model of SSR – MP – AT. This Signal stacking Resistivity meter is a high-quality data acquisition system incorporating several innovation features for Earth resistivity. In the presence of random earth Noises the signal to noise ration can be enhanced by  $\sqrt{N}$  where  $N$  is the number of stacked readings. This SSR meter in which running averages of measurements  $[1, (1+2)/2, (1+2+3)/3 \dots (1+2\dots+16/16)]$  up to the chosen stacks are displayed and the final average is stored automatically, in memory utilizing the principles of stacking to achieve the benefit of high signals to noise ratio. Based on these above significations the signal stacking resistivity meter was used for (VES) Vertical Electric Resistivity Sounding.

### RESISTIVITY SURVEY PROFILE



Measurements of ground Resistivity is essentially done by sending a current through two electrodes called current electrodes ( $C_1$  &  $C_2$ ) and measuring the resulting potential by two other electrodes called potential electrode ( $P_1$  &  $P_2$ ). The amount of current required to be sent into the ground depends on the contact resistance at the current electrode, the ground resistivity and the depth of interest.

#### 3.2.5.3 Data Presentation

It was inferred that the low resistance encountered at the depth between 62m. The maximum depth proposed out of proposed projects 42m BGL. Hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

#### 3.2.5.4 Geophysical Data Interpretation

The geophysical data was obtained to study the lateral variations, vertical in homogeneities in the sub – surface with respect to the availability of groundwater. From the interpreted data, it has inferred that the area has moderate groundwater potential in the investigated area. This small quarrying operation will not have any significant impact on the natural water bodies.

It is inferred that the existing quarries in the surrounding area reaches maximum of 45m and the water table is not intersected, only the seepage water during rainy season encountered from the upper layer and it will be used for the Greenbelt development, Dust suppression and quarrying operation.

### 3.3 AIR ENVIRONMENT

The existing ambient air quality of the area is important for evaluating the impact of mining activities on the ambient air quality.

The baseline studies on air environment include identification of specific air pollution parameters and their existing levels in ambient air. The ambient air quality with respect to the study zone of 10 km radius around the cluster forms the baseline information. The prime objective of the baseline air quality study was to establish the existing ambient air quality of the study area. These will also be useful for assessing the conformity to standards of the ambient air quality during the operation of proposed projects in cluster.

#### 3.3.1 Meteorology & Climate

Meteorology is the key to understand the Air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind in the broadest sense. Wind fluctuations over a very wide range of time, accomplish dispersion and strongly influence other processes associated with them.

A temporary meteorological station was installed at project site by covering cluster quarries. The station was installed at a height of 3 m above the ground level in such a way that there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature are recorded on hourly basis.

#### Climate

- The atmospheric conditions prevailing in this region are of a tropical nature. In Tiruppur, the precipitation during summers is significantly higher in comparison to winters. This location is classified as Aw by Köppen and Geiger. In Tiruppur, the average annual temperature is 26.4 °C | 79.6 °F. Approximately 943 mm | 37.1 inch of rainfall occurs on a yearly basis.
- Due to its proximity to the equator, it is quite challenging to precisely delineate summers in Tiruppur. The period of January, February, March, June, July, August, September, October, November, December is widely regarded as the peak season for visitation.
- The month with the least amount of precipitation is January exhibiting a mere 13 mm | 0.5-inch rainfall. The maximum quantity of rainfall is observed during the month of October, exhibiting an average value of 209 mm | 8.2 inch.
- The month of April boasts the highest average temperature, with a recorded maximum of 30.0 °C | 86.0 °F. During the month of December, there is a notable drop in temperature, with an average low of approximately 23.7 °C | 74.7 °F.

Source: <https://en.climate-data.org/asia/india/tamil-nadu/tiruppur-2789/>



## Rainfall

**TABLE 3.13: RAINFALL DATA**

Actual Rainfall in mm					Normal Rainfall in mm
2017	2018	2019	2020	2021	
679.8	716.2	488.1	748.8	845.1	606.8

Source: <https://www.twadboard.tn.gov.in/content/tiruppur>

**TABLE 3.14: METEOROLOGICAL DATA RECORDED AT SITE**

S.No	Parameters		Mar-2024	Apr-2024	May-2024
1	Temperature (°C)	Max	29.57	26.9	26.95
		Min	25.51	24.5	23.11
		Avg	27.54	25.7	25.03
2	Relative Humidity (%)	Avg	72	81.56	81.18
3	Wind Speed (m/s)	Max	5.52	3.89	4.31
		Min	1.26	1.44	1.68
		Avg	3.39	2.66	2.99
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind Direction		E, W	ENE, E	ENE, E

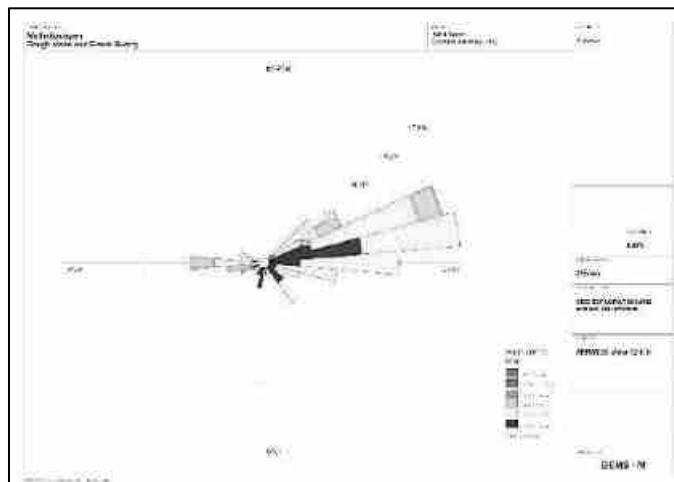
Source: On-site monitoring/sampling by EHS 360 labs Pvt Ltd in association with GEMS

### Correlation between Secondary and Primary Data

The average rain fall over the period of five years is 606.8mm. The meteorological data collected at the site is almost similar to that of secondary data collected from IMD Tiruppur Agro. A comparison of site data generated during the three months with that of IMD, Tiruppur Agro

Wind rose diagram of the study site is depicted in Figure. 3.13. Predominant downwind direction of the area during study season is East-North-East to South East.

**FIGURE 3.13: WINDROSE DIAGRAM**



In the abstract of collected data wind rose were drawn on presented in figure No.3.14 during the monitoring period in the study area

1. Predominant winds were from E, W, ENE, E
2. Wind velocity readings were recorded between 0.50 to 5.70m/s
3. Calm conditions prevail of about 0 % of the monitoring period
4. Temperature readings ranging from 20.94 to 29.57 °C
5. Relative humidity ranging from 72 to 81.56 %
6. The monitoring was carried out continuously for three months.

### 3.3.2 Methodology and Objective

The prime objective of the ambient air quality study is to assess the existing air quality of study area and its conformity to NAAQS. The observed sources of air pollution in the study area are industrial, traffic and domestic activities. The baseline status of the ambient air quality has been established through a scientifically designed ambient air quality monitoring network considering the followings:

- Meteorological condition on synoptic scale;
- Topography of the study area;
- Representatives of regional background air quality for obtaining baseline status;
- Location of residential areas representing different activities;
- Accessibility and power availability; etc.,

### 3.3.3 Sampling and Analytical Techniques

**TABLE 3.15: METHODOLOGY AND INSTRUMENT USED FOR AAQ ANALYSIS**

Parameter	Method	Instrument
PM2.5	Gravimetric Method Beta attenuation Method	Fine Particulate Sampler Make – Thermo Environmental Instruments – TEI 121
PM10	Gravimetric Method Beta attenuation Method	Respirable Dust Sampler Make –Thermo Environmental Instruments – TEI 108
SO <sub>2</sub>	IS-5182 Part II (Improved West & Gaeke method)	Respirable Dust Sampler with gaseous attachment
NO <sub>x</sub>	IS-5182 Part II (Jacob & Hochheiser modified method)	Respirable Dust Sampler with gaseous attachment
Free Silica	NIOSH – 7601	Visible Spectrophotometry

Source: Sampling Methodology followed by EHS 360 labs Pvt Ltd & CPCB Notification

**TABLE 3.16: NATIONAL AMBIENT AIR QUALITY STANDARDS**

Sl.No.	Pollutant	Time Weighted Average	Concentration in ambient air	
			Industrial, Residential, Rural & other areas	Ecologically Sensitive area (Notified by Central Govt.)
1	Sulphur Dioxide ( $\mu\text{g}/\text{m}^3$ )	Annual Avg.* 24 hours**	50.0 80.0	20.0 80.0
2	Nitrogen Dioxide ( $\mu\text{g}/\text{m}^3$ )	Annual Avg. 24 hours	40.0 80.0	30.0 80.0
3	Particulate matter (size less than $10\mu\text{m}$ ) PM10 ( $\mu\text{g}/\text{m}^3$ )	Annual Avg. 24 hours	60.0 100.0	60.0 100.0
4	Particulate matter (size less than $2.5\mu\text{m}$ ) PM2.5 ( $\mu\text{g}/\text{m}^3$ )	Annual Avg. 24 hours	40.0 60.0	40.0 60.0

Source: NAAQS CPCB Notification No. B-29016/20/90/PCI-I Dated: 18<sup>th</sup> Nov 2009

\*Annual Arithmetic mean of minimum 104 measurements in a year taken twice a Week 24 hourly at uniform interval,

\*\* 24 hourly / 8 hourly or 1 hourly monitored Value as applicable shall be complied with 98 % of the time in a year. However, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

### 3.3.4 Frequency & Parameters for Sampling

Ambient air quality monitoring has been carried out with a frequency of two samples per week at Seven (7) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period Mar 2024 – May 2024. The baseline data of ambient air has been generated for PM<sub>10</sub>, PM<sub>2.5</sub>, Sulphur Dioxide (SO<sub>2</sub>) & Nitrogen Dioxide (NO<sub>2</sub>) Monitoring has been carried out as per the CPCB, MoEF guidelines and notifications.

The equipment was placed preferably at a height of at least  $3 \pm 0.5\text{m}$  above the ground level at each monitoring station, for negating the effects of wind-blown ground dust. The equipment was placed at open space free from trees and vegetation which otherwise act as a sink of pollutants resulting in lower levels in monitoring results.

### 3.3.5 Ambient Air Quality Monitoring Stations

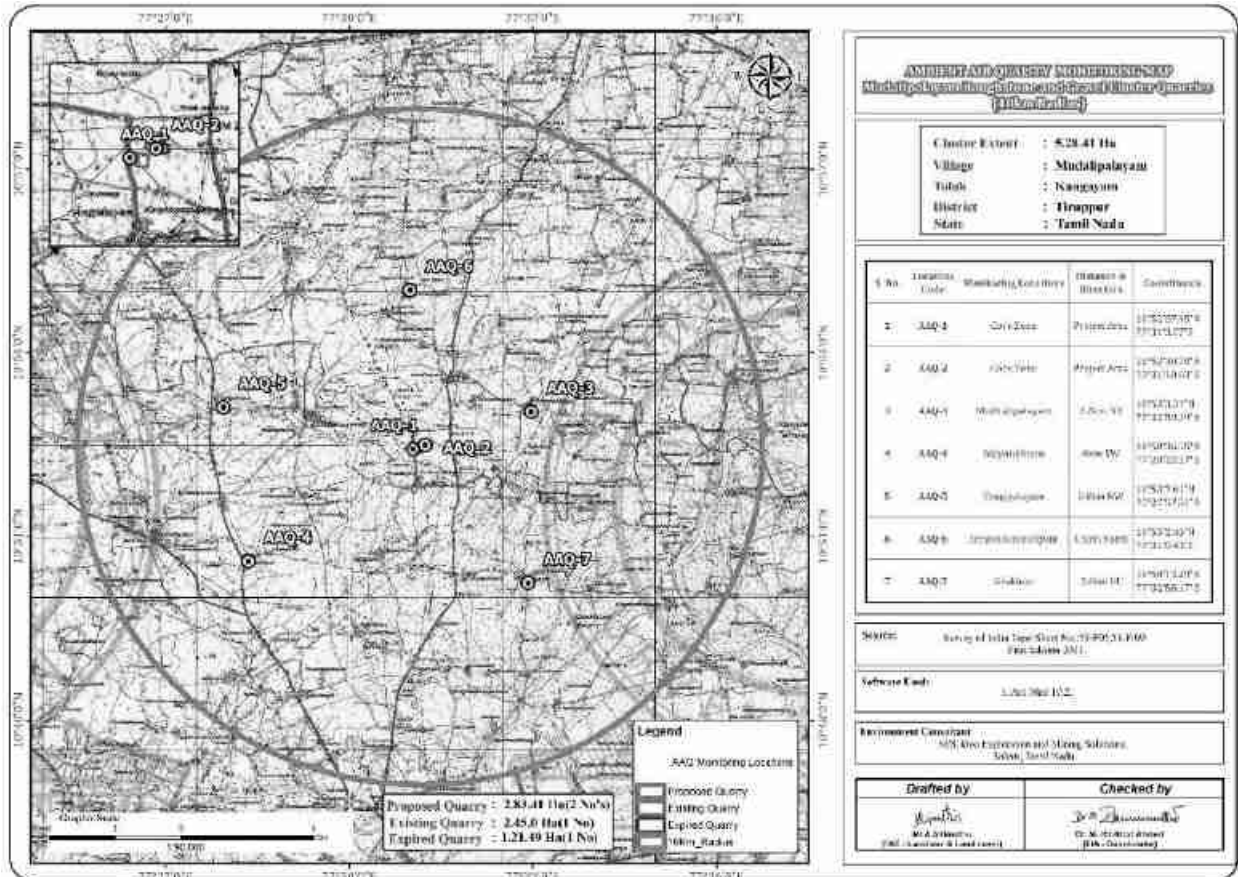
Seven (7) monitoring stations were set up in the study area as depicted in Figure 3.15 for assessment of the existing ambient air quality. Details of the sampling locations are as per given below.

**TABLE 3.17: AMBIENT AIR QUALITY (AAQ) MONITORING LOCATIONS**

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	AAQ-1	Core Zone	Project Area	10°52'27.45"N 77°31'3.77"E
2	AAQ-2	Core Zone	Project Area	10°52'30.70"N 77°31'10.53"E
3	AAQ-3	Mudhalipalayam	3.2km NE	10°53'3.31"N 77°32'59.19"E
4	AAQ-4	Idayankinaru	6km SW	10°50'36.55"N 77°28'22.17"E
5	AAQ-5	Vengipalayam	5.8km NW	10°53'7.61"N 77°27'57.51"E
6	AAQ-6	Sengondampalayam	4.5km North	10°55'2.45"N 77°31'0.43"E
7	AAQ-7	Sirukinar	5.0km SE	10°50'15.29"N 77°32'56.17"E

Source: On-site monitoring/sampling by EHS 360 labs Pvt Ltd in association with GEMS.

**FIGURE 3.15: AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS**

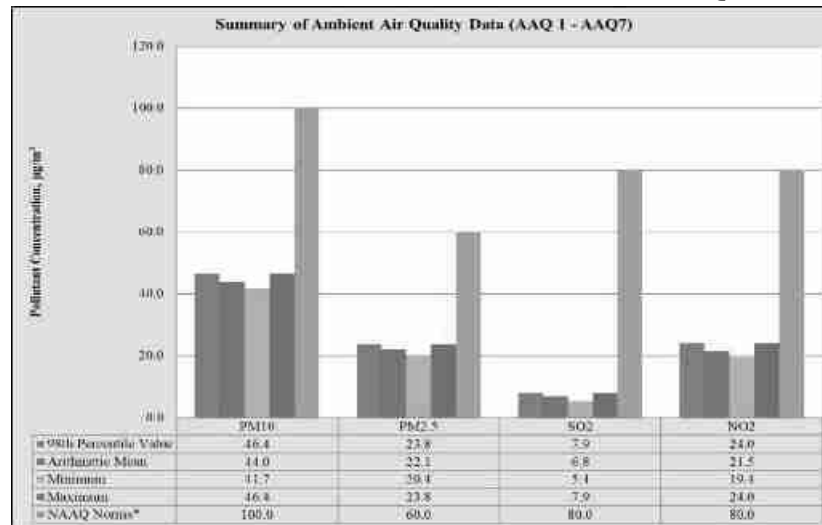
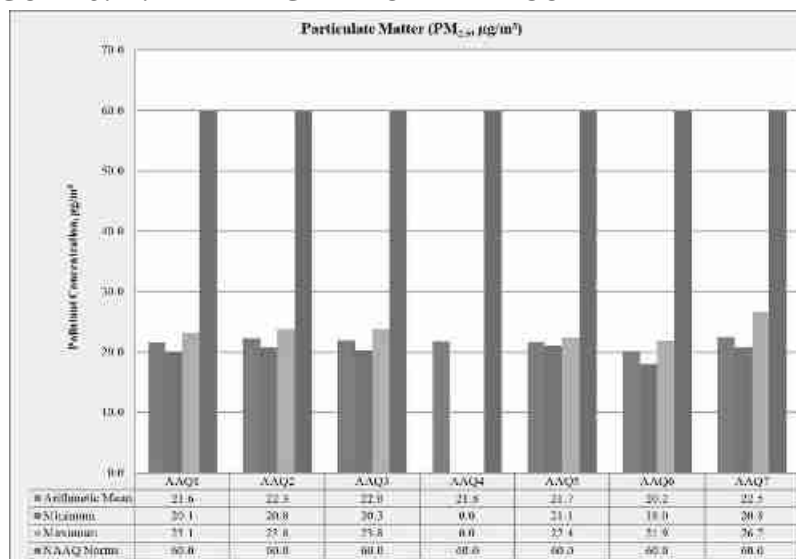


**TABLE 3.18: SUMMARY OF AAQ 1 to AAQ 7**

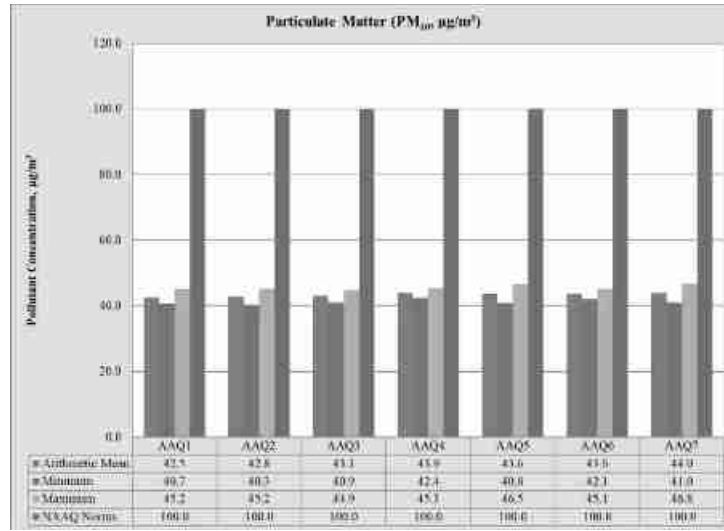
<b>PM10</b>	<b>AAQ1 Core zone</b>	<b>AAQ2 Core Zone</b>	<b>AAQ3 Mudhalipalayam</b>	<b>AAQ4 Idyankinaru</b>	<b>AAQ5 Vengipalayam</b>	<b>AAQ6 Sengondampalayam</b>	<b>AAQ7 Sirukinar</b>
<b>Arithmetic Mean</b>	42.5	42.8	43.1	43.9	43.6	43.6	44.0
<b>Minimum</b>	40.7	40.3	40.9	42.4	40.8	42.1	41.0
<b>Maximum</b>	45.2	45.2	44.9	45.3	46.5	45.1	46.8
<b>NAAQ Norms</b>	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<b>PM2.5</b>	<b>AAQ1</b>	<b>AAQ2</b>	<b>AAQ3</b>	<b>AAQ4</b>	<b>AAQ5</b>	<b>AAQ6</b>	<b>AAQ7</b>
<b>Arithmetic Mean</b>	21.6	22.3	22.0	21.8	21.7	20.2	22.5
<b>Minimum</b>	20.1	20.8	20.3	0.0	21.1	18.0	20.8
<b>Maximum</b>	23.1	23.8	23.8	0.0	22.4	21.9	26.7
<b>NAAQ Norms</b>	60.0	60.0	60.0	60.0	60.0	60.0	60.0
<b>SO2</b>	<b>AAQ1</b>	<b>AAQ2</b>	<b>AAQ3</b>	<b>AAQ4</b>	<b>AAQ5</b>	<b>AAQ6</b>	<b>AAQ7</b>
<b>Arithmetic Mean</b>	6.4	6.5	6.4	6.4	6.8	6.4	6.8
<b>Minimum</b>	5.1	5.2	5.4	4.3	5.0	5.1	5.6
<b>Maximum</b>	7.6	7.9	7.8	8.2	8.0	7.9	7.9
<b>NAAQ Norms</b>	80.0	80.0	80.0	80.0	80.0	80.0	80.0
<b>NO2</b>	<b>AAQ1</b>	<b>AAQ2</b>	<b>AAQ3</b>	<b>AAQ4</b>	<b>AAQ5</b>	<b>AAQ6</b>	<b>AAQ7</b>
<b>Arithmetic Mean</b>	20.4	20.6	21.5	20.2	21.8	21.8	20.8
<b>Minimum</b>	18.4	19.2	18.8	18.6	20.1	20.2	18.5
<b>Maximum</b>	22.3	22.1	23.5	21.8	24.6	23.7	23.1
<b>NAAQ Norms</b>	80.0	80.0	80.0	80.0	80.0	80.0	80.0

**TABLE 3.19: ABSTRACT OF AMBIENT AIR QUALITY DATA**

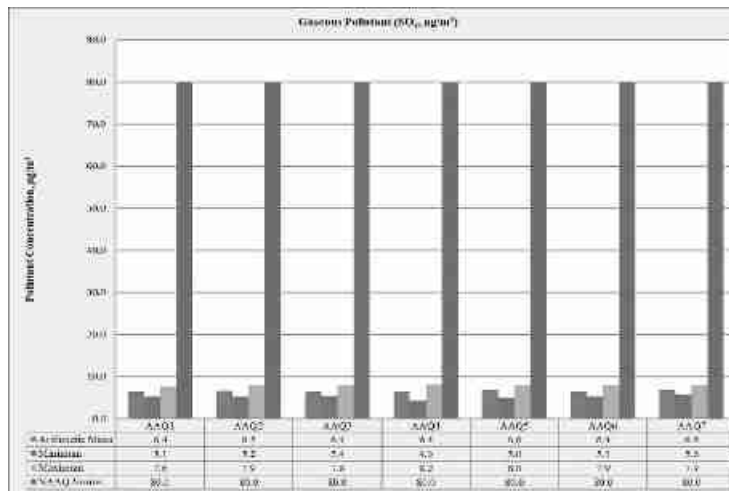
1	Parameter	PM10	PM2.5	SO <sub>2</sub>	NO <sub>2</sub>
2	No. of Observations	260	260	260	260
3	98 <sup>th</sup> Percentile Value	46.4	23.8	7.9	24.0
4	Arithmetic Mean	44.0	22.1	6.8	21.5
5	Geometric Mean	44.0	22.1	6.8	21.4
6	Standard Deviation	1.4	1.0	0.8	1.4
7	Minimum	41.7	20.4	5.4	19.4
8	Maximum	46.4	23.8	7.9	24.0
9	<b>NAAQ Norms*</b>	<b>100.0</b>	<b>60.0</b>	<b>80.0</b>	<b>80.0</b>
	% Values exceeding Norms*	0.0	0.0	0.0	0.0

**FIGURE 3.16: BAR DIAGRAM OF SUMMARY OF AAQ 1 – AAQ7****FIGURE 3.17: BAR DIAGRAM OF PARTICULATE MATTER PM<sub>2.5</sub>**

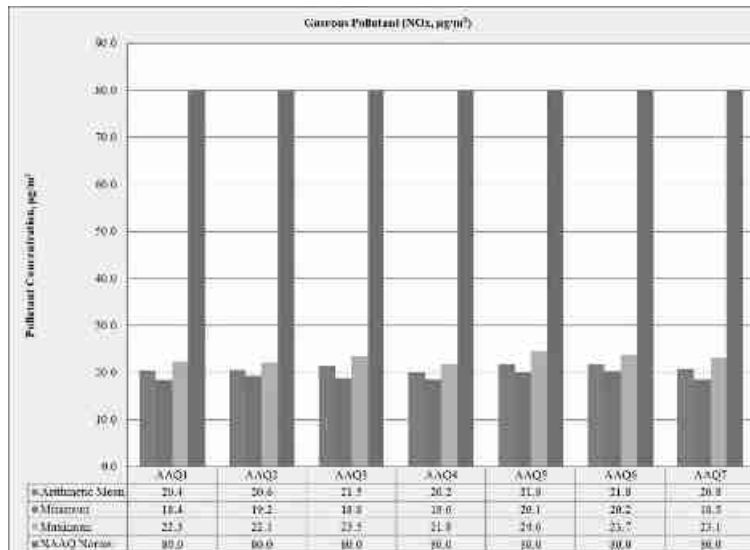
**FIGURE 3.18: BAR DIAGRAM OF PARTICULATE MATTER PM<sub>10</sub>**



**FIGURE 3.19: BAR DIAGRAM OF GASEOUS POLLUTANT SO<sub>2</sub>**



**FIGURE 3.20: BAR DIAGRAM OF GASEOUS POLLUTANT NO<sub>x</sub>**



### 3.3.6 Interpretations & Conclusion

As per monitoring data, PM<sub>10</sub> ranges from 36.4 µg/m<sup>3</sup> to 44.7 µg/m<sup>3</sup>, PM<sub>2.5</sub> data ranges from 17.0/m<sup>3</sup> to 21.6 µg/m<sup>3</sup>, SO<sub>2</sub> ranges from 4.2 µg/m<sup>3</sup> to 7.0 µg/m<sup>3</sup> and NO<sub>2</sub> data ranges from 16.5 µg/m<sup>3</sup> to 23.2 µg/m<sup>3</sup>. The concentration levels of the above criteria pollutants were observed to be well within the limits of NAAQS prescribed by CPCB.

## 3.4 NOISE ENVIRONMENT

The vehicular movement on road and mining activities is the major sources of noise in study area, the environmental assessment of noise from the mining activity and vehicular traffic can be undertaken by taking into consideration various factors like potential damage to hearing, physiological responses, and annoyance and general community responses. The main objective of noise monitoring in the study area is to establish the baseline noise level and assess the impact of the total noise expected to be generated during the project operations around the project site.

### 3.4.1 Identification of Sampling Locations

In order to assess the ambient noise levels within the study area, noise monitoring was carried out at Seven (7) locations. The noise level measurement was carried out at each ambient air quality station. The main aim of the noise level monitoring is

- To assess the ambient Noise level in the study area
- Type of noise pollution generated in the core zone
- To predict the temporal changes in the ambient noise level in the area

The noise level monitoring locations were carried out by covering commercial, residential, rural areas within the radius of 10km. A noise monitoring methodology was chosen such that it best suited the purpose and objectives of the study.

**TABLE 3.21: DETAILS OF SURFACE NOISE MONITORING LOCATIONS**

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	N1	Core Zone	Project Area	10°52'27.13"N 77°31'3.67"E
2	N2	Core Zone	Project Area	10°52'30.58"N 77°31'11.85"E
3	N3	Mudhalipalayam	3.2km NE	10°53'3.13"N 77°32'59.03"E
4	N4	Idayankinaru	6km SW	10°50'36.66"N 77°28'21.68"E
5	N5	Vengipalayam	5.8km NW	10°53'7.36"N 77°27'57.62"E
6	N6	Sengondampalayam	4.5km North	10°55'2.00"N 77°31'0.31"E
7	N7	Sirukinar	5.0km SE	10°50'15.36"N 77°32'55.86"E
8	N8	Core Zone	Project Area	10°52'27.13"N 77°31'3.67"E

Source: On-site monitoring/sampling by EHS 360 labs Pvt Ltd in association with GEMS.



### 3.4.2 Method of Monitoring

Digital Sound Level Meter was used for the study. All reading was taken on the ‘A-Weighting’ frequency network, at a height of 1.5 meters from ground level. The sound level meter does not give a steady and consistent reading and it is quite difficult to assess the actual sound level over the entire monitoring period. To mitigate this shortcoming, the Continuous Equivalent Sound level, indicated by Leq, is used. Equivalent sound level, ‘Leq’, can be obtained from variable sound pressure level, ‘L’, over a time period by using following equation. The equivalent noise level is defined mathematically as,

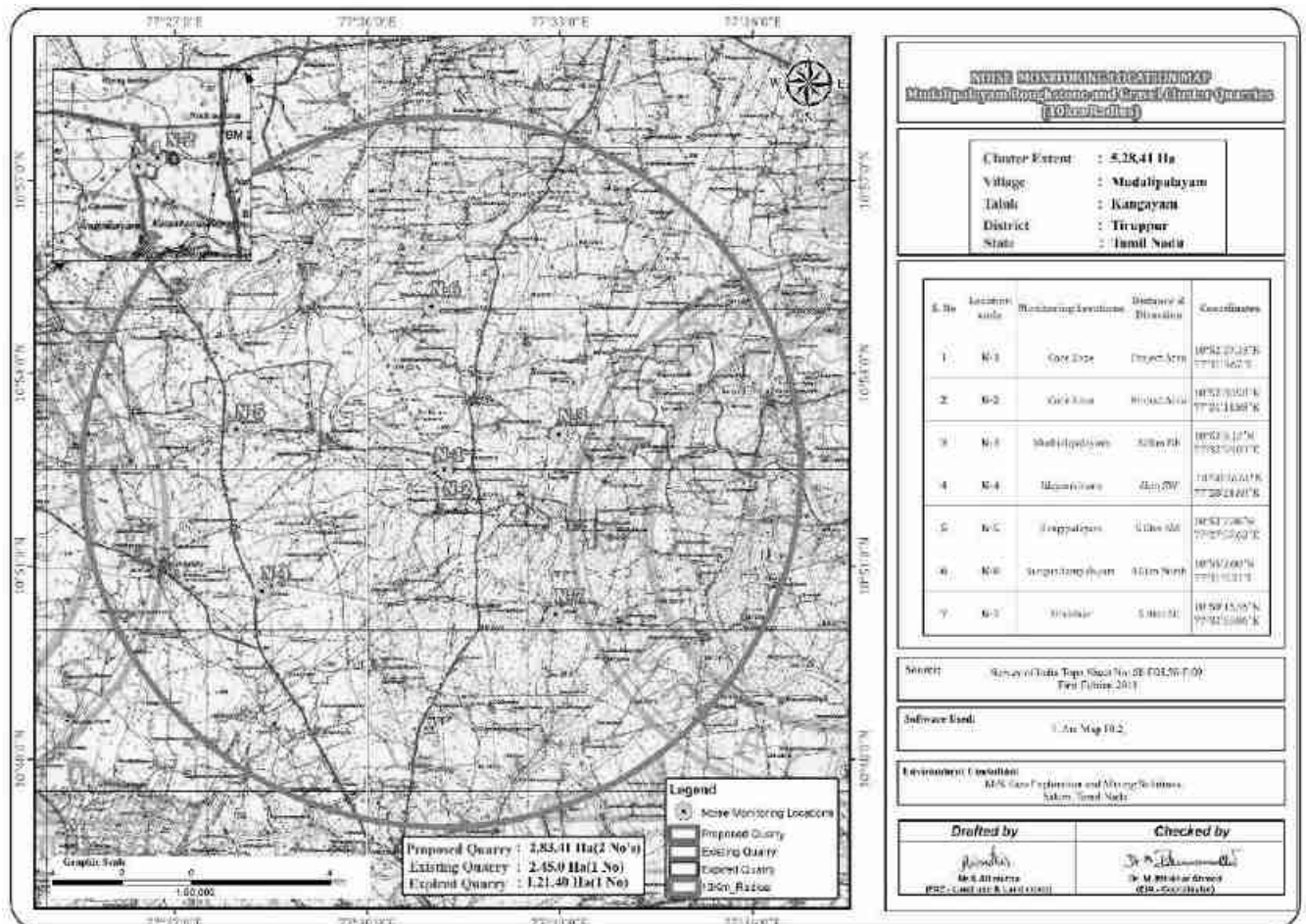
$$Leq = 10 \text{ Log } L / T \sum (10L_n/10)$$

Where L = Sound pressure level at function of time dB (A)

T = Time interval of observation

Measured noise levels, displayed as a function of time, is useful for describing the acoustical climate of the community. Noise levels recorded at each station with a time interval of about 60minutes are computed for equivalent noise levels. Equivalent noise level is a single number descriptor for describing time varying noise levels.

**FIGURE 3.23: NOISE MONITORING STATIONS AROUND 10 KM RADIUS**



### 3.4.3 Analysis of Ambient Noise Level in the Study Area

The Digital Sound pressure level has been measured by a sound level meter (Model: HTC SL-1352)

An analysis of the different Leq data obtained during the study period has been made. Variation was noted during the day-time as well as night-time. The results are presented in below Table 3.32.

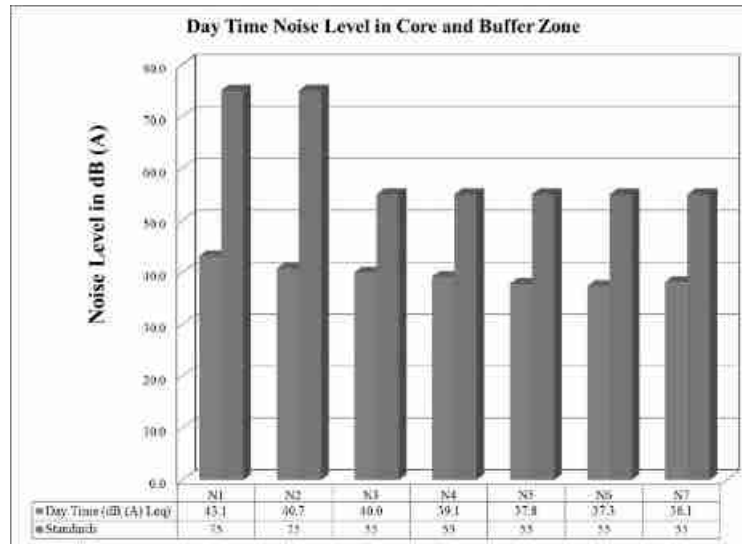
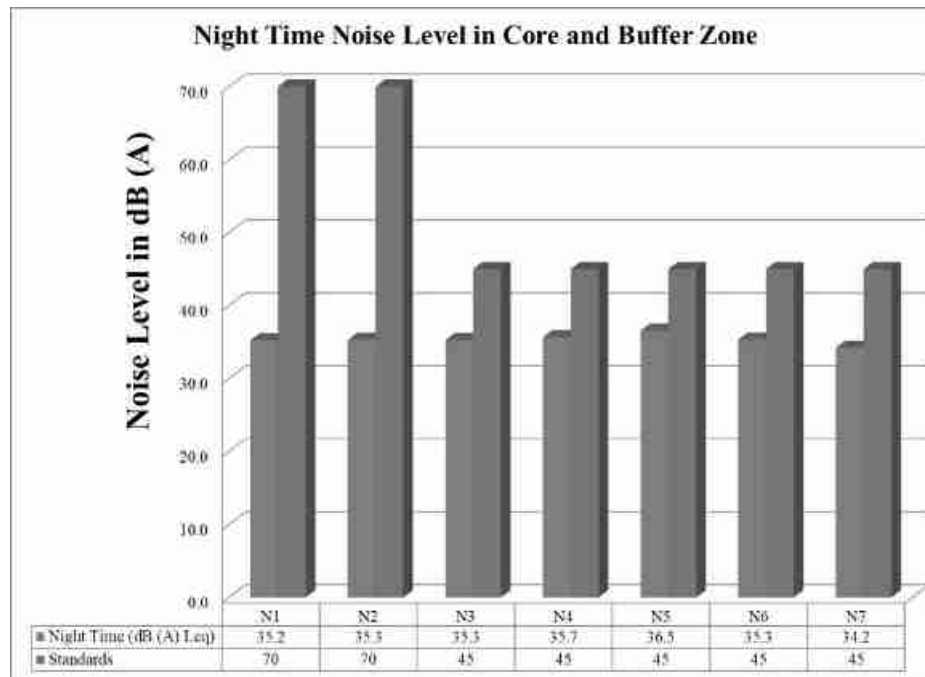
Day time: 6:00 hours to 22.00 hours.

Night time: 22:00 hours to 6.00 hours.

**TABLE 3.22: AMBIENT NOISE QUALITY RESULT**

S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
1	Core Zone	43.1	35.2	<b>Industrial</b> <b>Day Time- 75 dB (A)</b> <b>Night Time- 70 dB (A)</b>
2	Core Zone	40.7	35.3	
3	Mudhalipalayam	40.0	35.3	<b>Residential</b> <b>Day Time- 55 dB (A)</b> <b>Night Time- 45 dB (A)</b>
4	Idayankinaru	39.1	35.7	
5	Vengipalayam	37.8	36.5	
6	Sengondampalayam	37.3	35.3	
7	Sirukinar	38.1	34.2	
8	Core Zone	38.1	37.0	

Source: On-site monitoring/sampling by EHS 360 labs Pvt Ltd in association with GEMS

**FIGURE 3.24: DAY TIME NOISE LEVELS IN CORE AND BUFFER ZONE****FIGURE 3.25: NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE**

### 3.4.4 Interpretation & Conclusion:

Ambient noise levels were measured at 7 (Seven) locations around the proposed project area. Noise levels recorded in core zone during day time were from 40.7 – 43.1 dB (A) Leq and during night time were from 35.2 – 35.3 dB (A) Leq. Noise levels recorded in buffer zone during day time were from 39.1 to 37.3 dB (A) Leq and during night time were from 34.2 to 36.5 dB (A) Leq. Thus, the noise level for Industrial and Residential area meets the requirements of CPCB.

### **3.5. BIOLOGICAL ENVIRONMENT**

Ecology is a branch of science that dealing the relations and interactions between organisms and their environment. An ecological survey of the study area was conducted, particularly with reference to the listing of species and assessment of the existing baseline ecological conditions in the study area. The main objective of the biological study is to collect the baseline data regarding flora and fauna in the study area. Data has been collected through extensive surveys of the area with reference to flora and fauna. Information is also collected from different sources i.e., government departments such as the District Forest Office, Government of Tamil Nadu.

The main objective of the present study is to assess the current ecology & and biodiversity scenario during primary field survey carried out within 2 km radius impact zone in and around the Muthalipalayam Rough stone and gravel quarry (ML Area: 3.66.0 ha) to understand the presence and behaviour of the floral and faunal diversity of the study area with respect to terrestrial flora and fauna with special emphasis on Rare, Endangered and Threatened species & carry out Environmental Management Plan. The plan will identify and address the impacts, where these are adverse in nature, and thereafter design mitigation measures to manage such impacts in a manner as to conserve the environment and ecology of the area.

#### **3.5.1. Objectives of Biological Studies**

- a) To study the likely impact of the proposed mining project on the local biodiversity and to suggest mitigation measures, if required, for vulnerable biota.
- b) Identification and listing of flora and fauna which are important as per the Wildlife (Protection) Act 1972.
- c) Suggest Wildlife conservation (species specific/habitat specific) and management plan for the threatened (critically endangered & endangered species - schedule I) faunal species if any reported within the study area.
- d) To identify the impacts of mining on agricultural lands and how it affects.
- e) Proper collection of information about wildlife Sanctuaries/ national parks/ biosphere reserves of the project area.
- f) Devise management & conservation measures for biodiversity.

#### **3.5.2. Methodology of Sampling**

Identification of vegetation in relation to the natural flora and crops was conducted through reconnaissance field surveys and onsite observations in core and buffer zone. The plant species identification was done based on the reference materials and also by examining the morphological characteristics and reproductive materials i.e., flowers, fruits and seeds. Land use pattern in relation to agriculture crop varieties were identified through physical verification of land and interaction with local villagers.

The faunal elements (animal species) of core and buffer zone were identified by direct sightings or indirect evidences viz. pug marks, skeletal remains, scats and droppings etc. (Jayson and Easa 2004). Standard binocular was used for the observations. The authenticity of faunal elements occurrence was confirmed by interaction with the local people. Avifauna identification was done with pictorial descriptions of published literature. Information pertaining to existence of any migratory corridors and paths were obtained from local

inhabitants. The status of each faunal element was determined and wildlife schedule category was ascertained as per the IUCN-Red Data Book and Indian wildlife (Protection) Act, 1972.

Plot method is used in the floral documentation in the core and buffer zone. For trees (10x10-m), shrubs (5x5-m) and herbs (1x1-m) plots were taken. Birds and butterflies were mainly focused during faunal assessment, transect method was employed for birds and butterflies. Transect is a path along which one counts and records the occurrence of an individual for study. A straight-line walk covering desired distance, within a time span of one hour to 30 minutes was carried out in the proposed region. Bird species were recorded during the hours of peak activity. 07:00 to 11:00 Hrs and 14:30 to 17:30 Hrs (Bibby et al. 2000).

Direct observations and bird calls were used for bird documentation. Same transects were used for counting butterflies. Opportunistic observations were made for Amphibians, reptiles and ordinates. The presence of mammals was recorded by direct and indirect signs. All possible transects were taken for birds and butterflies. Birds and butterflies were classified into species level. Recorded bird species were identified to species level using standard books (Ali & Ripley 1987, Grimmett et al., 2016).

### **3.5.2.1. Field surveys**

The field visit was carried out to understand and assess the impacts of mining activities on flora & fauna and natural habitats and prediction after the enhancement of the production capacity of the mine. We evaluated the distribution and abundance of flora and fauna in the study area through primary and secondary data sources.

### **3.5.3. Floral Study**

- The floral survey of the project area is based on field survey of the area.
- The local flora was identified by their morphological observation, such as the size and shape of the leaf, flowers, fruits, and their bark features of the stem, and also documented their habitat viz. Trees, Shrubs, Herbs, Grasses, Climbers etc.
- After surveying the core and the buffer areas, a detailed floral inventory has been compiled. A list of all plants from the study area was prepared and their habitats were recorded.
- Selection of sampling locations was made with reference to topography, land use, vegetation pattern, wind pattern, etc. The observations were taken on natural vegetation, roadside plantations, and non-forest areas (agricultural fields, in plain areas, village wasteland, etc.) for quantitative representation of different species.
- Comparative analysis of the outcome of the Quadrat Sampling was done to understand the Frequency, Dominance, and Abundance of species observed in the study area.
- Quantitative assessment of tree/herb/shrub species diversity was selected in fifteen locations for quadrat which is given below.

#### **3.5.3.1. Sampling**

A stratified simple random sampling procedure was employed to obtain a sample from study area. The study area was further stratified in different land use/ecosystems.

### **3.5.3.2. Sampling Size**

Keeping in mind both random sampling technique and covering all land use patterns for the study following sampling locations were chosen depending up on the area of the proposed site.

### **3.5.3.3. Timing of Study**

The study was carried out during morning and evening hours, to cover the different activity phases for important species such as time resting, feeding, hunting, and daily movements.

### **3.5.3.4. Observations from Sampling**

The various observations relating to flora and fauna species are discussed in detail below, in separate sections.

### **3.5.3.5. Equipment/ References**

- Canon Mark III Camera with 50-500mm lens– Snap shots taken
- Leica Binoculars (8x 20) to spot/identify species
- IUCN Red Data Book – <https://www.iucnredlist.org/species>

Ornithological/Entomological/Herpetological/Mammalian catalogues and pictorial descriptions from various authors and websites are followed for species identification.

## **3.5.4. Part I Field Sampling Techniques**

### **3.5.4.1. Transect walk – Birds**

Six no of transect lines with varying length (100m-300m) and fixed width (2m) were laid which cuts through the core and buffer areas of proposed site. The transect surveys were conducted from 0700 to 1100Hrs and 1430 to 1730Hrs (Bibby et al. 2000). All avifauna found along these transects were recorded for analysing of the data. Counts were conducted while there is no heavy rain, mist or strong wind.

### **3.5.4.2. Modified Pollard Walk – for Butterflies**

The Modified Pollard Walk (Pollard 1977, 1993, Walpole 1999) using fixed width transect walk method were employed to investigate butterfly spatial distribution, diversity, and abundance at the different survey sites.

### **3.5.4.3. Visual Encounter Survey (VES) - reptiles and amphibians**

VES is a time-constrained sampling technique (Campbell and Christman, 1982; Corn and Bury, 1990). It needs a systematic search through an area or habitat for a prescribed time period (Campbell and Christman, 1982). The result of VES is measured against the time spent for search. VES technique is one of the simplest methods and an appropriate technique for both inventory and monitoring Herpetofauna (Heyer et al. 1994).

### **3.5.4.4. Observational methods- Mammals**

For the purpose of recording mammals, we used two different observational techniques: (1) direct observations, and (2) recording of occurrences like holes, markings, scats, hairs, and spines (Menon 2003). For identification confirmations, photographs with a scale reference were used, and locations were recorded using a portable GPS device. Indigenous knowledge particularly that of the locals, was occasionally employed to compile a preliminary list of species and/or aid in the recognition of indicators.

### 3.5.4.5. Multiple Stage Quadrat – Vegetation

A variety of habitat or vegetation structure variables were measured using the Multiple Stage Quadrat sampling protocol (Sykes and Horrill 1977). All of those areas were sampled, and the major corners were temporarily delineated with colored ribbons. Each site was identified in the field using a compass and clinometer, and the plot's latitude, longitude, and elevation were recorded using a handheld Global Positioning System (Garmin 12XL).

### 3.5.5. Flora

The quadrat sampling technique was used for sampling vegetation. Sampling quadrats of the regular shape of dimensions 10 × 10 m, 5 × 5 m, and 1 × 1 m, were nested within each other and were defined as the units for sampling the area and measuring the diversity for trees, Shrubs, and herbs respectively.

#### 3.5.5.1. Flora Composition in the Core Zone

Taxonomically a total of 16 species belonging to 9 families have been recorded from the core mining lease area. It is exhibit flat topography. Based on habitat classification of the enumerated plants the majority of species were Herbs 8 (50%) followed by Trees 4 (25%), Grasses 3 (19%), and Climbers/Creepers 1 (6%). Details of flora with the scientific name were mentioned in Table No. 3.53. The result of the core zone of flora studies shows that Fabaceae and Poaceae and Lamiaceae are the main dominating species in the study area mentioned in Table No.3.53. No species were found as a threatened category (Table No. 3.53).

**Table No: 3.53. Flora in the Core zone of Muthalipalayam Village, Rough stone and Gravel quarry, Kangayam Taluk, Tiruppur District.**

SI. No	English Name	Vernacular Name	Scientific Name	Family Name
<b>Trees</b>				
1.	Neem	Vembu	<i>Azadirachta indica</i>	Meliaceae
2.	Mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
3.	River tamarind	Savundal	<i>Leucaenaleucocephala</i>	Fabaceae
4.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	Arecaceae
<b>Herbs</b>				
1.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
2.	Asthma-plant	Amman pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae
3.	Indian Catmint Plant	Pei viratti	<i>Anisomeles malabarica</i>	Lamiaceae
4.	Indian mallow	Thuthi	<i>Abutilon indicum</i>	Meliaceae
5.	Fish poison	Kolinchi	<i>Tephrosia purpurea</i>	Fabaceae
6.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
7.	Prickly chaff flower	Nayuruv	<i>Achyranthes aspera</i>	Amaranthaceae
8.	Mountain knotgrass	Thengaipoo kirai	<i>Aerva lanata</i>	Amaranthaceae
<b>Creepers /Climbers</b>				
1	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae
<b>Grass</b>				

1.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
2.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae
3.	Nut grass	Korai	<i>Cyperus rotandus</i>	Poaceae

Sources: Species observation in the field study



a. *Azadirachta indica*



b. *Calotropis gigantea*



c. *Leucas aspera*



d. *Tephrosia purpurea*





e. *Cissus quadrangularis*



i. *Leucaena leucocephala*

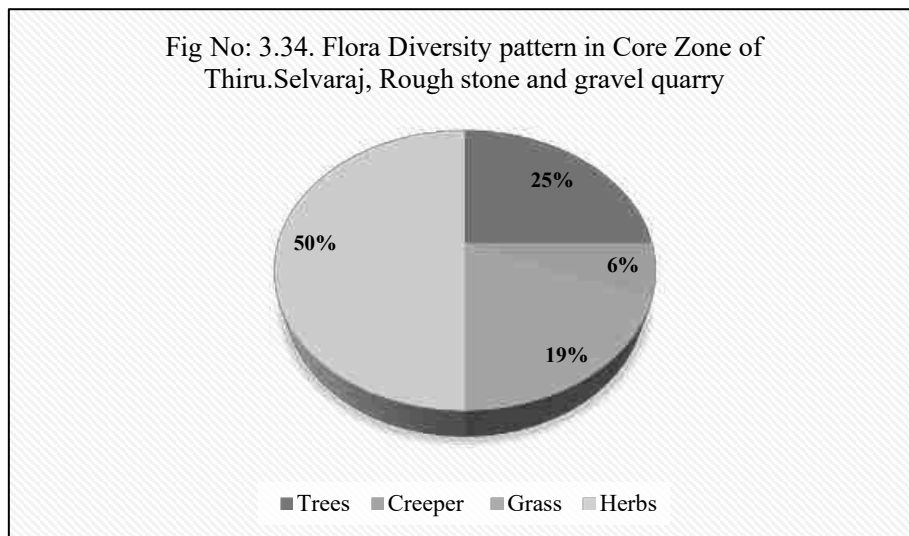


g. *Achyranthes aspera*



h. *Aerva lanata*

**Fig No: 3.33. Flora species observation in the Core zone area**



**Table No: 3.54. Flora in the Buffer zone of Muthalipalayam Village, Rough stone and Gravel quarry, Kangayam Taluk, Tiruppur District**

Sl.No.	English Name	Vernacular Name	Scientific Name	Resource use type *(E, M, EM)
<b>Trees</b>				
1.	Millettia pinnata	Pongam oiltree	<i>Pongamia pinnata</i>	E
2.	Tamarind	Puliyamaram	<i>Tamarindus indica</i>	EM
3.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	E
4.	Wild Date Palm	Pericham	<i>Phoenix sylvestris</i>	E
5.	Coconut	Thennai maram	<i>Cocos nucifera</i>	EM
6.	River tamarind	Savundal	<i>Leucaenaleucocephala</i>	E
7.	Lemon	Ezhumuchaipalam	<i>Citrus lemon</i>	EM
8.	Mango	Manga	<i>Mangifera indica</i>	E
9.	Banyan tree	Alamaram	<i>Ficus benghalensis</i>	E
10.	Neem or Indian lilac	Vembu	<i>Azadirachta indica</i>	M
11.	Creamy Peacock flower	Vadanarayani	<i>Delonix elata</i>	M
12.	Mesquite	Sema Karuvelam	<i>Prosopis juliflora</i>	E
13.	Madras Thorn	Kodukapuli	<i>Pithecellobium dulce</i>	E
14.	Castor oil plant	Amanakku	<i>Ricinus communis</i>	M
15.	Gum arabic tree	Karuvelam	<i>Acacia nilotica</i>	NE
16.	False ashoka	Asoka maram	<i>Polyalthia longifolia</i>	E
17.	Monkey pod tree	Thungumoonchi	<i>Samanea saman</i>	E
18.	Bitter Albizia	Arappu	<i>Albizia amara</i>	M
19.	Giant thorny bamboo	Perumungil	<i>Bambusa bambos</i>	M
20.	Black plum	Navalmaram	<i>Sygygium cumini</i>	EM
21.	Eucalyptus	Eucalyptus	<i>Eucalyptus globules</i>	EM
22.	Custard apple	Seethapazham	<i>Annona reticulata</i>	E
23.	Acacia Nilotica	Karuvelam maram	<i>Vachellia nilotica</i>	M
24.	Indian gooseberry	Nelli	<i>Emblica officinalis</i>	EM
25.	Henna	Marudaani	<i>Lawsonia inermis</i>	EM
26.	Sacred fig	Arasan	<i>Ficus religiosa</i>	E
27.	Indian mulberry	Nuna	<i>Morinda tinctoria</i>	E
28.	Teak	Thekku	<i>Tectona grandis</i>	E
29.	Papaya	Pappali maram	<i>Carica papaya</i>	EM
30.	Chinese chaste tree	Nochi	<i>Vitex negundo</i>	E
31.	Peepal	Arasanmaram	<i>Ficus religiosa</i>	M
32.	Monoon longifolium	Nettilinkam	<i>Polyalthia longifolia</i>	E
33.	Guava	Koyya	<i>Psidium guajava</i>	EM
34.	Curry tree	Karuveppilai	<i>Murraya koenigii</i>	EM

35.	Drumstick tree	Murunga maram	<i>Moringa oleifera</i>	EM
36.	Mesquite	Velikathan maram	<i>Prosopis juliflora</i>	M
37.	Portia tree	Poovarasam	<i>Thespesia populnea</i>	E
<b>Shrubs</b>				
1.	Avaram	Avarai	<i>Senna auriculata</i>	M
2.	Night shade plan	Sundaika	<i>Solanum torvum</i>	EM
3.	Lantana	Unnichedi	<i>Lantana camara</i>	M
4.	Triangular spruge	Chaturakalli	<i>Euphorbia antiquorum</i>	NE
5.	Indian jujube	Elanthai	<i>Ziziphus mauritiana</i>	M
6.	Coffee senna	Kattuttakarai	<i>Senna occidentalis</i>	M
7.	Rosy Periwinkle	Nithyakalyani	<i>Cathranthus roseus</i>	M
8.	Bush Morning Glory	Neyvelik Kattamanakku	<i>Ipomoea carnea</i>	E
9.	Chinese chastetree	Nochi	<i>Vitex negundo</i>	M
10.	Indian Oleander	Arali	<i>Nerium indicum</i>	M
11.	Shoe flower	Chemparuthi	<i>Hibiscu rosa-sinensis</i>	EM
12.	Puriging nut	Kattamanakku	<i>Jatropha curcas</i>	EM
13.	Columnar Cactus	Sappathikalli	<i>Cereus pterogonus</i>	M
14.	Thorn apple	Oomathai	<i>Datura stramonium</i>	E
15.	Jackal jujube	Soorai pazham	<i>Ziziphus oenopolia</i>	M
16.	Indian mallow	Thuthi	<i>Abutilon indicum</i>	M
17.	Peacock Flower	Mayil Kontai	<i>Caesalpinia pulcherrima</i>	M
18.	Datura metel	Uumaththai	<i>Datura metel</i>	NE
19.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	M
20.	Tiger nail	Eli verandi	<i>Martynia annua</i>	M
<b>Herbs</b>				
1.	Prickly chaff flower	Nayuruv	<i>Achyranthes aspera</i>	M
2.	Tridax daisy	Veetukaayapoondur	<i>Tridax procumbens</i>	M
3.	Indian Copperleaf	Kuppaimeni	<i>Acalypha indica</i>	M
4.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	E
5.	Copperleaf	Kuppaimeni	<i>Acalypha indica</i>	M
6.	Indian Catmint Plant	Pei viratti	<i>Anisomeles malabarica</i>	M
7.	Cleome viscosa	Nai kadugu	<i>Celome viscosa</i>	M
8.	Common Wireweed	Arivalmanai poondur	<i>Sida acuta</i>	M
9.	Punarnava	Mukkirattai	<i>Boerhaavia diffusa</i>	EM
10.	Mexican prickly poppy	Kudiyotti	<i>Argemone mexicana</i>	M
11.	Common leucas	Thumbai	<i>Leucas aspera</i>	M
12.	Licorice weed	Kallurukki	<i>Scoparia dulcis</i>	M
13.	Yellow-fruit nightshade	Kandakathirika	<i>Solanum surattense</i>	M
14.	Shameplant	Thottachenunki	<i>Mimosa pudica</i>	M

15.	Node Flower	Kumattikkirai	<i>Allmania nodiflora</i>	M
16.	Asthma-plant	Ammanpacharisi	<i>Euphorbia hirta</i>	M
17.	Pignut	Nattapoochedi	<i>Hyptis suaveolens</i>	M
18.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	M
19.	Asian spiderflower	Naaikaduku	<i>Cleome viscosa L</i>	M
20.	Carrot grass	Partiniyam	<i>Parthenium hysterophorus</i>	NE
21.	Mountain knotgrass	Thengaipoo kirai	<i>Aerva lanata</i>	M
22.	Bindii	Nerunchi	<i>Tribulus terrestris</i>	M
23.	Fish poison	Kolinch	<i>Tephrosia purpurea</i>	M
24.	Tomato	Thakkali	<i>Solanum lycopersicum</i>	EM
25.	False daisy	Karisalankanni	<i>Eclipta alba</i>	M
26.	Chilli	Milakai	<i>Capsicum annum</i>	EM
27.	Red Spiderling	Mukirattai	<i>Boerhavia diffusa</i>	M
28.	Aloe	Katrzhai	<i>Aloe vera</i>	M
29.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	M
<b>Climber/ Creeper</b>				
1.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	M
2.	Wild bitter	Pavarkai	<i>Momordica charantia</i>	EM
3.	Ivy gourd	Kovai	<i>Coccinia grandis</i>	M
4.	Bottle Guard	Sorakkai	<i>Lagenaria siceraria</i>	EM
5.	Ground Spurge	Sithrapaalavi	<i>Euphorbia prostrata</i>	EM
<b>Grass</b>				
1.	Jungle rice	Kuthirai vaalKattu arusi	<i>Echinochloa colona</i>	NE
2.	Mauritian Grass	Moongil pul	<i>Apluda mutica</i>	NE
3.	Needle Grass	Thodappam	<i>Aristida adscensionis</i>	E
4.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	E
5.	Windmill grass	Chevvarakupul	<i>Chloris barbata</i>	NE

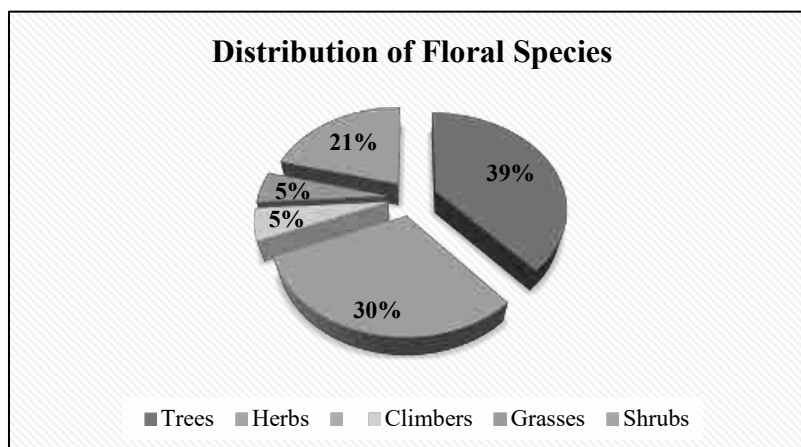
**Sources:** Species observation in the field study and secondary data

### 3.5.6. Flora Composition in the Buffer Zone

Similar habitats may be found in the buffer area as well, although there is a wider variety of plants there than in the core zone area. The proposed project site there are 96 species in the buffer zone study area in total, based on records. The floral (96) varieties among them Trees 37, Herbs 29, Shrubs 20, Climbers/ Creepers 5, Grasses 5 were identified. The result of the buffer zone of flora studies shows that Fabaceae and Cucurbitaceous, Euphorbiaceae is the main dominating species in the study area mentioned in Table No.3.54. There are no impacts due to this mining activity. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. Apart from the proposed project area, there is agricultural land. Horticulture and agricultural land are untouched. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. A list of floral species has been prepared based on primary survey (site observations) and discussion with local people. The total number of different plant life forms under trees, shrubs, herbs, and climbers is shown in Table 3.55 and their % distribution is shown in Figure 3.35.

**Table 3.55: Number of floral life forms in the Study Area**

S. No	Plant Life Form	Number of Species
1	Trees	37
2	Shrubs	20
3	Herbs	29
4	Climber/Creepers	5
6	Grasses	5
<b>Total No. of Species</b>		<b>96</b>



**Fig No. 3.35: Diagram showing % distribution of floral life form**

#### 3.5.6.1. Major Agricultural Crops

Tiruppur district though an industrial district plays important role in Agriculture also. The food production required to be enhanced to provide food and nutritional security to the growing district population. In Tiruppur more than 80% of the farmers belong to small and marginal category and they play a key role in overall development in Agriculture. The total area of cultivation is around 2,28,556 hectares, mainly food and commercial crops. The chief food crops are paddy, millets and pulses. The non-food or commercial crops in the district are cotton, oil seeds and coconut. Details of the major crops are given in Table No: 3.56.

**Table No: 3.56. Major crops in Tiruppur District**

S.No	Major crops	Scientific name	Families
1	Paddy	<i>Oryza sativa</i>	Grasses
2	Sorghum	<i>Sorghum bicolor</i>	Grasses
3	Maize	<i>Zea mays</i>	Grasses

(Source: Agriculture Contingency Plan– Tiruppur-2013)

**3.5.6.2. Horticulture**

Major horticulture crops cultivated in this district are fruits crops like mango, banana, aonla, sapota and papaya, vegetables like bhendi, tomato, brinjal, onion, tapioca, moringa, spices and condiments like chillies and turmeric, plantation crops like cocoa, flower crops like jasmine, tube rose, marigold, cock's comb and medicinal plants like gloriosa and coleus. Details of major field crops and horticulture in Tiruppur district is given in Table No: 3.57.

**Table No: 3.57. Major Field crops & horticulture in Tiruppur District.**

Sl.No	Common Name	Scientific Name	Family
<b>Major Horticultural Crops</b>			
1	Banana	<i>Musa</i>	Musaceae
2	Mango	<i>Mangifera indica</i>	Anacardiaceae
3	Jack	<i>Artocarpus heterophyllus</i>	Mulberry
4	Guava	<i>Psidium guajava</i>	Myrtle
5	Sapota	<i>Manilkara zapota</i>	Sapotaceae
6	Lemon	<i>Citrus × limon</i>	Rutaceae
<b>Vegetables</b>			
7	Onion	<i>Allium cepa</i>	Amaryllidaceae
8	Tapioca	<i>Manihot esculenta</i>	Spurges
9	Brinjal	<i>Solanum melongena</i>	Nightshade
10	Tomato	<i>Solanum lycopersicum</i>	Nightshade
11	Gourds	<i>Lagenaria siceraria</i>	Cucurbits
12	Bhendi	<i>Abelmoschus esculentus</i>	Mallows
13	Moringa	<i>Moringa oleifera</i>	Moringaceae
<b>Medicinal and Aromatic Plants</b>			
14	Gloriosa superba	<i>Colchicaceae</i>	Colchicaceae
15	Coleus	<i>Plectranthus scutellarioides</i>	Mints
<b>Flowers</b>			
16	Jasmine	<i>Jasminum</i>	Jasminaceae
17	Crossandra	<i>Crossandra infundibuliformis</i>	
18	Crysanthimum	<i>Asteraceae</i>	Asteraceae
19	Rose & Jathi	<i>Rosa</i>	Rosaceae
20	Tuberose	<i>Polianthes tuberosa</i>	Asparagus

<b>Spices and Condiments</b>			
21	Chillies	<i>Capsicum frutescens</i>	Solanaceae
22	Turmeric	<i>Curcuma longa</i>	Zingiberaceae
23	Tamarind	<i>Tamarindus indica</i>	Legumes
24	Curry leaf	<i>Murraya koenigii</i>	Rutaceae
<b>Plantation Crops</b>			
25	Cashew	<i>Anacardium occidentale</i>	Cashews
26	Cocoa	<i>Theobroma cacao</i>	Mallows

(Source: Statistical handbook of Tamil Nadu-2013)

### 3.5.6.3. of Irrigation

Irrigation is the artificial application of water to the soil for normal growth of plants. Water is an important determinant factor for production of crops in agriculture sector. Intensive and extensive cultivation of land depends mainly on the availability of water. Medium and minor irrigation schemes are implemented in the state for augmenting the water supply for agriculture. The various sources of irrigation are canals, tanks, tube wells, ordinary wells, springs and channels. The Following Table No: 3.58. Shows the area irrigated in Tiruppur District.

**Table No: 3.58. Area irrigated in the district**

S.No	Irrigation	Area ('000 ha)
1	Net irrigated area	119.3
2	Gross irrigated area	123.1
3	Rain fed area	72.9

(Source: Statistical handbook of Tamil Nadu-2013)

Dug wells are the major source of water for irrigation in Tiruppur district, accounting for about 59.97 percent of the total area irrigated in this district. Tube wells accounting for about 9.48 percent of the total area irrigated in this district. Of the net area irrigated, the canal irrigated area is only 29.45 percent. The area irrigated under tank is 1.10 percent.

(Source: Statistical handbook of Tamil Nadu-2013)

### 3.5.7. The vegetation in the RF / PF areas, ecologically sensitive areas

There are neither reserved (RF) nor protected (PF) forests either in the mine lease area or in the core zone. A small Uthiyur R.F located about 1.5km on the Northwest side. Thus, no forest land is involved in any manner. Hence, no certificate from the Forest department is required. There are no impacts due to this mining activity.

There are no protected or ecologically sensitive areas such as National parks or Important Bird Areas (IBAs), or Wetlands or migratory routes of fauna or water bodies or human settlements within the proposed mine lease area. There are no Biosphere reserves or wildlife sanctuaries or National parks or Important Bird Areas (IBAs), or migratory routes of fauna. Thus, the area under study (Mine lease area and the 10 Km buffer zone) is not ecologically sensitive. It is away from the proposed project site. There are neither forests nor forest dwellers

nor forest-dependent communities in the mine lease area. There shall be no forest-impacted families (PF) or people (PP). Thus, the rights of Traditional Forest Dwellers will not be compromised on account of the project.

### 3.6. Fauna

The faunal survey has been carried out as per the methodology cited and listed out Mammals, birds, Reptiles, Amphibians, and Butterflies. All the listed species were compared with the Red Data Book and the Indian Wildlife Protection Act, 1972. There are no rare, endangered, threatened (RET), and endemic species present in the core area.

#### 3.6.1. Fauna Composition in the Core Zone

A total of 13 varieties of species were observed in the Core zone of Muthalipalayam Village, Rough stone and gravel quarry (Table No.3.59) among them numbers of Insects 3 (23%), Reptiles 2 (15%), Mammals 1 (8%) and Avian 7 (54%). None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and six species are under schedule IV according to the Indian wild life Act 1972. A total of 7 species of bird were sighted in the mining lease area.

There are no critically endangered, endangered, vulnerable and endemic species were observed. Details of fauna in core zone with the scientific name were mentioned in Table No. 3.59.

**Table No: 3.59. Fauna in the Core zone of Muthalipalayam Village, Rough stone and Gravel quarry, Kangayam Taluk, Tiruppur District**

Sl. No	Common name/English Name	Scientific Name	Schedule list wildlife Protection act 1972
<b>Insects</b>			
1.	Mottled emigrant	Catopsilia pyranthe	NL
2.	Common Tiger	Danaus genutia	NL
3.	Red-veined darter	Sympetrum fonscolombii	NL
<b>Reptiles</b>			
1.	Garden lizard	Calotes versicolor	Schedule IV
2.	Common skink	Mabuya carinatus	Schedule IV
<b>Mammals</b>			
1.	Common rat	Rattus rattus	Schedule IV
<b>Aves</b>			
1.	Common myna	Acridotheres tristis	Schedule IV
2.	House crow	Corvus splendens	Schedule IV
3.	Common quail	Coturnix coturnix	Schedule IV
4.	Koel	Eudynamys	Schedule IV
5.	Cattle egret	Bubulcus ibis	Schedule IV
6.	Asian green bee-eater	Merops orientalis	Schedule IV
7.	Black drongo	Dicurus macrocercus	Schedule IV

(Sources: Species observation in the field study)



### 3.6.2. Fauna Composition in the Buffer Zone

As animals, especially vertebrates move from place to place in search of food, shelter, mate or other biological needs, separate lists for core and buffer areas are not feasible however, a separate list of fauna pertaining to core and buffer zone are listed separately. Though there is no reserved forests in the buffer zone. As such there are no chances of occurrence of any rare or endangered or endemic or threatened (REET) species within the core or buffer area.

A small Uthiyur R.F located about 1.5km on the Northwest side. There are no Sanctuaries, National Parks, Tiger Reserve or Biosphere reserves or Elephant Corridor or other protected areas within 10 km radius of from the core area. It is evident from the available records, reports, and circumstantial evidence that the entire study area including the core and buffer areas were free from any endangered animals. There were no resident birds other than common bird species such as Asian Koel, House crow, Black drangos, etc.

The list of Mammals (\*directly sighted animals & Secondary data) is given in table No.3.60. The list of bird species recorded during the field survey and literature from the study area are given in Table 3.61. The list of reptilian species recorded during the field survey and literature from the study area is given in Table 3.62. The list of insect species recorded during the field survey and literature from the study area are given in Table 3.63. The list of Butterflies species recorded during the field survey and literature from the study area are given in Table 3.64. It is apparent from the list that none of the species either spotted or reported is included in Schedule I of the Wildlife Protection Act. Similarly, none of them comes under the REET category.

Taxonomically a total of 54 species recorded were from the buffer zone area. Based on habitat classification the majority of species were birds 25, followed by Butterflies 10, Reptiles 6, Insects 5, Mammals 4, and Amphibians 4. There are two Schedule II species, two species are under the schedule III and forty three species are under Schedule IV according to the Indian Wildlife Act 1972. A total of 25 species of bird were sighted in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed. There are no impacts on nearby fauna species.

Dominant species are mostly birds, butterflies, and insects, and four amphibian was observed during the extensive field visit *Sphaerotheca breviceps*, *Euphlyctis hexadactylus*, *Bufo melanostictus*, etc. There is no Schedule I Species in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

**Table 3.60. List of Fauna & Their Conservation Status,  
Mammals: (\*directly sighted animals & Secondary data)**

SI. No	Common Name/English Name	Scientific Name	Schedule list wildlife Protection act 1972
1.	Indian palm squirrel	<i>Funambulus palmarum</i>	Schedule IV
2.	Indian Field Mouse	<i>Mus booduga</i>	Schedule IV
3.	Asian Small Mongoose	<i>Herpestes javanicus</i>	Schedule (Part II)
4.	Brown rat	<i>Rattus norwegicus</i>	Schedule IV

**Table 3.61. Listed birds**

SI. No	Common Name/English Name	Scientific Name	Schedule list wildlife Protection act 1972
1.	Jungle babbler	<i>Turdoides striata</i>	Schedule IV
2.	Indian robin	<i>Saxicoloides fulicatus</i>	Schedule IV
3.	Asian Koel	<i>Eudynamys</i>	Schedule IV
4.	Cattle egret	<i>Bubulcus ibis</i>	Schedule IV
5.	Rock pigeon	<i>Columbidae</i>	Schedule IV
6.	Common myna	<i>Acridotheres tristis</i>	Schedule IV
7.	House crow	<i>Corvus splendens</i>	Schedule V
8.	Red Vented Bulbul	<i>Pycnonotus cafer</i>	Schedule IV
9.	Small Bee Eater	<i>Merops orientalis</i>	Schedule IV
10.	Purple sunbird	<i>Cinnyris asiaticus</i>	Schedule IV
11.	House sparrow	<i>Passer domesticus</i>	Schedule IV
12.	Small blue Kingfisher	<i>Alcedo atthis</i>	Schedule IV
13.	Rose-ringed parakeet	<i>Psittacula krameri</i>	Schedule IV
14.	Common quail	<i>Coturnix coturnix</i>	Schedule IV
15.	Pond herons	<i>Ardeola grayii</i>	Schedule IV
16.	Black drongo	<i>Dicrurus macrocercus</i>	Schedule IV
17.	Woodpecker bird	<i>Picidae</i>	Schedule IV
18.	Two-tailed Sparrow	<i>Dicrurus macrocercus</i>	Schedule IV
19.	Grey drongo	<i>Dicrurus longicaudatus</i>	Schedule IV
20.	Grey Francolin	<i>Francolinus pondicerianus</i>	Schedule IV
21.	Wood Sandpiper	<i>Tringa glareola</i>	Schedule IV
22.	Indian Roller	<i>Coracias benghalensis</i>	Schedule IV
23.	Common Swallow	<i>Hirundo rustica</i>	Schedule IV
24.	Purple Rumped Sunbird	<i>Leptocoma zeylonica</i>	Schedule IV
25.	Purple Sunbird	<i>Cinnyris asiaticus</i>	NL

Reference: Ali, S. (2002). The Book of Indian Birds (13th revised edition). Oxford University Press, New Delhi. 326pp.

**Table 3.62. List of Reptiles either spotted or reported from the study area.**

(\*indicates direct observations & Secondary data)

SI. No	Common Name/English Name	Scientific Name	Schedule list wildlife Protection act 1972
1.	Oriental garden lizard	<i>Calotes versicolor</i>	III
2.	House lizards	<i>Hemidactylus flaviviridis</i>	Schedule IV
3.	Indian cobra	<i>Naja naja</i>	Sch II (Part II)
4.	Green vine snake	<i>Ahaetulla nasuta</i>	Schedule IV
5.	Rat snake	<i>Ptyas mucosa</i>	III

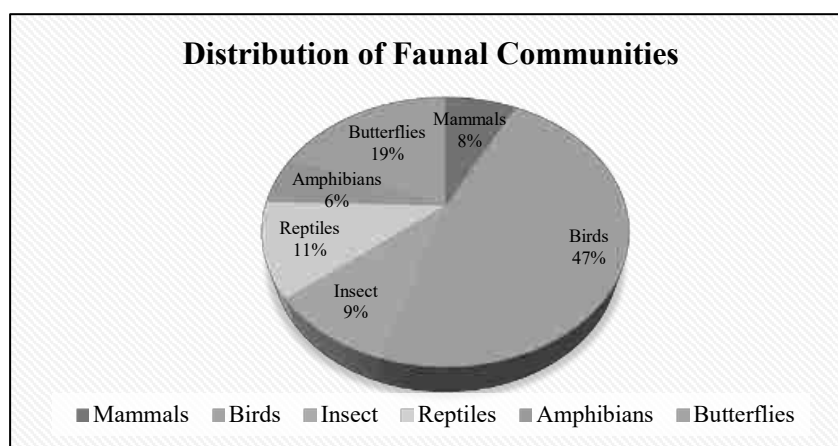
6.	Common skink	<i>Mabuya carinatus</i>	NL
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**Table 3.63. List of insects either spotted or reported from the study area**

SI. No	Common Name/English Name	Scientific Name	Schedule list wildlife Protection act 1972
1.	Indian honey bee	<i>Apis cerana</i>	-
2.	Termite	<i>Hamitermes silvestri</i>	NE
3.	Grasshopper	<i>Hieroglyphus sp</i>	NL
4.	Ant	<i>Camponotus Vicinus</i>	NL
5.	Dragonfly	<i>Ceratogomphus pictus</i>	-

**Table.3.64. List of Butterflies reported from the study area**

SI. No	Common Name/English Name	Scientific Name	Schedule
1.	Common Mormon	<i>Papilio polytes</i>	Schedule IV
2.	Common rose	<i>Pachlioptaaristolochiaee</i>	Schedule IV
3.	Spotless grass yellow	<i>Eurema laeta</i>	Schedule IV
4.	Common Tiger	<i>Danaus genutia</i>	Schedule IV
5.	Common emigrant	<i>Catopsiliapomona</i>	Schedule IV
6.	Crimson tip	<i>Colotisdanae</i>	Schedule IV
7.	Common Indian crow	<i>Euploea core</i>	Schedule IV
8.	Lime Butterfly	<i>Papilio demoleus</i>	Schedule IV
9.	Yellow Pansy	<i>Junonia hierta</i>	Schedule IV
10.	Chocolate Pansy	<i>Junonia iphita</i>	Schedule IV

**Fig No. 3.36: Diagram showing % distribution of faunal life forms**

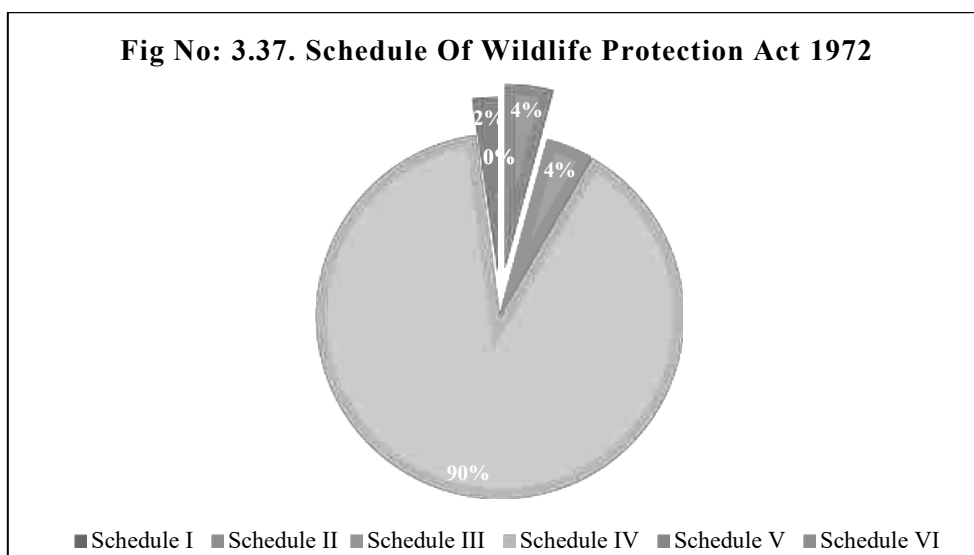
Livestock like cattle, buffalo, goat, poultry, duck and pig are reared for dairy products, meat, and egg and for agriculture purpose. Majority of cattle and buffalo are of local variety. Backyard poultry farms are mostly common in this area; however, some commercial poultry farms are also recorded in the study area. The study area

is marked with moderate population of flora and fauna. With reference to the Wildlife Protection Act 1972 total number of wildlife tabulated in this study can be characterized as given in the Table 3.65.

**Table No: 3.65 Characterization of Fauna in the Study Area (As Per W.P Act, 1972)**

S.No	Schedule of Wildlife Protection Act 1972	Noof species	Remark
1.	Schedule I	0	-
2.	Schedule II	2	-
3.	Schedule III	2	-
4.	Schedule IV	43	-
5.	Schedule V	1	-
6.	Schedule VI	0	-

**Fig No: 3.37. Schedule Of Wildlife Protection Act 1972**



**Table 3.66: Description of Flora & Fauna**

S.No	Type of Species	Name	Local Name
<b>Flora</b>			
1.	Endangered species	None	None
2.	Threatened species	None	None
3.	Near Threatened species	None	None
4.	Vulnerable species	None	None
<b>Fauna</b>			
5.	Endangered species	None	None
6.	Threatened species	None	None
7.	Near Threatened species	None	None
8.	Vulnerable species	None	None
9.	Migratory Corridors & Flight Paths	No corridors & flight paths	-
10.	Breeding & Spawning grounds	None	-

A comprehensive Central Legislation namely Wild Life (Protection) Act was enforced in 1972 to provide protection to wild animals. Schedule-I of this act contains the list of rare and endangered species, which are completely protected throughout the country. The list of wild animals and their conservation status as per Wild Life Act (1972) presented in Table 3.66 are the species recorded/reported from the study area, out of which 4 species belongs to schedule-II, 2 species belong to schedule-III, 1 species belongs to schedule-V and rest of the species belongs to schedule-IV of Wildlife protection Act, 1972.

### 3.6.3. Aquatic Ecology

Mining activities will not have an impact on aquatic ecosystems because no effluent discharge from the Rough stone and gravel quarry is planned. There are no natural perennial surface water bodies, such as marshes, rivers, streams, lakes, or agricultural sites, inside the mining lease area. The study region contains a few seasonal bodies of water. There is no aquatic flora and, aquatic fauna. Hence, it does not harbour any significant aquatic life. Therefore, the project is not likely to affect the aquatic ecology. Aquatic weeds are found to be growing everywhere in 10 km radius area, in every water bog, pond, etc. *Typha angustata* can be found growing all along the drains of villages, small water-logged depressions, and agricultural fields lacking water but containing enough moisture to support its growth. And where water is present, *Eichhornia crassipes* has taken its roots and covers the entire water surface by its sprawl and invasion.

#### 3.6.3.1. Objectives of Aquatic Studies

- Generating data through actual field collection in these locations over the study period.
- Impacts on aquatic fauna/flora
- Consulted with locals to obtain knowledge about aquatic flora and animals.

#### 3.6.3.2. Macrophytes

The macrophytes observed within the study area are tabulated in Table 3.64

**Table No.3.64 Description of Macrophytes**

Sl.No	Scientific name	Common Name	Vernacular Name (Tamil)	IUCN Red List of Threatened Species
1.	<i>Eichornia crassipe</i>	Water hyacinth	Agayatamarai	NA
2.	<i>Aponogeton natans</i>	Floating lace plant	Kottikizhnagu	NA
3.	<i>Nymphaea nouchali</i>	Blue water lily	Nellambal	LC
4.	<i>Typha angustifolia</i>	Sambu	Narrowleaf cattail	LC
5.	<i>Carex cruciata</i>	Cross Grass	Koraipullu	NA
6.	<i>Cyperus exaltatus</i>	Tall Flat Sedge	Koraikizhangu	LC

Sources: Species observation in the field study

### 3.6.3.3. Aquatic Faunal Diversity

Amphibian species like the common Indian Burrowing frog, and Green pond frog, and etc. were sighted near the water bodies located in the study area.

**Table no. 3.68. Amphibians Observed/Recorded from the Study Area**

SI. No	Common Name/English Name	Scientific Name	Schedule list wildlife Protection act 1972
1.	Indian Burrowing frog	<i>Sphaerotheca breviceps</i>	Schedule IV
2.	Green pond frog	<i>Euphlyctis hexadactylus</i>	Schedule IV
3.	Skipper	<i>Euphlyctiscynophlyctis</i>	Schedule IV

### 3.6.3.4. Other Aquatic Fauna

### 3.6.3.5. Fishes

The study area has low aquatic diversity, with few types of fish living. The species of fish reported during the primary visit are Rohu, Catla, Catfish, etc. Species of fish reported in the study area are given in Table No 3.69.

**Table 3.69. Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data**

S.No	Common name	Scientific name	Family
1.	Ponthia	Puntius sophore	Cyprinidae
2.	Catla	Catla Catla	Cyprinidae
3.	Silver scabbardfish	Lepidopus caudatus	Trichiuridae
4.	Catfish	Siluriformes	-
5.	Rohu	Labeo rohita	Cyprinidae

## 3.7. Findings/Results

The assessment was carried out during the post monsoon season. The inspection day was quite alright with respectable weather. The details of the flora and fauna observed are given below.

### Records of threatened species in the area

No threatened species were observed

### Endangered Species as per Wildlife (Protection) Act

No Endangered fauna was recorded in the project area.

### Endemic Species of the Project areas

No endemic species were observed in the project area.

### Migratory species of the Project areas

No migratory fauna observed in project area.

### Migratory corridors and Flight paths

No migratory corridors and Flight paths were observed in project area.

### Breeding and spawning grounds

No breeding and spawning grounds were earmarked for the wildlife fauna in project area.

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There are no critically endangered, endangered, vulnerable and endemic species were observed. As the rainfall in the area is scanty and as no toxic wastes are produced or discharged on account of mining, the proposed mining activity is not going to have any additional and adverse impacts on these RET species. There are no ecologically sensitive areas or protected areas within the 10 Km radius. Hence no specific conservation for conservation of any RET species or Wildlife is envisaged.

A small Uthiyur R.F located about 705.48km on the North side. There are no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar sites, Tiger/Elephant Reserves/ (existing as well as proposed) within 10 km of the mine lease area. There are no protected forests within the project area. Hence submission of clearance from the National Board of Wildlife does not arise.

There is no endangered, endemic and RET Species. There is no Schedule I species in study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] The proposed project is not going to have any direct or indirect adverse impact on the species mentioned above.

### **3.8. Conclusion**

The observations and assessment of the overall ecological scenario involve details such as classification of Biogeographic zone, eco-region, habitat types and land cover, distances from natural habitats, vegetation/forest types, and sensitive ecological habitats such as Wetlands sites, Important Bird areas, migration corridors of important wildlife etc. Such baseline information provides better understanding of the situation and overall ecological importance of the area. This baseline information viewed against proposed project activities help in predicting their impacts on the wildlife and their habitats in the region. Data collected and information gathered from secondary literature on flora, fauna, protected area, natural habitats, and wildlife species etc., and consulted and discussed with local people, from the villages, herders and farmers who inhabit close to the proposed project area

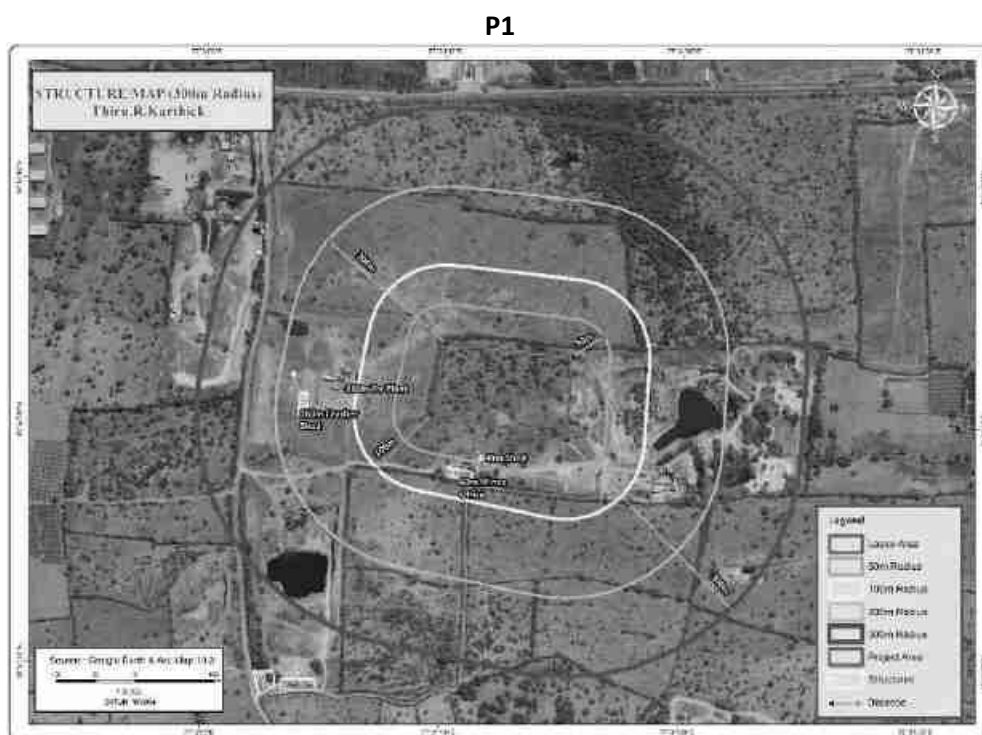
### 3.6 SOCIO ECONOMIC ENVIRONMENT

Socio-economic study is an essential part of environmental study. It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature like temples, historical monuments etc., at the baseline level. This will help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project. It is expected that the Socio-Economic Status of the area will substantially improve because of this proposed project. As the proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area and, thus, improve their standard of living.

#### STRUCTURE STUDY IN 300m RADIUS

There are 4-P1 & 7-P2 structures within the radius of 300m from the project site.

**FIGURE 3.29: STRUCTURE MAP 300m RADIUS**

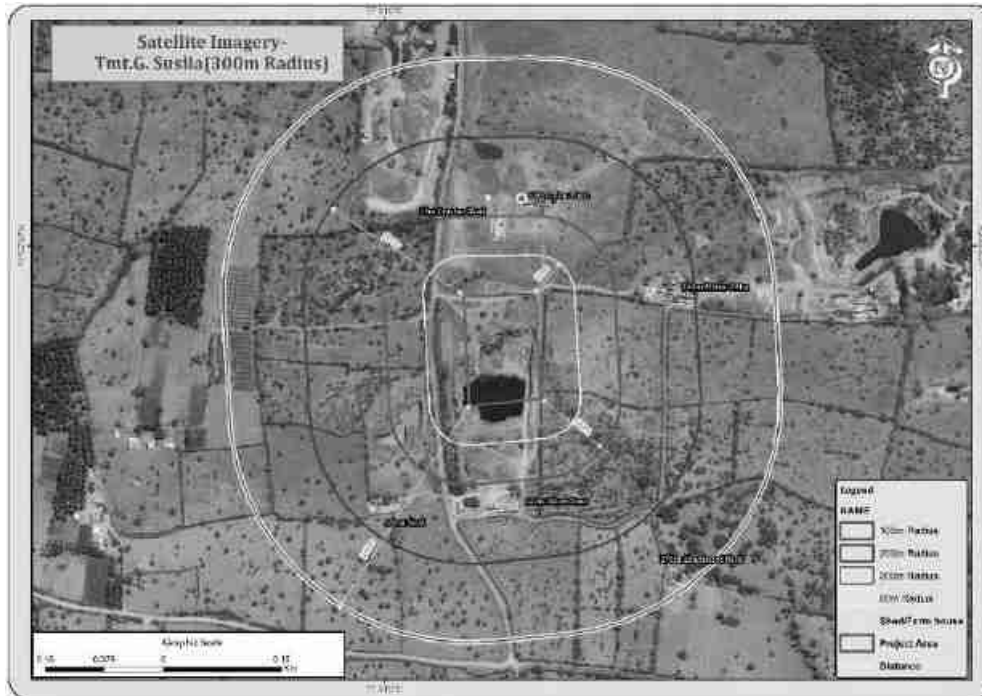


**Enumeration of Structures from 0 - 300m Radius**

Structure Numbers	Distance & Direction from the project site	Structure Details and Usage Purpose	Type of Structure Structures (Kutchu/ Brick/ Cement/ RCC/ Framed Structures)	No.of Occupants	Structure belongs to owner (Yes/No)	Remarks
1	40m – South	Shed	Sheet Structure	-	Yes	Storage Purpose
2	60m- South	Mines Office	Brick Structure	-	Yes	Used to store Documents
3	110m - West	Tar Plant	Frames Structure	-	Yes	Used to produce Tar
4	160m – West	Crusher Shed	Sheet Structure	-	Yes	Storage Purpose



## P2



Enumeration of Structures from 0 - 300m Radius

Structure Numbers	Distance & Direction from the project site	Structure Details and Usage Purpose	Type of Structure Structures (Kutchha/ Brick/ Cement/ RCC/ Framed Structures)	No.of Occupants	Structure belongs to owner (Yes/No)	Remarks
1	70m – North	Crusher Shed	Sheet Structure	-	No	Storage Purpose
2	120m – North	Tar Plant	Frames Structure	-	No	Used to produce Tar
3	120m – South	Mines Shed	Sheet Structure	-	Yes	Storage Purpose
4	140m – East	Mines Office	Brick Structure	-	No	Used to store Documents
5	160m – SW	Shed	Sheet Structure	-	Yes	Storage Purpose
6	270m – SE	Abandoned Shed	Sheet Structure	-	Yes	Abandoned
7	160m – West	Crusher Shed	Sheet Structure	-	Yes	Storage Purpose

### 3.6.1 Objectives of the Study

The objectives of the socio-economic study are as follows:

- To study the socio-economic status of the people living in the study area.
- To assess the impact of the project on Quality of life of the people in the study area.
- To recommend Community Development measures needs to be taken up in the study Area.

### 3.6.2 Scope of Work

- To study the Socio-economic Environment of the area from the secondary sources;
- Data Collection & Analysis
- Prediction of project impact
- Mitigation Measures

### 3.6.3 District Profile

Tirupur is a municipal corporation in the Indian state of Tamil Nadu. It is situated as the capital of the newly declared Tirupur district. The city excels in the ready-made garment industry. Tirupur, the seventh largest city in Tamil Nadu,

is a rapidly developing industrial city. Around 20 lakh people live in and around Tirupur. It is one of the major cities in Tamil Nadu. It is also the 7th largest city in Tamil Nadu.

### 3.6.4 Study area:

#### Mudalipalayam Village-Population

Mudalipalayam is a village situated in Kangeyam taluka of Tiruppur district in Tamil Nadu. As per the Population Census 2011, there are a total of 749 families residing in the village Mudalipalayam. The total population of Mudalipalayam is 2,141 out of which 1,100 are males and 1,041 are females thus the Average Sex Ratio of Mudalipalayam is 946.

#### Sex Ratio of Mudalipalayam Village -Census 2011

In Mudalipalayam village population of children with age 0-6 is 114 which makes up 5.32 % of total population of village. Average Sex Ratio of Mudalipalayam village is 946 which is lower than Tamil Nadu state average of 996. Child Sex Ratio for the Mudalipalayam as per census is 932, lower than Tamil Nadu average of 943.

**TABLE 3.32: DEMOGRAPHIC CHARACTERISTICS – MUDALIPALAYAM VILLAGE**

Particulars	Total	Male	Female
Total No. of Houses	749	-	-
Population	2,141	1,100	1,041
Child (0-6)	114	59	55
Schedule Caste	516	273	243
Schedule Tribe	0	0	0
Literacy	64.08 %	75.22 %	52.33 %
Total Workers	1,217	732	485
Main Worker	1,145	-	-
Marginal Worker	72	45	27

Source: <https://www.census2011.co.in/data/village/644630-mudalipalayam-tamil-nadu.html>

#### Literacy of Mudalipalayam Village

Mudalipalayam village has lower literacy rate compared to Tamil Nadu. In 2011, literacy rate of Mudalipalayam village was 64.08 % compared to 80.09 % of Tamil Nadu. In Mudalipalayam Male literacy stands at 75.22 % while female literacy rate was 52.33 %.

#### Worker's profile of Mudalipalayam Village

In Mudalipalayam village out of total population, 1217 were engaged in work activities. 94.08 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 5.92 % were involved in Marginal activity providing livelihood for less than 6 months. Of 1217 workers engaged in Main Work, 391 were cultivators (owner or co-owner) while 440 were Agricultural labourer.

**TABLE 3.34: POPULATION DATA OF STUDY AREA**

Sno	Name	TRU	No House Hold	Total Population	Male Population	Female Population	Child Population	Male Population	Female Population	SC Population	ST Population	Total Literacy	Male Literacy	Female Literacy
1	Thammareddipalayam	Rural	324	1001	479	522	72	37	35	301	0	637	363	274
2	Maravapalayam	Rural	852	2679	1328	1351	219	124	95	830	0	1695	955	740
3	Vadasinnaripalayam	Rural	628	1952	983	969	107	59	48	202	0	1402	774	628
4	Aratholuvu	Rural	382	1063	508	555	70	26	44	287	0	540	303	237
5	<b>Mudalipalayam</b>	Rural	749	2141	1100	1041	114	59	55	516	0	1299	783	516
6	Uthiyur	Rural	976	3160	1575	1585	256	130	126	993	0	1993	1130	863
7	Kurukkapalayam	Rural	400	1216	639	577	82	45	37	346	0	729	440	289
8	Nelali	Rural	2177	7181	3672	3509	556	275	281	1832	24	4339	2504	1835
9	Vattamalai	Rural	572	1804	911	893	85	52	33	130	0	1027	578	449
	Total		7060	22197	11195	11002	1561	807	754	5437	24	13661	7830	5831

Source: www.censusindia.gov.in - Tamilnadu Census of India – 2011

**TABLE 3.35: WORKERS PROFILE OF STUDY AREA**

Sno	Name	Total Workers Population	Male Workers	Female Workers	Total Main Workers	Main Workers Male	Main Workers Female	Main Cultivation Workers	Main Agriculture Workers	Main Household workers	Main Other Workers	Non-Worker Population
1	Thammareddipalayam	481	302	179	476	300	176	141	241	4	90	520
2	Maravapalayam	1665	897	768	1590	856	734	480	707	30	373	1014
3	Vadasinnaripalayam	1382	758	624	1028	589	439	476	376	26	150	570
4	Aratholuvu	634	373	261	522	330	192	97	215	7	203	429
5	<b>Mudalipalayam</b>	1217	732	485	1145	687	458	391	440	27	287	924
6	Uthiyur	1833	1052	781	1791	1031	760	536	606	35	614	1327
7	Kurukkapalayam	804	443	361	492	281	211	212	238	2	40	412
8	Nelali	4321	2449	1872	3386	1929	1457	1330	985	51	1020	2860
9	Vattamalai	1187	649	538	1135	624	511	186	544	14	391	617
	<b>Total</b>	<b>13524</b>	<b>7655</b>	<b>5869</b>	<b>11565</b>	<b>6627</b>	<b>4938</b>	<b>3849</b>	<b>4352</b>	<b>196</b>	<b>3168</b>	<b>8673</b>

Source: www.censusindia.gov.in – Tamil Nadu Census of India – 2011

**TABLE 3.36: EDUCATIONAL FACILITIES IN THE STUDY AREA**

SI	Village Name	PPS		PS		MS		SS		SSS		DC		EC		MC		MI		PT		VTS		SSD	
		G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P
1	Thammareddipalayam	1	2	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	Maravapalayam	1	2	1	2	1	2	1	2	2	2	2	2	2	1	2	1	2	2	2	2	2	2	2	2
3	Vadasinnaripalayam	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	Aratholuvu	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	<b>Mudalipalayam</b>	1	2	2	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	Uthiyur	1	2	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	Kurukkapalayam	1	1	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8	Nelali	1	2	1	1	1	1	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2
9	Vattamalai	1	1	1	2	1	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Abbreviations: PPS-Pre Primary School; SSS-Senior Secondary School; DC-Degree School; PT-Polytechnic; PS-Primary School; G-Government; EC-Engineering College; VTS-Vocational School /ITI; MS-Middle School; P-Private; MC-Medical College; SSD-Special School For Disabled; SS-Secondary School; MI-Management College/Institute;

Note – 1 - Available within the village; 2 - Not available

**TABLE 3.37: MEDICAL FACILITIES IN THE STUDY AREA**

Sl. No.	Village Name	CHC	PHC	PHSC	MCW	TBC	HA	HAM	D	VH	MHC	FWC	NGM-I/O
1	Thammareddipalayam	0	1	1	0	0	0	0	0	0	0	0	b
2	Maravapalayam	0	1	1	0	0	0	0	0	0	0	0	b
3	Vadasinnaripalayam	0	0	1	0	1	0	0	0	0	0	1	b
4	Aratholuvu	0	1	0	0	0	0	0	0	0	0	0	c
5	<b>Mudalipalayam</b>	0	1	1	0	0	0	0	0	0	0	0	a
6	Uthiyur	0	0	1	0	0	0	0	0	0	0	0	a
7	Kurukkapalayam	0	1	1	0	0	0	0	0	0	0	0	c
8	Nelali	0	0	1	0	0	0	0	0	0	0	0	b
9	Vattamalai	0	1	0	0	0	0	0	0	0	0	0	b

Abbreviations: CHC-Community Health Centre; TBC-TB Clinic; VH- Vetrernity Hospital; PHC-Primary Health Centre; HA-Aallopathic Hospital; FWC-Family Welfare Centre; PHSC-Primary Health Sub Centre; HAM-Alternative Medicine Hospital; MH-Mobile Health Clinic; MCW-Maternity and Child Welfare Centre; D-Dispensary; NGM-I/O-Non Government Medical Facilities In & Out Patient

Note – 1 - Available within the village; 2 - Not available a-facility available at <5kms b-facility available at>10kms

Source: www.censusindia.gov.in - Tamilnadu Census of India – 2011

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### 3.6.6 Recommendation and Suggestion

- The main activities in the area is quarry operation and 1 No are already in the Operation. Hence starting up of new mine in this region is necessary at current scenario
- Due to the project about 47 Nos of people will benefitted directly due to employment and more than 75 Nos of people and Crushers will benefitted through this project
- As part of CER activities proponent intends to spend Rs 10 Lakhs for the improvement of School sanitation facilities, Greenbelt development and other needs.
- At the end of the life of the mine the mined-out pit will act as temporary reservoir, the collected rain water in the mine pit may utilized for the nearby agriculture lands.

#### **Apart from the following general activities will be conducted**

- Awareness program to be conducted to make the population aware to get education and a better livelihood.
- Vocational training programme can be organized to make the people self - employed, particularly for women and unemployed youth.
- On the basis of qualification and skills local community may be preferred. Long term and short-term employments can be generated.
- While developing an Action Plan, it is very important to identify the population who falls under the marginalized and vulnerable groups. So that special attention can be given to these groups with special provisions while making action plans.

### 3.6.7 Summary & Conclusion

The socio-economic study of surveyed villages gives a clear picture of its population, average household size, literacy rate and sex ratio etc. It is also found that a part of population is suffering from lack of permanent job to run their day-to-day life. Their expectation is to earn some income for their sustainability on a long-term basis. The proposed project will aim to provide preferential employment to the local people there by improving the employment opportunity in the area and in turn the social standards will improve.

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## 4. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

### 4.0 GENERAL

Environmental impacts both direct and indirect on various environmental attributes due to proposed mining activity will be created in the surrounding environment, during the operational and post-operational phases. The occurrence of mineral deposits, being site specific, their exploitation, often, does not allow for any choice except adoption of eco-friendly operation. The methods are required to be selected in such a manner, so as to maintain environmental equilibrium ensuring sustainable development.

In order to maintain the environmental commensuration with the mining operation, it is essential to undertake studies on the existing environmental scenario and assess the impact on different environmental components. This would help in formulating suitable management plans sustainable resource extraction.

Several scientific techniques and methodologies are available to predict impacts of physical environment. Mathematical models are the best tools to quantitatively describe the cause-and-effect relationships between sources of pollution and different components of environment. In cases where it is not possible to identify and validate a model for a particular situation, predictions have been arrived at based on logical reasoning / consultation / extrapolation.

The following parameters are of significance in the Environmental Impact Assessment and are being discussed in detail

- Land environment
- Soil environment
- Water Environment
- Air Environment
- Noise Environment
- Socio economic environment
- Biological Environment

Based on the baseline environmental status at the project site, the environmental factors that are likely to be affected (Impacts) are identified, quantified and assessed.

### 4.1 LAND ENVIRONMENT:

#### 4.1.2 Anticipated Impact from all Proposed Projects

- Permanent or temporary change on land use and land cover.
- Change in Topography: Topography of the ML area will change at the end of the life of the mine.
- Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations due to dust, noise and it also causes traffic hazards.
- Due to degradation of land by pitting the aesthetic environment of the core zone may be affected.
- Earthworks during the rainy season increase the potential for soil erosion and sediment laden water entering the water ways.
- If no due care is taken wash off from the exposed working area may choke the water course & can also causes the siltation of water course

#### 4.1.2.1 Common Mitigation Measures for Respective Individual Proposed Projects

- The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigative measures like phase wise development of greenbelt etc.,
- Construction of garland drains all around the quarry pits and construction of check dam at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.



- Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt.
- Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
- At conceptual stage, the land use pattern of the quarry will be changed into Greenbelt area and temporary reservoir.
- In terms of aesthetics, natural vegetation surrounding the quarry will be retained (such as in a buffer area i.e., 7.5 m safety barrier and other safety provided) so as to help minimise dust emissions.
- Proper fencing will be carried out at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle.

#### **4.1.3 Soil Environment**

#### **4.1.4 Impact on Soil Environment**

The top layer of the project site in the form of gravel formation, it will be directly loaded into tippers for the filling and levelling of low-lying areas. There is no disposal of topsoil. The excavated Rough Stone quarry will be directly loaded into dumpers to the needy customers.

There will be no disposal of waste water from the quarry operation, No discharge of toxic effluent from the proposed projects. The dust emission at working face and haul roads will be controlled by water sprinkling and plantation.

**Erosion and Sedimentation** (Removal of protective vegetation cover; Exposure of underlying soil horizons that may be less pervious, or more erodible than the surface layers; Reduced capacity of soils to absorb rainfall; Increased energy in storm-water runoff due to concentration and velocity; and Exposure of subsurface materials which are unsuitable for vegetation establishment).

#### **4.1.5 Common Mitigation Measures for Respective Individual Proposed Projects**

- Run-off diversion – Garland drains will be constructed all around the project boundary to prevent surface flows from entering the quarry works areas. And will be discharged into vegetated natural drainage lines, or as distributed flow across an area stabilised against erosion.
- Sedimentation ponds - Run-off from working areas will be routed towards sedimentation ponds. These trap sediment and reduce suspended sediment loads before runoff is discharged from the quarry site. Sedimentation ponds should be designed based on runoff, retention times, and soil characteristics. There may be a need to provide a series of sedimentation ponds to achieve the desired outcome.
- Retain vegetation – Retain existing or re-plant the vegetation at the site wherever possible.
- Monitoring and maintenance – Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season.

#### **4.1.6 Waste Dump Management**

There are no wastages anticipated in this Rough Stone quarrying operation. The entire quarried out materials will be utilized (100%).

### **4.2 Water Environment**

#### **4.2.1 Anticipated Impact on Surface and ground water**

The impact due to quarrying on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during quarrying process. The quarrying activity will not intersect ground water table as the maximum depth of the quarry in the cluster is 42m and water table is found at a depth of 58-62m BGL. The quarrying operation will be carried out well above the water table. There is no intersection of surface water bodies (Streams, Canal, Odai etc.,) in the project area. During rainy season rain water will be collected in the quarry pit and later used for greenbelt development and for the water sprinkling in the haul roads. There is no proposal for discharging of quarry pit water outside the project area.

**TABLE 4.1: WATER REQUIREMENTS**

<b>PROPOSAL – P1</b>		
Purpose	Quantity	Source
Dust Suppression	0.3KLD	From Existing bore wells from nearby area
Green Belt	1.90KLD	From Existing bore wells from nearby area
Sanitation & Drinking	0.7KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
<b>Total</b>	<b>2.0 KLD</b>	
<b>PROPOSAL – P2</b>		
Purpose	Quantity	Source
Dust Suppression	0.5KLD	From Existing bore wells from nearby area
Green Belt	0.3KLD	From Existing bore wells from nearby area
Sanitation & Drinking	0.2 KLD	From existing, bore wells and drinking water will be sourced from Approved water vendors.
<b>Total</b>	<b>1.0 KLD</b>	

\* Water for drinking purpose will be brought from approved water vendors

Source: Approved Mining Plan Pre-Feasibility Report

Total water requirement in the cluster quarries is about 3.0 KLD, the water for dust suppression and greenbelt development will be sourced from the mine pit water collected during rainy seasons, the water for domestic purpose and drinking will be sourced from the approved water vendors.

#### **4.2.2 Common Mitigation measures:**

- Garland drain, settling tank will be constructed along the proposed mining lease area. The Garland drain will be connected to settling tank and sediments will be trapped in the settling traps and only clear water will be discharged out to the natural drainage
- Rainwater will be collected in sump in the mining pits and will be allowed to store and pumped out to surface setting tank of 15 m x 10m x 3m to remove suspended solids if any. This collected water will be judiciously used for dust suppression and such sites where dust likely to be generated and for developing green belt. The proponent will collect and judiciously utilize the rainwater as part of rainwater harvesting system.
- Providing benches with inner slopes and through a system of drains and channels, allowing rain water to descent into surrounding drains, so as to minimize the effects of erosion & water logging arising out of uncontrolled descent of water.
- Reuse the water collected during storm for dust suppression and greenbelt development within the mines
- Installing interceptor traps/oil separators to remove oils and greases. Water from the tipper wash-down facility and machinery maintenance yard will pass through interceptor traps/oil separators prior to its reuse;
- Using flocculating or coagulating agents to assist in the settling of suspended solids during monsoon seasons;
- Periodic (every 6 month once) analysis of quarry pit water and ground water quality in nearby villages.
- Domestic sewage from site office & urinals/latrines provided in ML is discharged in septic tank followed by soak pits.
- Waste water discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.
- De-silting will be carried out before and immediately after the monsoon season.
- Regular monitoring (every 6 month once) and analysing the quality of water in open well, bore wells and surface water

#### **4.3 Air Environment**

The air borne particulate matter is the main air pollutant in this opencast mining. The mining operation will be carried out by jackhammer drilling (35mm dia) and Hydraulic Excavators will be utilized for excavation of Rough Stone quarry waste.

##### **4.3.1. Anticipated**

##### **Impact**

- During mining, at various stages activities such as excavation, drilling, blasting, and transportation of materials, particular matter (PM), gases such as Sulphur dioxide, oxides of Nitrogen from vehicular exhaust are the main air pollutants.
- Emissions of noxious gases due to incomplete detonation of explosive may sometimes pollute the air.
- The fugitive dust released from the mining operations may cause effect on the mine workers who are directly exposed to the fugitive dust.
- Simultaneously, the air-borne dust may travel to longer distances and settle in the villages located near the mine lease area.

#### 4.3.1.1. Modelling of Incremental Concentration from all Proposed Projects

Wind erosion of the exposed areas and the air borne particulate matter generated by quarrying operation, and transportation are mainly PM<sub>10</sub> & PM<sub>2.5</sub> and emissions of Sulphur dioxide (SO<sub>2</sub>) & Oxides of Nitrogen (NO<sub>x</sub>) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

Similarly, loading - unloading and transportation of Rough Stone quarry, wind erosion of the exposed area and movement of light vehicles causes of pollution. This leads to an impact on the ambient air environment around the project area.

Anticipated incremental concentration due to this quarrying activity and net increase in emissions due to quarrying activities within 500 meters around the project area is predicted by Open Pit Source modelling using AERMOD Software.

The impact on Air Environment is due to the mining and allied activities during Land Development phase, Mining process and Transportation. The emissions of Sulphur dioxide (SO<sub>2</sub>), Oxides of Nitrogen (NO<sub>x</sub>) due to excavation/loading equipment and vehicles plying on haul roads are marginal. Loading - unloading and transportation of Rough Stone quarry, wind erosion of the exposed area and movement of light vehicles will be the main polluting source in the mining activities releasing Particulate Matter (PM<sub>10</sub>) affecting Ambient Air of the area. Prediction of impacts on air environment has been carried out taking into consideration cumulative production three proposed quarries. Air environment and net increase in emissions by Open pit source modelling in AERMOD Software.

#### 4.3.1.2 Emission Estimation

An emissions factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant.

The general equation for emissions estimation is:

$$E = A \times EF \times (1-ER/100)$$

Where:

E = emissions;

A = activity rate;

EF = emission factor, and

ER =overall emission reduction efficiency, %

The proposed mining activity includes various activities like ground preparation, excavation, handling and transport of ore. These activities have been analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 4-2.

**TABLE 4.2: ESTIMATED EMISSION RATE FOR P1 & P2**

EMISSION ESTIMATION FOR QUARRY "P1"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM <sub>10</sub>	Drilling	Point Source	0.078292471	g/s
	Blasting	Point Source	0.000711565	g/s
	Mineral Loading	Point Source	0.041430870	g/s
	Haul Road	Line Source	0.002489953	g/s/m
	Overall Mine	Area Source	0.047514844	g/s
Estimated Emission Rate for SO <sub>2</sub>	Overall Mine	Area Source	0.000512364	g/s
Estimated Emission Rate for NO <sub>x</sub>	Overall Mine	Area Source	0.000019179	g/s

EMISSION ESTIMATION FOR QUARRY "P2"				
Estimated Emission Rate for PM <sub>10</sub>	Activity	Source type	Value	Unit
	Drilling	Point Source	0.063299193	g/s
	Blasting	Point Source	0.000245813	g/s
	Mineral Loading	Point Source	0.038433938	g/s
	Haul Road	Line Source	0.002485838	g/s/m
	Overall Mine	Area Source	0.041701094	g/s
Estimated Emission Rate for SO <sub>2</sub>	Overall Mine	Area Source	0.000239022	g/s
Estimated Emission Rate for NO <sub>x</sub>	Overall Mine	Area Source	0.000006837	g/s

#### 4.3.2 Frame work of Computation & Model details

The prediction included the impact of Excavation, Drilling, Blasting, loading and movement of vehicles during transportation and meteorological parameters such as wind speed, wind direction, temperature, rainfall, humidity and Cloud cover.

Impact was predicted over the distance of 10 km around the source to assess the impact at each receptor separately at the various locations and maximum incremental GLC value at the project site. Maximum impact of PM<sub>10</sub> was observed close to the source due to low to moderate wind speeds. Incremental value of PM<sub>10</sub> was superimposed on the base line data monitored at the proposed site to predict total GLC of PM<sub>10</sub> due to combined impacts.

#### Air Pollution Dispersion Modelling

##### Baseline Air Quality –

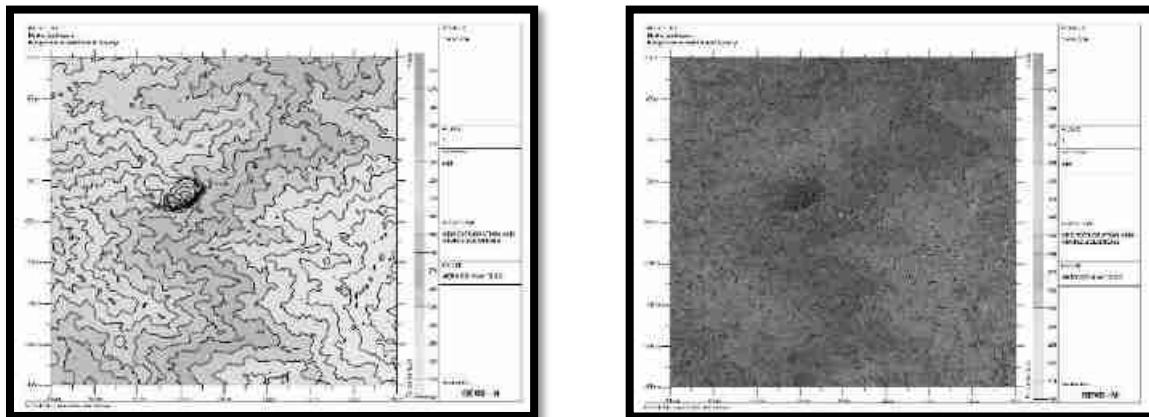
Baseline air quality has been measured at 1 location in the cluster and 6 locations within the buffer zone of the study area. The 24 - hourly average samples of particulate matters (PM<sub>10</sub> and PM<sub>2.5</sub>), SO<sub>2</sub> and NO<sub>x</sub> were measured following the National Ambient Air Quality Standards (NAAQS), 2009. Monitoring data of 7 sampling stations are given below –

##### Meteorological Data –

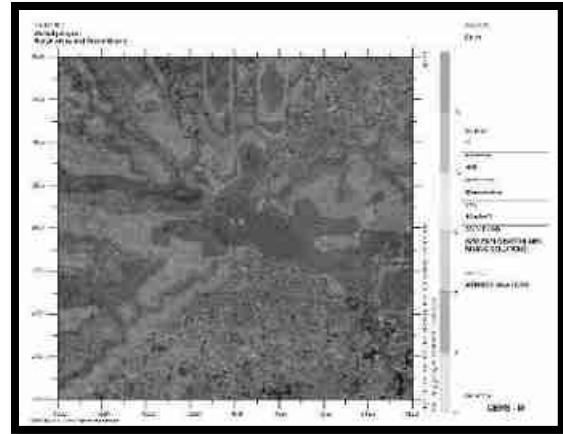
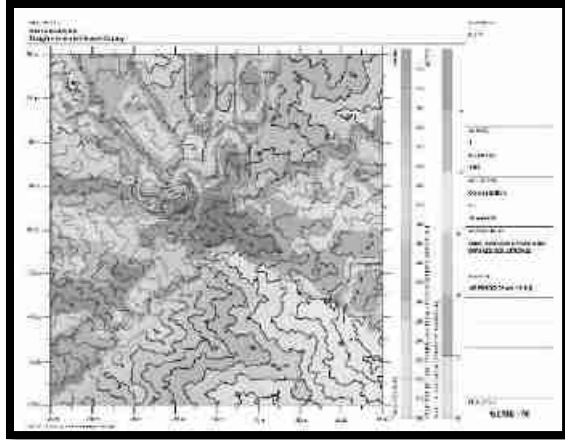
Meteorology is the key to understand the air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind in the broadest sense. Wind fluctuations over a very wide range of time, accomplish dispersion and strongly influence other processes associated with them.

A temporary meteorological station was installed at project site and monitored continually for study period without break. The station was installed at a height of 4m above the ground level in such a way that there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature are recorded on hourly basis. A weather data was collected from IMD, Tiruppur agro for the month of March 2024 – May 2024 to correlate with site data and found not much of change in the parameters.

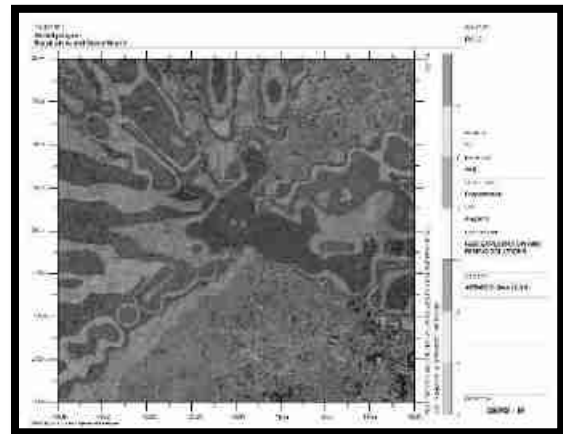
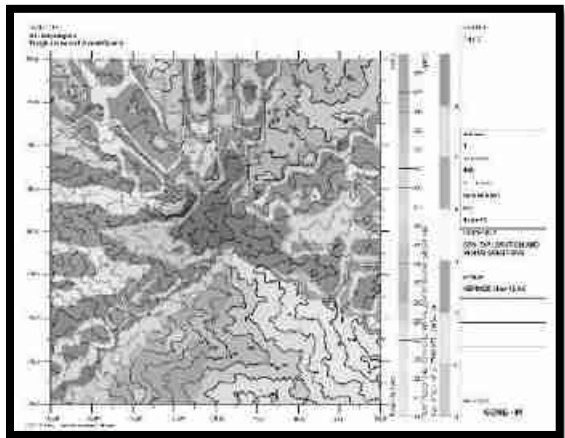
**FIGURE 4.1: AERMOD TERRAIN MAP**



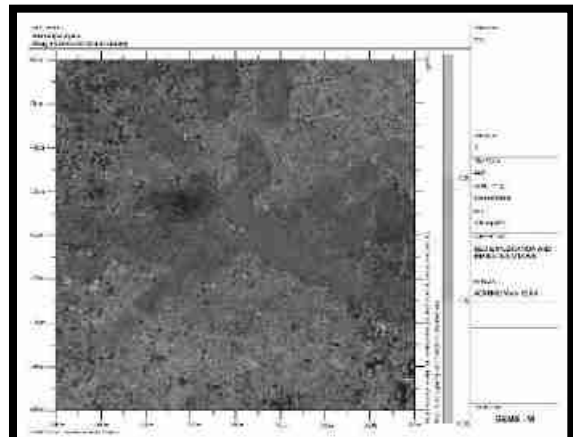
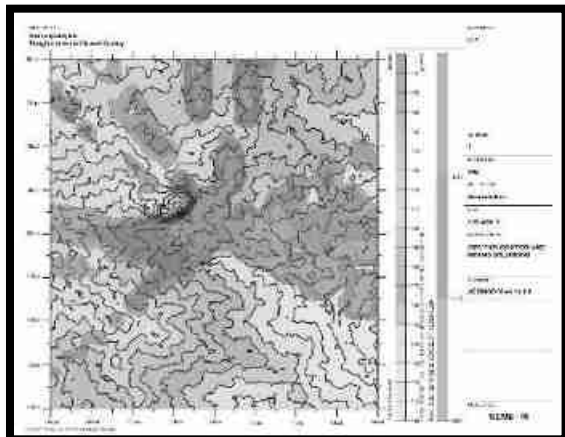
**FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM<sub>10</sub>**

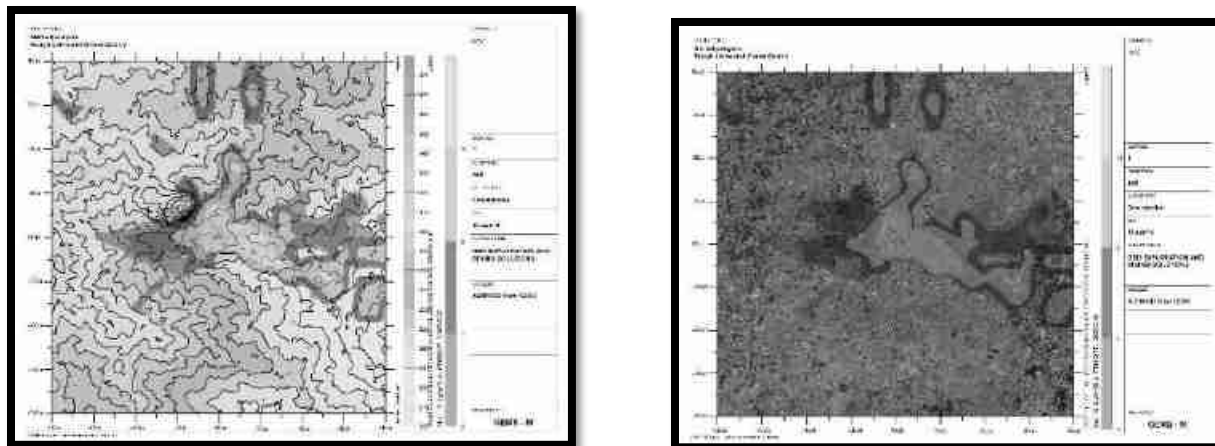
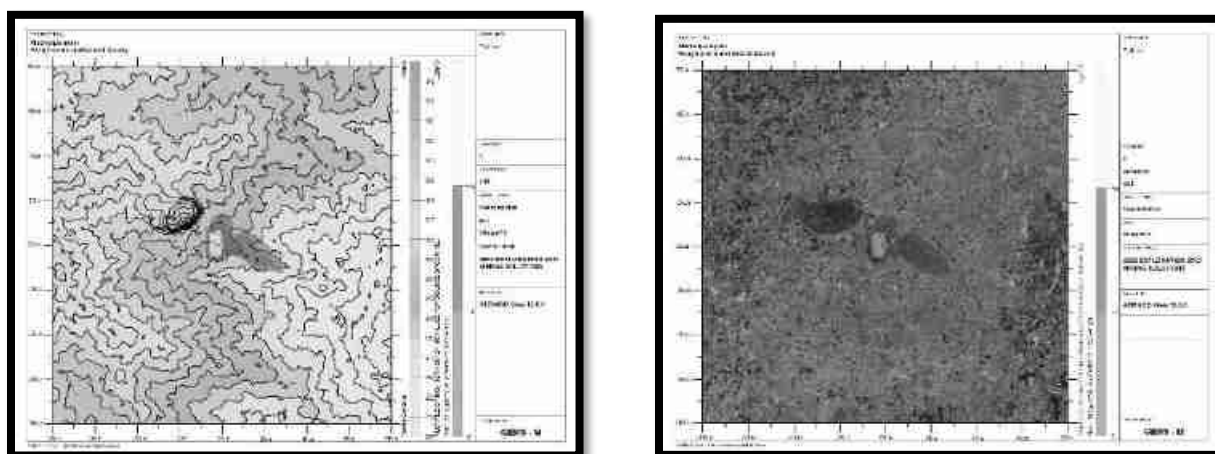


**FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF PM<sub>2.5</sub>**



**FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF SO<sub>2</sub>**



**FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF NO<sub>x</sub>****FIGURE 4.6: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE DUST**

#### 4.3.2.1 Model Results

The post project Resultant Concentrations of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>& NO<sub>x</sub> (GLC) is given in Table below:

**TABLE 4.3: INCREMENTAL & RESULTANT GLC OF PM<sub>10</sub>**

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM <sub>10</sub> (µg/m <sup>3</sup> )	Incremental value of PM <sub>10</sub> due to mining (µg/m <sup>3</sup> )	Total PM <sub>10</sub> (µg/m <sup>3</sup> ) (5+6)
AAQ1	12° 2'14.56"N 78°24'53.44"E	-85	3	42.5	15.89	58.4
AAQ2	12° 3'24.03"N 78°24'37.93"E	-560	2160	42.8	8.02	50.8
AAQ3	12° 0'55.15"N 78°27'7.20"E	3999	-2450	43.1	15.00	58.1
AAQ4	12° 2'2.96"N 78°22'34.78"E	-4321	-349	43.9	9.77	53.7
AAQ5	12° 5'31.77"N 78°26'22.42"E	2631	6119	43.6	0	43.6
AAQ6	11°59'42.80"N 78°24'43.68"E	-385	-4693	43.6	0	43.6
AAQ7	12° 4'9.29"N 78°22'4.18"E	-5256	3565	44.0	13.55	57.6

**TABLE 4.4: INCREMENTAL & RESULTANT GLC OF PM<sub>2.5</sub>**

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM <sub>2.5</sub> (µg/m <sup>3</sup> )	Incremental value of PM <sub>2.5</sub> due to mining (µg/m <sup>3</sup> )	Total PM <sub>2.5</sub> (µg/m <sup>3</sup> ) (5+6)
AAQ1	12° 2'14.56"N 78°24'53.44"E	-85	3	21.6	8.83	30.4
AAQ2	12° 3'24.03"N 78°24'37.93"E	-560	2160	22.3	3.4	25.7
AAQ3	12° 0'55.15"N 78°27'7.20"E	3999	-2450	22.0	8.17	30.2
AAQ4	12° 2'2.96"N 78°22'34.78"E	-4321	-349	21.8	5.26	27.1
AAQ5	12° 5'31.77"N 78°26'22.42"E	2631	6119	21.7	0	21.7
AAQ6	11°59'42.80"N 78°24'43.68"E	-385	-4693	20.2	1.1	21.3
AAQ7	12° 4'9.29"N 78°22'4.18"E	-5256	3565	22.5	7.8	30.3

**TABLE 4.5: INCREMENTAL & RESULTANT GLC OF SO<sub>2</sub>**

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline SO <sub>2</sub> (µg/m <sup>3</sup> )	Incremental value of SO <sub>2</sub> due to mining (µg/m <sup>3</sup> )	Total SO <sub>2</sub> (µg/m <sup>3</sup> ) (5+6)
AAQ1	12° 2'14.56"N 78°24'53.44"E	-85	3	6.4	2.29	8.7
AAQ2	12° 3'24.03"N 78°24'37.93"E	-560	2160	6.5	0	6.5
AAQ3	12° 0'55.15"N 78°27'7.20"E	3999	-2450	6.4	2.22	8.6
AAQ4	12° 2'2.96"N 78°22'34.78"E	-4321	-349	6.4	0.93	7.3
AAQ5	12° 5'31.77"N 78°26'22.42"E	2631	6119	6.8	0	6.8
AAQ6	11°59'42.80"N 78°24'43.68"E	-385	-4693	6.4	0	6.4
AAQ7	12° 4'9.29"N 78°22'4.18"E	-5256	3565	6.8	2	8.8

**TABLE 4.6: INCREMENTAL & RESULTANT GLC OF NO<sub>x</sub>**

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline NO <sub>x</sub> (µg/m <sup>3</sup> )	Incremental value of NO <sub>x</sub> due to mining (µg/m <sup>3</sup> )	Total NO <sub>x</sub> (µg/m <sup>3</sup> ) (5+6)
AAQ1	12° 2'14.56"N 78°24'53.44"E	-85	3	20.4	11.61	32.0
AAQ2	12° 3'24.03"N 78°24'37.93"E	-560	2160	20.6	0	20.6
AAQ3	12° 0'55.15"N 78°27'7.20"E	3999	-2450	21.5	11	32.5
AAQ4	12° 2'2.96"N 78°22'34.78"E	-4321	-349	20.2	0	20.2
AAQ5	12° 5'31.77"N 78°26'22.42"E	2631	6119	21.8	0	21.8
AAQ6	11°59'42.80"N 78°24'43.68"E	-385	-4693	21.8	0	21.8
AAQ7	12° 4'9.29"N 78°22'4.18"E	-5256	3565	20.8	5.76	26.6

**TABLE 4.7: INCREMENTAL & RESULTANT GLC OF FUGITIVE DUST**

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline Fugitive (µg/m <sup>3</sup> )	Incremental value of Fugitive due to mining (µg/m <sup>3</sup> )	Total Fugitive (µg/m <sup>3</sup> ) (5+6)
AAQ1	12° 2'14.56"N 78°24'53.44"E	-85	3	65.12	26	91.1
AAQ2	12° 3'24.03"N 78°24'37.93"E	-560	2160	67.01	0	67.0
AAQ3	12° 0'55.15"N 78°27'7.20"E	3999	-2450	63.76	0	63.8
AAQ4	12° 2'2.96"N 78°22'34.78"E	-4321	-349	63.42	0	63.4
AAQ5	12° 5'31.77"N 78°26'22.42"E	2631	6119	67.35	0	67.4
AAQ6	11°59'42.80"N 78°24'43.68"E	-385	-4693	66.05	0	66.0
AAQ7	12° 4'9.29"N 78°22'4.18"E	-5256	3565	68.34	0	68.3

From the resultant of cumulative concentration i.e., Background + Incremental Concentration of pollutant in all the receptor locations without effective mitigation measures are still within the prescribed NAAQ limits of 100, 80 & 80 µg/m<sup>3</sup> for PM<sub>10</sub>, SO<sub>2</sub> & NO<sub>x</sub> respectively. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be further being controlled.

#### 4.3.4. Common Mitigation Measures for Respective Individual Proposed Projects

**Drilling** – To control dust at source, wet drilling will be practiced. Where there is a scarcity of water, suitably designed dust extractor will be provided for dry drilling along with dust hood at the mouth of the drill-hole collar.

##### **Advantages of Wet Drilling:** -

- In this system dust gets suppressed close to its formation. Dust suppression become very effective and the work environment will be improved from the point of occupational comfort and health.
- Due to dust free atmosphere, the life of engine, compressor etc., will be increased.
- The life of drill bit will be increased.
- The rate of penetration of drill will be increased.
- Due to the dust free atmosphere visibility will be improved resulting in safer working conditions.

##### **Blasting** –

- Establish time of blasting to suit the local conditions and water sprinkling on blasting face
- Avoid blasting i.e., when temperature inversion is likely to occur and strong wind blows towards residential areas
- Controlled blasting includes Adoption of suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone and restricting blasting to a particular time of the day i.e., at the time lunch hours, controlled charge per hole as well as charge per round of hole
- Before loading of material water will be sprayed on blasted material
- Dust mask will be provided to the workers and their use will be strictly monitored

##### **Haul Road & Transportation** –

- Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation
- Transportation of material will be carried out during day time and material will be covered with tarpaulin
- The speed of tippers plying on the haul road will be limited below 20 km/hr to avoid generation of dust.
- Water sprinkling on haul roads & loading points will be carried out twice a day
- Main source of gaseous pollution will be from vehicle used for transportation of mineral; therefore, weekly maintenance of machines improves combustion process & makes reduction in the pollution.
- The un-metalled haul roads will be compacted weekly before being put into use.
- Over loading of tippers will be avoided to prevent spillage.
- It will be ensured that all transportation vehicles carry a valid PUC certificate
- Grading of haul roads and service roads to clear accumulation of loose materials

##### **Green Belt** –

- Planting of trees all along main mine haul roads and regular grading of haul roads will be practiced to prevent the generation of dust due to movement of dumpers/trucks
- Green belt of adequate width will be developed around the project areas

##### **Occupational Health** –

- Dust mask will be provided to the workers and their use will be strictly monitored
- Annual medical checkups, trainings and campaigns will be arranged to ensure awareness about importance of wearing dust masks among all mine workers & tipper drivers
- Ambient Air Quality Monitoring will be conducted six months once to assess effectiveness of mitigation measures proposed



#### 4.4 Noise Environment (Impact & Mitigation Measures)

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks & HEMM. These activities will not cause any problem to the inhabitants of this area because there is no human settlement in close proximity to the project area. Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities.

Predictions have been carried out to compute the noise level at various distances around the working pit due to these major noise-generating sources. Noise modelling has been carried out to assess the impact on surrounding ambient noise levels. Basic phenomenon of the model is the geometric attenuation of sound. Noise at a point generates spherical waves, which are propagated outwards from the source through the air at a speed of 1,100 ft/sec, with the first wave making an ever-increasing sphere with time. As the wave spreads the intensity of noise diminishes as the fixed amount of energy is spread over an increasing surface area of the sphere. The assumption of the model is based on point source relationship i.e., for every doubling of the distance the noise levels are decreased by 6 dB (A).

For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using model based on first principle.

$$Lp_2 = Lp_1 - 20 \log (r_2/r_1) - Ae_{1,2}$$

Where:

$Lp_1$  &  $Lp_2$  are sound levels at points located at distances  $r_1$  &  $r_2$  from the source.

$Ae_{1,2}$  is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$Lp_{total} = 10 \log \{10^{(Lp_1/10)} + 10^{(Lp_2/10)} + 10^{(Lp_3/10)} + \dots\}$$

##### 4.4.1 Anticipated Impact

Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are:

- Source data
- Receptor data
- Attenuation factor

Source data has been computed taking into account of all the machinery and activities used in the mining process. Same has been listed in Table 4-8.

**TABLE 4.8: ACTIVITY AND NOISE LEVEL PRODUCED BY MACHINERY**

Sl.No.	Machinery / Activity	Impact on Environment?	Noise Produced in dB(A) at 50 ft from source*
1	Blasting	Yes	94
2	Jack Hammer	Yes	88
3	Compressor	No	81
4	Excavator	No	85
5	Tipper	No	84
Total Noise Produced			95.8

\*50 feet from source = 15.24 meters

Source: U.S. Department of Transportation (Federal Highway Administration) – Construction Noise Handbook

The total noise to be produced by mining activity is calculated to be 95.8 dB (A). Generally, most mining operations produce noise between 100-109 dB (A). We have considered equipment and operation noise levels (max) to be approx. 109 dB (A) for noise prediction modelling.

**TABLE 4.9: PREDICTED NOISE INCREMENTAL VALUES**

Location ID	N1	N2	N3	N4	N5	N6	N7
Maximum Monitored Value (Day) dB(A)	45.6	47.2	45.2	47.1	45.3	43.5	43.1
Incremental Value dB(A)	60.1	60.1	30.0	24.5	24.8	27.0	26.1
Total Predicted Noise level dB(A)	60.3	60.3	45.3	47.1	45.3	43.6	43.2
NAAQ Standards	<b>Industrial Residential</b>		<b>Day Time- 75 dB (A)</b>		<b>Night Time- 70 dB (A)</b>		<b>Day Time- 55 dB (A)</b>
							<b>Night Time- 45 dB (A)</b>

#### 4.4.2 Common Mitigation Measures for Respective Individual Proposed Projects

The following noise mitigation measures are proposed for control of Noise.

- Time intervals for each quarry during blasting.
- Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.
- Limiting time exposure of workers to excessive noise.
- Proper and regular maintenance of vehicles, machinery and other equipment's.
- The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipment's.
- Speed of trucks entering or leaving the quarry will be limited to moderate speed to prevent undue noise from empty vehicles...
- Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes (occasionally).
- Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment.
- Provision of Quiet areas, where employees can get relief from workplace noise.
- The development of green belts around the periphery of the quarry site to attenuate noise.
- Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.

#### 4.4.3 Ground Vibrations

Ground vibrations due to the proposed mining activities are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc., However, the major source of ground vibration from the quarry is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements.

Another impact due to blasting activities is fly rocks. These may fall on the houses or agricultural fields nearby the mining lease area and may cause injury to persons or damage to the structures. Nearest habitation from the project area is located 1km Southeast in Karacheri village. The ground vibrations due to the blasting in proposed mine are calculated using the empirical equation.

The empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K [R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

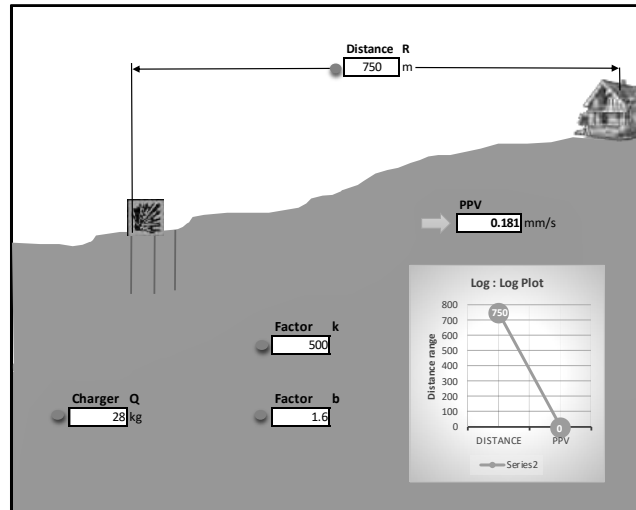
Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

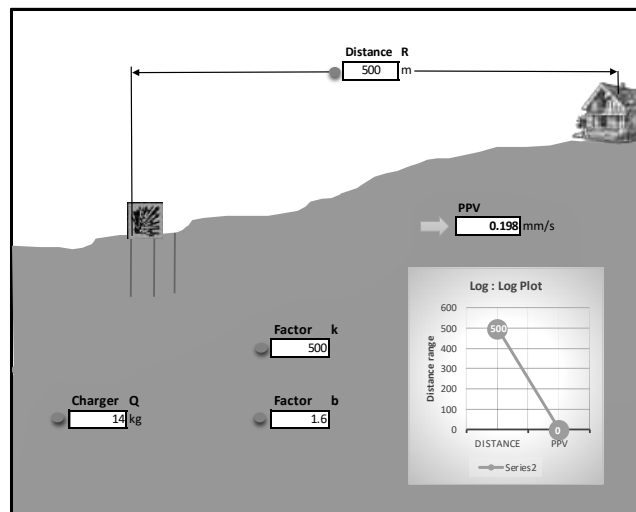
R = distance from charge (m)

**TABLE 4.10: PREDICTED PPV VALUES DUE TO BLASTING P1-P2**

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	28	750	0.181
P2	14	500	0.198



P-1



P-2

From the above, the charge per blast of 42 Kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. It should be ensured that the explosives used for blasting at one blast should not exceed more than 28 Kg at any point of time. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

#### 4.4.3.1 Common Mitigation Measures for Respective Individual Proposed Projects

- The blasting operations in the cluster quarries are carried out without deep hole drilling and blasting using delay detonators, which reduces the ground vibrations;
- Proper quantity of explosive, suitable stemming materials and appropriate delay system will be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting will be maintained as per DGMS guidelines;
- Blasting shelter will be provided as per DGMS guidelines;
- Blasting operations will be carried out only during day time;
- The charge per delay will be minimized and preferably a greater number of delays will be used per blasts;
- During blasting, other activities in the immediate vicinity will be temporarily stopped;
- Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast;
- A fully trained explosives blast man (Mining Mate, Mines Foreman, 2<sup>nd</sup> Class Mines Manager/ 1<sup>st</sup> Class Mines Manager) will be appointed.

- A set of shot firing rules will be drawn up and blasting shall commence outlining the detailed operating procedures that will be followed to ensure that shot firing operations on site take place without endangering the workforce or public.
- Sufficient angular stemming material will be used to confine the explosive force and minimise environmental disturbance caused by venting / misfire.
- The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used.
- The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects.
- Appropriate blasting techniques shall be adopted such that the predicted peak particle velocity shall not exceed 8 Hz.
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices.

#### **4.5 Ecology and Biodiversity**

The developmental programs, policies, and projects operated or managed by government or private bodies can cause potentially significant changes in the physical, biological, and socio-economic environment. In some cases, the changes may be beneficial while in others it may be detrimental to the environment. Accordingly, environmental impact studies are required for systematic identification, qualification, and interpretation of the anticipated changes.

The main environmental problems associated with mining activities are deforestation, land degradation (change in topography, soil erosion), visual intrusion, disturbance to the hydrological system, and water, air, and noise pollution which ultimately impact upon the floral and faunal status of the project area.

##### **4.5.1. Impact Identification and Evaluation**

In general, impact prediction methods argue that the foremost step in impact appraisal must consider and identify project actions that are likely to bring significant changes in the project environment. The present study determined to predict the likely impacts of the Proposed Mudalipalayam Rough stone and gravel quarry Mining Project in the surrounding environment with a specific focus on biological attributes covering habitats/ecosystems and associated biodiversity. Likely impacts identified were categorized into different levels like, direct or primary and indirect or secondary impacts based on the influence of sources of impacts

The following Reserved Forest is situated within 10 km radius. Uthiyur R.F. 705.48km North. No Wildlife Sanctuary in the study area. In addition, No Biosphere Reserves, Wildlife corridors, or, Tiger / Elephant reserves within 10 km of the project area. No Schedule- I species were found in the buffer zone of the proposed project area during the biodiversity assessment.

##### **4.5.2. Impact on Flora**

The mine lease applied is exhibits evaluated terrain. It is a Patta land which is not fit for cultivation. It is mostly devoid of any considerable vegetation. The proposed mine lease area (core zone) not encompasses any designated forest land within it. The vegetation is very sparse and scanty. So, there will be no impact on flora from the mining operation. There will not be much contamination of soil or any other materials from the mining operation. No threatened plant species were reported in the core and buffer study area during the field survey.

##### **4.5.2.1. Anticipated Impact on agricultural land associated with flora**

1. There are no impacts on the nearby agricultural land due to this mining activity.
2. None of the plants will be cut during the operational phase of the mine.
3. There shall be negligible air emissions or effluents from the project site. During loading the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly.

Most of the land in the buffer area is undulating terrain with croplands, grass patches, and small shrubs. Hence, there will be no effect on the flora of the region.

#### **4.5.3 Mitigation Measures**

##### **4.5.3.1. General Guidelines for Green Belt Development**

In selecting plant species for green belt and plantation purposes in and around the proposed mine lease area native species, fruit-bearing trees, medicinal plants, and dense canopy trees should be selected. These species should be tolerant to pollution levels as per Bio- Geography zones of India.

After the operation of mining production capacity, green belt and Plantation species should be in accordance with the Terms and Conditions of the Environmental Clearance Green belt is created not only for the purpose of protecting sensitive areas or maintaining the ecological balance but because they also act as efficient biological filters or sinks for particulate and gaseous emissions, generated by vehicular movements and various industrial and mining activities. Optimally designed green belts can be effective in reducing the impact of fugitive emissions and pollutants accidentally or otherwise released at ground levels.

#### 4.5.3.2. Green Belt Development Plan

Greenbelt means planting of special type of plants suitable to that particular agroclimate zone and soil characteristics in a place which will make the area cooler, reduce air pollution, prevent soil erosion and further improve the soil fertility status. A green belt around the periphery of boundary and road side will be created to avoid erosion of soil, prevention of landslides, minimize the air pollution and noise pollution in the project area. The green plants are capable of absorbing air pollutants and forming sinks for pollutants. Leaves with their vast area in a tree crown, absorb pollutants on their surface, effectively reducing their concentration and noise level in the ambient.

#### 4.5.3.3. Guidelines & Techniques for Green Belt Development

Extensive survey in the project area was undertaken to observe the structure and composition of vegetation. Hence a combination of plant is selected depending upon the topographical suitability and species selected as per SPCB Guideline and ToR. The soil characteristics were kept in mind. Based on this survey and environmental conditions suitable native plants species have been proposed for green belt development plan.

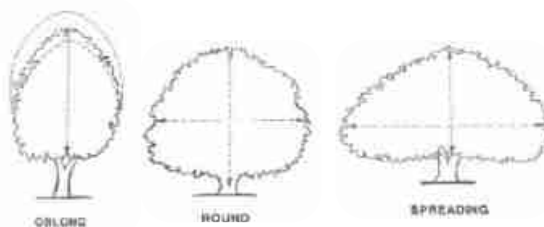
#### 4.5.3.4. Development of Green Belt

The plantation matrix adopted for the green belt development includes pit of 0.3 m x 0.3 m size with a spacing of 2 m x 2 m. In addition, earth filling and manure may also be required for the proper nutritional balance and nourishment of the sapling. It is also recommended that the plantation has to be taken up randomly and the landscaping aspects could be taken into consideration. Multi-layered plantations comprising of medium height trees (7 m to 10 m) and shrubs (5 m height) are proposed for the green belt.

Greenbelt is a set of rows of trees planted in such a fashion, to create effective barrier between the project and surroundings. The greenbelt helps to capture the fugitive emissions, attenuate the noise levels in the existing project and simultaneously improving aesthetics of the surroundings.

##### a. Characteristic features of plants to be used for Absorption of pollutant gases

- Plant species should be perennial and evergreen with thick canopy cover.
- The crown of the tree (mass of foliage/leaves and branches growing outward from the trunk of the tree) should be either Oblong, Round, or Spreading for effective absorption of pollutant gases.
- Plant should have foliage of longer duration.
- The foliage should be freely exposed through: Adequate height of crown, Openness of foliage/leaves in canopy, Big leaves (long and broad lamina surfaces).



(\*Source: Guidance for Developing Green belts Manual, CPCB 2000)

**Table No 4.1. List of plant species proposed for Greenbelt development**

S. No	Scientific name	Tamil Name
1	<i>Aegle marmelos</i>	Vilva maram
2	<i>Albizia lebbbeck</i>	Vaagai maram

3	<i>Cassia fistula</i>	Konrai tree
4	<i>Lannea coromandelica</i>	Othiyam
5	<i>Limonia acidissima</i>	Vila maram
6	<i>Syzygium cumini</i>	Naval maram
7	<i>Toona ciliata</i>	Santhana Vembu
8	<i>Ficus hispida</i>	Aththi maram
9	<i>Borassus flabellifer</i>	Panai-maram
10	<i>Madhuca longifolia</i>	Illupai maram

(\*Source: Term of Reference-ToR)

**Table No 4.2. Species suitable for abatement of noise and dust pollution**

S. No	Botanical name	Common name
1	<i>Azadirachta indica</i>	Vembhu maram
2	<i>Ficus religiosa</i>	Arasan maram
3	<i>Ficus hispida</i>	Aththi maram
4	<i>Bombax ceiba</i>	Mul Elavu
5	<i>Syzygium cumini</i>	Naval maram
6	<i>Tamarindus indica</i>	Puliyamaram
7	<i>Mangifera indica</i>	Manga maram
8	<i>Harwickia binata</i>	Anjan maram
9	<i>Delonix regia</i>	Neruppu Kondrai
10	<i>Cassia Fistula</i>	Sara Kondrai

(\*Source: Guidance for Developing Green belts Manual, CPCB 2000)

The above-suggested list covers species with thick canopy cover, perennial green nature, native origin, and a large leaf area index. The proposed species will help in forming an effective barrier between the mine site area and the surroundings.

These species need to be planted along the periphery of lease area for absorb fugitive emissions and noise levels which is generated during mining activities. All the open spaces, where tree plantation may not be possible, should be covered with shrubs and grass to prevent erosion of topsoil.

**Some of the important aspects to be considered are:**

- ✓ Planting of trees in each row will be in staggered orientation.
- ✓ In the front row, shrubs will be grown.
- ✓ Since the trunks of the tall trees are generally devoid of foliage, it will be useful to have shrubs in front of the trees so as to give coverage to this portion.
- ✓ The spacing between the trees will be maintained slightly less than the normal spaces, so that the trees may grow vertically and slightly increase the effective height of the green belt.

**4.5.4. Anticipated Impact on Fauna**

- Since the terrestrial fauna in the study area are distributed away from the mine site, the impacts of project are likely to be much low on terrestrial fauna of the region. The proposed mining lease area is devoid of any significant vegetation, it is not suitable for permanent habitat for any specific wildlife.
- Habitat degradation and disturbance to faunal group due to ground vibration and increase in noise level will be minimize or resolved by modern technologies. So, from above facts it is revealed that there will be no impact on fauna. No threatened fauna species reported in the core and buffer study area.

**4.5.4.1. Measures for protection and conservation of wildlife species**

- Topsoil has a large number of seeds of native plant species in the mining area.
- Topsoil will be used for restoration and suitable surfaces for planted seedlings.
- Checks and controls the movement of vehicles in and out of the mine.
- Undertaking mitigative measures for a conducive environment to the flora and fauna in consultation with Forest Department.
- A dust suppression system will be installed within the mine and periphery of the mine.

- Plantation around the mine area will help in creating habitats for small faunal species and create a better environment for various fauna. Creating and developing awareness for nature and wildlife in the adjoining villages.

#### 4.5.5. Impact on Aquatic Biodiversity

Mining activities will not disturb the aquatic ecology as there is no effluent discharge proposed from the Mudalipalayam Rough stone and gravel quarry. There is no natural perennial surface water body within the mine lease area, like wetlands, rivers streams, Odai, Vaari, Canal, Channel, lakes, ponds, tanks, and farmer sites. *Typha angustata* can be found growing all along the drains of villages, small water-logged depressions, and agricultural fields lacking water but containing enough moisture to support its growth. And where water is present, *Eichhornia crassipes* has taken its roots and covers the entire water surface by its sprawl and invasion. There is no impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. There are no nearby water bodies. Aquatic biodiversity is observed in the study area.

#### 4.5.3.2. Proposed Green Belt

**TABLE 4.12: GREENBELT DEVELOPMENT PLAN (P1-P2)**

PROPOSAL FOR P1				
Year	No. of trees proposed to be planted	Survial %	Area to be planted	Name of the species
I	It is proposed to plant <b>810 Nos</b> of trees in the 1 <sup>st</sup> year	80%	Safety barrier, Un utilized areas and nearby village roads	Neem, Pongamia pinnata, Naval, etc
PROPOSAL FOR P2				
I	It is proposed to plant <b>600 Nos</b> of trees in the 1 <sup>st</sup> year	80%	Safety barrier, Un utilized area's and nearby village roads	Neem, Pongamia pinnata, Naavl, etc.,

**TABLE 4.13: BUDGET FOR GREEBELT DEVELOPMENT PLAN-P1**

ACTIVITY	YEARS		RATE	COST (Rs./-)
	I			
Plantation under safety zone	Nos	530	@100 Rs Per sapling	53,000
	Cost	53000		
Plantation in quarried out benches and approach road	Nos	280		28,000
	Cost	28000		
Barbed Wire Fencing (In Mtrs) 500 Mtrs	150000		@300 Rs Per Meter	1,50,000
Garland drain (In Mtrs) 400 Mtrs	1,20,000		@300 Rs Per Meter	1,20,000
<b>TOTAL</b>				<b>3,51,000</b>

**TABLE 4.14: BUDGET FOR GREEBELT DEVELOPMENT PLAN-P2**

ACTIVITY	YEARS		RATE	COST (Rs./-)
	I			
Plantation under safety zone	Nos	450	@100 Rs Per sapling	45,000
	Cost	45000		

Plantation in quarried out benches and approach road	Nos	150		15000
	Cost	15000		
Barbed Wire Fencing (In Mtrs) 220 Mtrs		66,000	@300 Rs Per Meter	66,000
Garland drain (In Mtrs) 200 Mtrs		60,000	@300 Rs Per Meter	60,000
<b>TOTAL</b>				<b>1,86,000</b>

Source: Approved Mining Plan

## 4.6 SOCIO ECONOMIC

### 4.6.1 Anticipated Impact

- Dust generation from mining activity can have negative impact on the health of the workers and people in the nearby area.
- Approach roads can be damaged by the movement of tippers
- Increase in Employment opportunities both direct and indirect thereby increasing economic status of people of the region

### 4.6.2 Mitigation Measures

- Good maintenance practices will be adopted for all machinery and equipment, which will help to avert potential noise problems.
- Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines.
- Air pollution control measure will be taken to minimize the environmental impact within the core zone.
- For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices will be provided as per mines act and rules.
- Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc., from this project directly and indirectly.
- From above details, the quarry operations will have highly beneficial positive impact in the area

## 4.7 OCCUPATIONAL HEALTH AND SAFETY

Occupational health and safety hazards occur during the operational phase of mining and primarily include the following:

- Respiratory hazards
- Noise
- Physical hazards
- Explosive storage and handling

### 4.7.1 Respiratory Hazards

Long-term exposure to silica dust may cause silicosis the following measures are proposed:

- Cabins of excavators and tippers will be enclosed with AC and sound proof
- Use of personal dust masks will be made compulsory

### 4.7.2 Noise

Workers are likely to get exposed to excessive noise levels during mining activities. The following measures are proposed for implementation

- No employee will be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection



- The use of hearing protection will be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110 dB(A)
- Ear muffs provided will be capable of reducing sound levels at the ear to at least 85 dB(A)
- Periodic medical hearing checks will be performed on workers exposed to high noise levels

#### 4.7.3 Physical Hazards

The following measures are proposed for control of physical hazards

- Specific personnel training on work-site safety management will be taken up;
- Work site assessment will be done by rock scaling of each surface exposed to workers to prevent accidental rock falling and / or landslide, especially after blasting activities;
- Natural barriers, temporary railing, or specific danger signals will be provided along rock benches or other pit areas where work is performed at heights more than 2m from ground level;
- Maintenance of yards, roads and footpaths, providing sufficient water drainage and preventing slippery surfaces with an all-weather surface, such as coarse gravel will be taken up

#### 4.7.4 Occupational Health Survey

All the persons will undergo pre-employment and periodic medical examination. Employees will be monitored for occupational diseases by conducting the following tests

- General physical tests
- Audiometric tests
- Full chest, X-ray, Lung function tests, Spirometric tests
- Periodic medical examination – yearly
- Lung function test – yearly, those who are exposed to dust
- Eye test

Essential medicines will be provided at the site. The medicines and other test facilities will be provided at free of cost. The first aid box will be made available at the mine for immediate treatment. First aid training will be imparted to the selected employees regularly. The lists of first aid trained members shall be displayed at strategic places.

### 4.8 MINE WASTE MANAGEMENT

No waste is anticipated, the entire mined out material will be sold to needy crushers and customers.

### 4.9 MINE CLOSURE

#### Proposal – P1

The ultimate depth of the mine is 37m bgl and the life of the mine is 5 years, after completion of mining operation the following action will be taken in the project site as a part of Mine closure plan

- The total Mined out land would be around 0.74.8 Ha this land will be converted into temporary water reservoir which will facilitate to collect the rain water
- The stagnant water will be supplied to the nearby agriculture land during drought seasons
- Fencing will be re constructed around the pit after closure, the warning/ danger display board will be placed on all the sides of the project site
- The un utilized area and haul roads will be converted as plantation area, fruit bearing trees will be planted to retain the eco system of the area
- Final Mine closure plan will be prepared and submitted to the concerned authority

#### Proposal – P2

The ultimate depth of the mine is 42m bgl and the life of the mine is 5 years, after completion of mining operation the following action will be taken in the project site as a part of Mine closure plan

- 
- The total Mined out land would be around 1.00.6 Ha this land will be converted into temporary water reservoir which will facilitate to collect the rain water
  - The stagnant water will be supplied to the nearby agriculture land during drought seasons
  - Fencing will be re constructed around the pit after closure, the warning/ danger display board will be placed on all the sides of the project site
  - The un utilized area and haul roads will be converted as plantation area, fruit bearing trees will be planted to retain the eco system of the area

Final Mine closure plan will be prepared and submitted to the concerned authority Mine closure plan is the most important environmental requirement in mining project. The mine closure plan should cover technical, environmental, social, legal and financial aspects dealing with progressive and post closure activities. The closure operation is a continuous series of activities starting from the decommissioning of the project. As progressive mine closure is a continuous series of activities, it is obvious that the proposals of scientific mining have included most of the activities to be included in the closure plan. While formulating the closure objectives for the site, it is important to consider the existing or the pre-mining land use of the site; and how the operation will affect this activity.

The primary aim is to ensure that the following broad objectives along with the abandonment of the mine can be successfully achieved:

- To create a productive and sustainable after-use for the site, acceptable to mine owners, regulatory agencies, and the public
- To protect public health and safety of the surrounding habitation
- To minimize environmental damage
- To conserve valuable attributes and aesthetics
- To overcome adverse socio-economic impacts.

#### **4.9.1 Mine Closure Criteria**

The criteria involved in mine closure are discussed below:

##### **4.9.1.1 Physical Stability**

All anthropogenic structures, which include mine workings, buildings, rest shelters etc., remaining after mine decommissioning should be physically stable. They should present no hazard to public health and safety as a result of failure or physical deterioration and they should continue to perform the functions for which they were designed. The design periods and factors of safety proposed should take full account of extreme events such as floods, hurricane, winds or earthquakes, etc. and other natural perpetual forces like erosion, etc.,

##### **4.9.1.2 Chemical Stability**

The solid wastes on the mine site should be chemically stable. This means that the consequences of chemical changes or conditions leading to leaching of metals, salts or organic compounds should not endanger public health and safety nor result in the deterioration of environmental attributes. If the pollutant discharge likely to cause adverse impacts is predicted in advance, appropriate mitigation measures like settling of suspended solids or passive treatment to improve water quality as well as quantity, etc., could be planned. Monitoring should demonstrate that there is no adverse effect of pollutant concentrations exceeding the statutory limits for the water, soil and air qualities in the area around the closed mine.

##### **4.9.1.3 Biological Stability**

The stability of the surrounding environment is primarily dependent upon the physical and chemical characteristics of the site, whereas the biological stability of the mine site itself is closely related to rehabilitation and final

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land use. Nevertheless, biological stability can significantly influence physical or chemical stability by stabilizing soil cover, prevention of erosion/wash off, leaching, etc.,

A vegetation cover over the disturbed site is usually one of the main objectives of the rehabilitation programme, as vegetation cover is the best long-term method of stabilizing the site. When the major earthwork components of the rehabilitation programme have been completed, the process of establishing a stable vegetation community begins. For re-vegetation, management of soil nutrient levels is an important consideration. Additions of nutrients are useful under three situations.

- Where the nutrient level of spread topsoil is lower than material in-situ e.g., for development of social forestry
- Where it is intended to grow plants with a higher nutrient requirement than those occurring naturally e.g., planning for agriculture
- Where it is desirable to get a quick growth response from the native flora during those times when moisture is not a limiting factor e.g., development of green barriers

The Mine closure plan should be as per the approved mine plan. The mine closure is a part of approved mine plan and activities of closure shall be carried out as per the process described in mine closure plan.

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## **5. ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)**

### **5.0 INTRODUCTION**

Consideration of alternatives to a project proposal is a requirement of EIA process. During the scoping process, alternatives to a proposal can be considered or refined, either directly or by reference to the key issues identified. A comparison of alternatives helps to determine the best method of achieving the project objectives with minimum environmental impacts or indicates the most environmentally friendly and cost-effective options.

### **5.1 FACTORS BEHIND THE SELECTION OF PROJECT SITE**

The surrounding areas already undergone quarrying operation. Most of the quarries in the regions are abandoned and lease expired quarries. Hence this quarry will feed the Rough Stone material to the crushing units.

The Rough Stone and Gravel Quarry Project for excavation of Rough Stone, which is site specific. The proposed mining lease areas have following advantages: -

- The mineral deposit occurs in a non-forest area.
- There is no habitation within the project area; hence no R & R issues exist.
- There is no river, stream, nallah and water bodies in the applied mine lease areas.
- Availability of skilled, semi-skilled and unskilled workers in this region.
- All the basic amenities such as medical, firefighting, education, transportation, communication and infrastructural facilities are well connected and accessible.
- The mining operations will not intersect the ground water level. Hence, no impact on ground water environment.
- Study area falls in seismic zone – II, there is no major history of landslides, earthquake, subsidence etc., recorded in the past history.

### **5.2 ANALYSIS OF ALTERNATIVE SITE**

No alternatives are suggested as all the mine sites are mineral specific

### **5.3 FACTORS BEHIND SELECTION OF PROPOSED TECHNOLOGY**

The existing quarries in the area operated by Opencast Mechanised Mining operation with drilling and blasting method will be used to extract Rough Stone in the area. All the applied mining lease areas have following advantages –

- As the mineral deposition is homogeneous and batholith formation, therefore opencast method of working is preferred over underground method
- The material will be loaded with the help of excavators into dumpers / trippers and transported to the needy customers.
- Blasting and availability of drills along with controlled blasting technology gives desired fragmentation so that the mineral is handled safely and used without secondary blasting.
- Semi-skilled labours fit for quarrying operations are easily available around the nearby villages.

### **5.4 ANALYSIS OF ALTERNATIVE TECHNOLOGY**

Open cast mechanized method has been selected for this project. This technology is having least gestation period, economically viable, safest and less labour intensive. The method has inbuilt flexibility for increasing or decreasing the production as per market condition.

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## **6. ENVIRONMENTAL MONITORING PROGRAMME**

### **6.0 GENERAL**

The main objective of environmental monitoring is to ensure that the obtained results in respect of environmental attributes and prevailing conditions during operation stage are in conformity with the prediction during the planning stage. In case of substantial deviation from the earlier prediction of results, this forms as base data to identify the cause and suggest remedial measures. Environmental monitoring is mandatory to meet compliance of statutory provisions under the Environment (Protection) Act, 1986, relevant conditions regarding monitoring covered under EC orders issued by the SEIAA as well as the conditions set forth under the order issued by Tamil Nadu Pollution Control Board while granting CTO.

### **6.1 METHODOLOGY OF MONITORING MECHANISM**

Implementation of EMP and periodic monitoring will be carried out by the project proponent. A comprehensive monitoring mechanism has been devised for monitoring of impacts due to this project; Environmental protection measures like dust suppression, control of noise and blast vibrations, maintenance of machinery and vehicles, housekeeping in the mine premises, plantation, implementation of Environmental Management Plan and environmental clearance conditions will be monitored by Mine Management. On the other hand, implementation of area level protection measures like green belt development, environmental quality monitoring etc., are taken up by a senior executive who reports to their Mine Management.

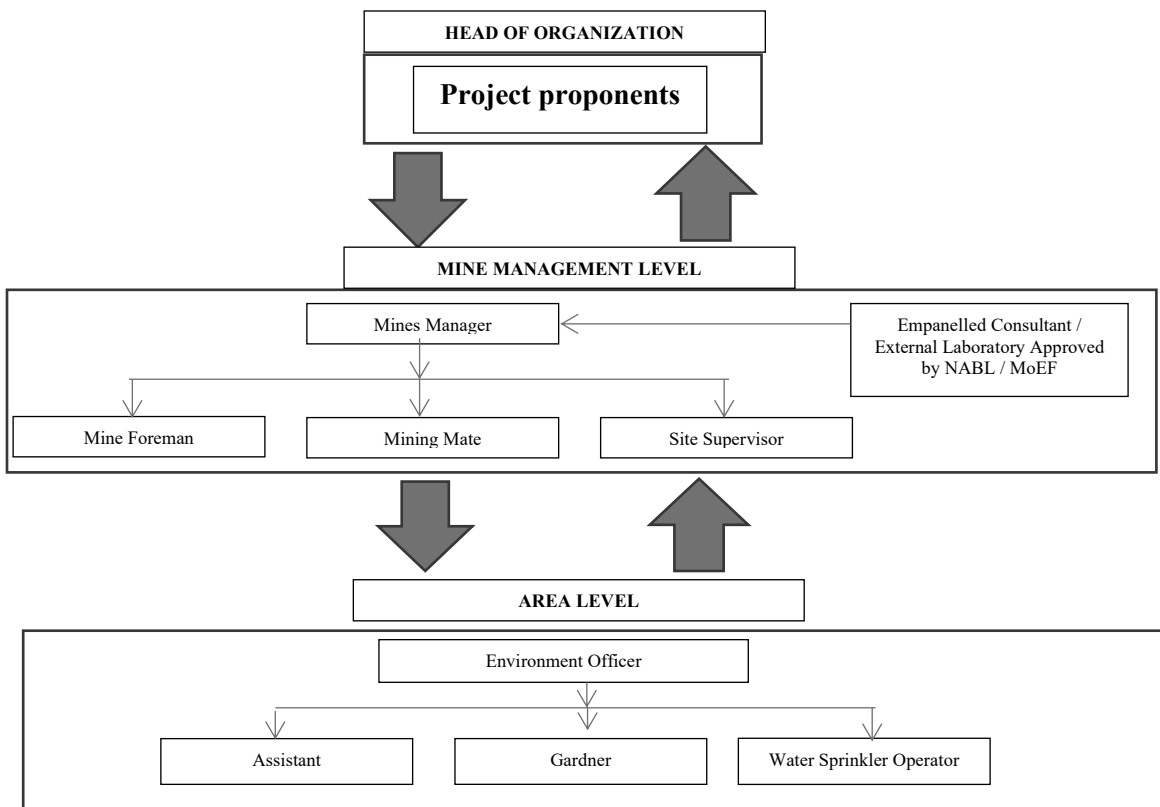
An Environment monitoring cell (EMC) will be constituted to monitor the implementation of EMP and other environmental protection measures in all the proposed quarries.

The responsibilities of this cell will be:

- Implementation of pollution control measures
- Monitoring programme implementation
- Post-plantation care
- To check the efficiency of pollution control measures taken
- Any other activity as may be related to environment
- Seeking expert's advice when needed.

The environmental monitoring cell will co-ordinate all monitoring programs at site and data thus generated will be regularly furnished to the State regulatory agencies as compliance status reports. The sampling and analysis report of the monitored environmental attributes will be submitted to the Tamil Nadu Pollution Control Board (TNPCB) at a frequency of half-yearly and yearly by each proposed project proponent. The half-yearly reports are submitted to Ministry of Environment and Forest, Regional Office and SEIAA as well.

The sampling and analysis of the environmental attributes will be as per the guidelines of Central Pollution Control Board (CPCB)/Ministry of Environment, Forest and Climate Change (MoEF & CC).

**FIGURE 6.1: PROPOSED ENVIRONMENTAL MONITORING CELL**

## 6.2 IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES

The mitigation measures proposed in Chapter-4 will be implemented so as to reduce the impact on the environment due to the operations of the proposed project. Implementation schedule of mitigation measures is given in Table 6.1.

**TABLE 6.1 IMPLEMENTATION SCHEDULE**

SI No.	Recommendations	Time Period	Schedule
1	Land Environment Control Measures	Before commissioning of the project	Immediately after the commencement of project
2	Soil Quality Control Measures	Before commissioning of the project	Immediately after the commencement of project
3	Water Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
4	Air Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
5	Noise Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
6	Ecological Environment	Phase wise implementation every year along with mine operations	Immediately and as project progress

### 6.3 MONITORING SCHEDULE AND FREQUENCY

The environmental monitoring will be conducted in the mine operations as follows:

- Air quality;
- Water and wastewater quality;
- Noise levels;
- Soil Quality; and
- Greenbelt Development

The details of monitoring are detailed in Table 6.2

**TABLE 6.2: PROPOSED MONITORING SCHEDULE POST EC FOR P1**

S.No.	Environment Attributes	Location	Monitoring		Parameters
			Duration	Frequency	
1	Air Quality	2 Locations (1 Core & 1 Buffer)	24 hours	Once in 6 months	Fugitive Dust, PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> and NO <sub>x</sub> .
2	Meteorology	At mine site before start of Air Quality Monitoring & IMD Secondary Data	Hourly / Daily	Continuous online monitoring	Wind speed, Wind direction, Temperature, Relative humidity and Rainfall
3	Water Quality Monitoring	2 Locations (1SW & 1 GW)	-	Once in 6 months	Parameters specified under IS:10500, 1993 & CPCB Norms
4	Hydrology	Water level in open wells in buffer zone around 1 km at specific wells	-	Once in 6 months	Depth in bgl
5	Noise	2 Locations (1 Core & 1 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night
6	Vibration	At the nearest habitation (in case of reporting)	-	During blasting Operation	Peak Particle Velocity
7	Soil	2 Locations (1 Core & 1 Buffer)	-	Once in six months	Physical and Chemical Characteristics
8	Greenbelt	Within the Project Area	Daily	Monthly	Maintenance

Source: Guidance of manual for mining of minerals, February 2010

### 6.4 BUDGETARY PROVISION FOR EMP

The cost in respect of monitoring of environmental attributes, parameter to be monitored, sampling/monitoring locations with frequency and cost provision against each proposal is shown in Table 6.3. Monitoring work will be outsourced to external laboratory approved by NABL / MoEF.

The proposed capital cost for Environmental Monitoring Programme is Rs 76,000/- and the recurring cost is Rs 76,000 per annum for each Proposed Project.

**TABLE 6.3 ENVIRONMENT MONITORING PROGRAM BUDGET**

S.No.	Parameter	Capital Cost	Recurring Cost per annum
1	Air Quality	Rs. 76,000/-	Rs. 76,000/-
2	Meteorology		
3	Water Quality		
4	Hydrology		

5	Soil Quality		
6	Noise Quality		
7	Vibration Study		
<b>Total</b>		<b>Rs 76,000/-</b>	<b>Rs 76,000/-</b>

Source: Approved Mining Plan

## 6.5 REPORTING SCHEDULES OF MONITORED DATA

The monitored data on air quality, water quality, noise levels and other environmental attributes will be periodically examined by the Cluster Mine Management Coordinator and Respective Head of Organization for taking necessary corrective measures. The monitoring data will be submitted to Tamil Nadu State Pollution Control Board in the Compliance to CTO Conditions & environmental audit statements every year to MoEF & CC and Half-Yearly Compliance Monitoring Reports to MoEF & CC Regional Office and SEIAA.

Periodical reports to be submitted to: -

- MoEF & CC – Half yearly status report
- TNPCB - Half yearly status report
- Department of Geology and Mining: quarterly, half yearly annual reports

Besides the Mines Manager/Agent of respective project will submit the periodical reports to –

- Director of mines safety,
- Labour enforcement officer,
- Controller of explosives as per the norms stipulated by the department.



## 7. ADDITIONAL STUDIES

### 7.0 GENERAL

The following Additional Studies were done as per items identified by project proponent and items identified by regulatory authority. And items identified by public and other stakeholders will be incorporated after Public Hearing.

- Public Consultation
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Plastic Waste Management

### 7.1. PUBLIC CONSULTATION

Application to The Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district is submitted along with this Draft EIA / EMP Report and the outcome of public hearing proceedings will be detailed in the Final EIA/EMP Report.

### 7.2 RISK ASSESSMENT

The methodology for the risk assessment has been based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad, vide Circular No.13 of 2002, dated 31<sup>st</sup> December, 2002. The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. Further, mechanisms responsible for these hazards are identified and their control measures, set to timetable are recorded along with pinpointed responsibilities.

The whole quarry operation will be carried out under the direction of a Qualified Competent Mine Manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad for all proposed projects. Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening.

Factors of risks involved due to human induced activities in connection with these proposed mining & allied activities with detailed analysis of causes and control measures for the mine is given in below Table 7.1.

**TABLE 7.1 RISK ASSESSMENT& CONTROL MEASURES**

S. No	Risk factors	Causes of risk	Control measures
1	Accidents due to explosives and heavy mining machineries	Improper handling and unsafe working practice	All safety precautions and provisions of Mine Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations; Workers will be sent to the Training in the nearby Group Vocational Training Centre Entry of unauthorized persons will be prohibited; Fire-fighting and first-aid provisions in the mine office complex and mining area; Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use

			<p>Working of quarry, as per approved plans and regularly updating the mine plans;</p> <p>Cleaning of mine faces on daily basis shall be daily done in order to avoid any overhang or undercut;</p> <p>Handling of explosives, charging and firing shall be carried out by competent persons only under the supervision of a Mine Manager;</p> <p>Maintenance and testing of all mining equipment as per manufacturer 's guidelines.</p>
2	Drilling	<p>Improper and unsafe practices</p> <p>Due to high pressure of compressed air, hoses may burst</p> <p>Drill Rod may break</p>	<p>Safe operating procedure established for drilling (SOP) will be strictly followed.</p> <p>Only trained operators will be deployed.</p> <p>No drilling shall be commenced in an area where shots have been fired until the blaster/blasting foreman has made a thorough Examination of all places,</p> <p>Drilling shall not be carried on simultaneously on the benches at places directly one above the other.</p> <p>Periodical preventive maintenance and replacement of worn-out accessories in the compressor and drill equipment as per operator manual.</p> <p>All drills unit shall be provided with wet drilling shall be maintained in efficient working in condition.</p> <p>Operator shall regularly use all the personal protective equipment.</p>
4	Blasting	<p>Fly rock, ground vibration, Noise and dust.</p> <p>Improper charging, stemming &amp; Blasting/fining of blast holes</p> <p>Vibration due to movement of vehicles</p>	<p>Restrict maximum charge per delay as per regulations and by optimum blast hole pattern, vibrations will be controlled within the permissible limit and blasting can be conducted safely.</p> <p>SOP for Charging, Stemming &amp; Blasting/Firing of Blast Holes will be followed by blasting crew during initial stage of operation</p> <p>Shots are fired during daytime only.</p> <p>All holes charged on any one day shall be fired on the same day.</p> <p>The danger zone will be distinctly demarcated (by means of red flags)</p>
5	Transportation	<p>Potential hazards and unsafe workings contributing to accident and injuries</p> <p>Overloading of material</p> <p>While reversal &amp; overtaking of vehicle</p>	<p>Before commencing work, drivers personally check the dumper/truck/tipper for oil(s), fuel and water levels, tyre inflation, general cleanliness and inspect the brakes, steering system, warning devices including automatically operated audio-visual reversing alarm, rear view mirrors, side indicator lights etc., are in good condition.</p> <p>Not allow any unauthorized person to ride on the vehicle nor allow any unauthorized person to operate the vehicle.</p> <p>Concave mirrors should be kept at all corners</p> <p>All vehicles should be fitted with reverse horn with one spotter at every tipping point</p> <p>Loading according to the vehicle capacity</p> <p>Periodical maintenance of vehicles as per operator manual</p>

		Operator of truck leaving his cabin when it is loaded.	
6	Natural calamities	Unexpected happenings	Escape Routes will be provided to prevent inundation of storm water Fire Extinguishers & Sand Buckets
7	Failure of Mine Benches and Pit Slope	Slope geometry, Geological structure	Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m height.

Source: Analysed and Proposed by FAE & EC

### 7.3 DISASTER MANAGEMENT PLAN

Natural disasters like Earthquake, Landslides have not been recorded in the past history as the terrain is categorized under seismic zone II. The area is far away from the sea hence the disaster due to heavy floods and tsunamis are not anticipated

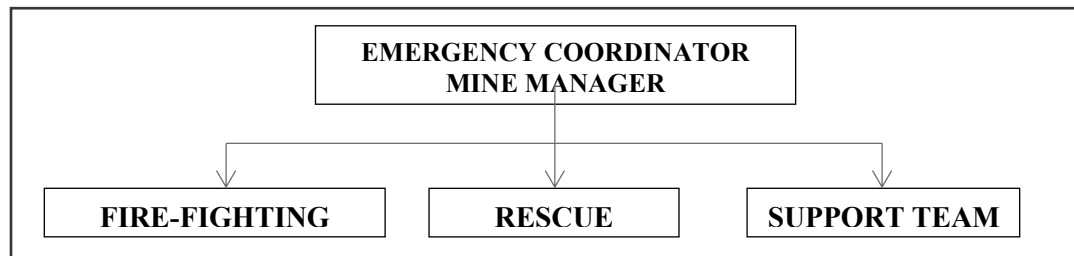
The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

The objective of the Disaster Management Plan is to make use of the combined resources of the mine and the outside services to achieve the following:

- Rescue and medical treatment of casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Secure the safe rehabilitation of affected area; and
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

In case a disaster takes place, despite preventive actions, disaster management will have to be done in line with the descriptions below. There is an organization proposed for dealing with the emergency situations and the coordination among key personnel and their team has been shown in Fig 7.1.

**FIGURE 7.1: DISASTER MANAGEMENT TEAM LAYOUT**



The emergency organization shall be headed by emergency coordinator who will be qualified competent mine manager. In his absence senior most people available at the mine shall be emergency coordinator till arrival of mine manager. There would be three teams for taking care of emergency situations – Fire-Fighting Team, Rescue Team and Support Team. The proposed composition of the teams is given in Table 7.2.

**TABLE 7.2: PROPOSED TEAMS TO DEAL WITH EMERGENCY SITUATION**

DESIGNATION	QUALIFICATION
<b>FIRE-FIGHTING TEAM</b>	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Team Member	Mines Foreman
Team Member	Mining Mate
<b>RESCUE TEAM</b>	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Team Member/ Incident Controller (IC)	Environment Officer
Team Member	Mining Foreman
<b>SUPPORT TEAM</b>	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Assistant Team Leader	Environment Officer
Team Member	Mining Mate
Security Team Leader/ Emergency Security Controller	Mines Foreman

Once the mine becomes operational, the above table along with names of personnel will be prepared and made easily available to workers. A mobile communication network and wireless shall connect Mine Emergency Control Room (MECR) to control various departments of the mine, fire station and neighbouring industrial units/mines.

### **Roles and responsibilities of emergency team –**

(a) Emergency coordinator (EC)

The emergency coordinator shall assume absolute control of site and shall be located at MECR.

(b) Incident controller (IC)

Incident controller shall be a person who shall go to the scene of emergency and supervise the action plan to overcome or contain the emergency. Shift supervisor or Environmental Officer shall assume the charge of IC.

(c) Communication and advisory team

The advisory and communication team shall consist of heads of Mining Departments i.e., Mines Manager

(d) Roll call coordinator

The Mine Foreman shall be Roll Call Coordinator. The roll call coordinator will conduct the roll call and will evacuate the mine personnel to assembly point. His prime function shall be to account for all personnel on duty.

(e) Search and rescue team

There shall be a group of people trained and equipped to carryout rescue operation of trapped personnel. The people trained in first aid and fire-fighting shall be included in search and rescue team.

(f) Emergency security controller

Emergency Security Controller shall be senior most security person located at main gate office and directing the outside agencies e.g. fire brigade, police, doctor and media men etc.,

### Emergency control procedure –

The onset of emergency, will in all probability, commence with a major fire or explosion or collapse of wall along excavation and shall be detected by various safety devices and also by members of operational staff on duty. If located by a staff member on duty, he (as per site emergency procedure of which he is adequately briefed) will go to nearest alarm call point, break glass and trigger off the alarms. He will also try his best to inform about location and nature of accident to the emergency control room. In accordance with work emergency procedure the following key activities will immediately take place to interpret and take control of emergency.

- On site fire crew led by a fireman will arrive at the site of incident with fire foam tenders and necessary equipment.
- Emergency security controller will commence his role from main gate office
- Incident controller shall rush to the site of emergency and with the help of rescue team and will start handling the emergency.
- Site main controller will arrive at MECR with members of his advisory and communication team and will assume absolute control of the site.
- He will receive information continuously from incident controller and give decisions and directions to:
  - Incident controller
  - Mine control rooms
  - Emergency security controller

### Proposed fire extinguishers at different locations –

The following type of fire extinguishers has been proposed at strategic locations within the mine.

**TABLE 7.3: PROPOSED FIRE EXTINGUISHERS AT DIFFERENT LOCATIONS**

LOCATION	TYPE OF FIRE EXTINGUISHERS
Electrical Equipment's	CO <sub>2</sub> type, foam type, dry chemical powder type
Fuel Storage Area	CO <sub>2</sub> type, foam type, dry chemical powder type, Sand bucket
Office Area	Dry chemical type, foam type

### Alarm system to be followed during disaster –

On receiving the message of disaster from Site Controller, fire-fighting team, the mine control room attendant will sound siren wailing for 5 minutes. Incident controller will arrange to broadcast disaster message through public address system. On receiving the message of "Emergency Over" from Incident Controller the emergency control room attendant will give "All Clear Signal", by sounding alarm straight for 2 minutes.

## 7.4 CUMULATIVE IMPACT STUDY

For easy representation of Proposed and Existing Quarries in the Cluster are given unique codes and identifies and studied in this EIA /EMP Report.

**TABLE 7.4: LIST OF QUARRIES WITHIN 500 METER RADIUS**

PROPOSED QUARRIES					
CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
P1	Thiru.R. Karthick, S/o. Rajendran, No.72, Kavilipalayampudhur, Velampalayam, Tiruppur District, Tamil Nadu – 641 652	Mudalipalayam	984/2A1(Part)	1.61.95 Ha	ToR Identification: T024B0108TN5280988 N Dated: 24/05/2024.
P2	Tmt. G. Susila, W/o. Gunasekaran, No. 1/241, Milk society opposite, Kuppusamynaidupuram, Semmipalayam, Palladam Tiruppur District-641 662	Mudalipalayam	986/B1(Part)	1.21.46 Ha	ToR Identification: T024B0108TN5642030 N Dated: 07/06/2024.
TOTAL EXTENT				2.83.41	
EXISTING QUARRIES					
CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
E-1	M/s. Sri Muthukumar Blue Metals, No. 94-C, Kundadam, Uthiyur Road, Kolumanguli Village, Dharapuram Taluk, Tiruppur District – 638 703.	Mudalipalayam	986/B2A (P)	2.45.0	22.01.2024 to 21.01.20234
TOTAL EXTENT				2.45.0	
TOTAL CLUSTER EXTENT				5.28.41	

- Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016

**TABLE 7.5: SALIENT FEATURES OF PROPOSAL “P1”**

Name of the Project	Thiru. R. Karthick Rough Stone and Gravel Quarry
S.F. No.	984/2A1 (Part)
Extent	1.61.95 ha
Village, Taluk and District	Mudalipalayam Village, Kangayam Taluk, Tiruppur District.
Land Type	It is a Patta Land, registered in the name of Thiru. B. Maheskumar vide patta No. 1035. The Applicant registered lease deed with the pattadhar
Toposheet No	58-F/09
Latitude between	10° 52' 29.32"N to 10° 52' 33.27"N
Longitude between	77° 31' 10.08"N to 77° 31' 15.88"E
Elevation of the area	295m AMSL
Lease period	5 Years
Mining Plan period	5 years

Proposed Depth of Mining	37m bgl (2m Gravel + 35m Rough stone)	
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	5,63,570	32,204
Mineable Reserves	1,89,560	24,000
Year wise Production for Five years	1,89,560	24,000
Peak Production	39,660	10,560
Ultimate Pit Dimension	150m (L) x 80m (W) x 37m(D) bgl	
Water Level in the region	58-62 m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and Controlled blasting using Slurry Explosives	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards Eastern side and altitude of the area is 295m above from Mean Sea level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the surface outcrops & nearby existing quarry pit situated on the eastern side.	
Machinery proposed	Jack Hammer	6 Nos
	Compressor	2 Nos
	Excavator with Bucket and Rock Breaker	1 No
	Tipplers	3 Nos
	Water Sprinkling Tanker	1 No
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone.	
Proposed Manpower Deployment	27 Nos	
Project Cost	Rs. 46,01,000/-	
EMP Cost	Rs. 3,80,000/-	
Total Project cost	Rs. 49,81,000/-	
CER Cost	Rs. 5,00,000/-	
Nearby Water Bodies	Varatukarai Odai	1.06Km SE
	Odai	6.1Km N
	Amaravathi River	8.1Km SE
Greenbelt Development Plan	Proposed to plant 810 Nos of trees considering 500 Nos of trees/ Ha criteria The plantation will be developed around the project site and nearby village roads	
Proposed Water Requirement	2.0 KLD	
Nearest Habitation	750m – South West	
Nearest Reserve Forest	Uthiyur R.F – 705.48 Km – North (Source - TNGIS)	
Nearest Wild Life Sanctuary	Vellode Birds Sanctuary – 43 Km – NE	

Source: Approved Mining Plan

**TABLE 7.5A: SALIENT FEATURES OF PROPOSAL “P2”**

Name of the Project	Tmt. G. Susila Rough Stone and Gravel Quarry
S.F. No.	986/B1 (Part)
Extent	1.21.46 ha
Village, Taluk and District	Mudalipalayam Village, Kangayam Taluk, Tiruppur District.
Land Type	It is a Patta Land, registered in the name of applicant (Tmt.G.Susila) vide patta No.1026.
Toposheet No	58-F/09
Latitude between	10° 52' 23.36"N to 10° 52' 27.95"N
Longitude between	77° 31' 03.24"N to 77° 31' 06.43"E
Elevation of the area	279m AMSL

Lease period	5 Years	
Mining Plan period	5 years	
Proposed Depth of Mining	42m bgl (2m Gravel + 40m Rough stone)	
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	3,68,926	8,396
Mineable Reserves	94,511	4,176
Year wise Production for Five years	94,511	4,176
Peak Production	19,526	4,176
Existing Pit Dimension	128m (L) x 84m (W) x 18m(D) bgl	
Ultimate Pit Dimension	128m (L) x 84m (W) x 42m(D) bgl	
Water Level in the region	58-62 m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and Controlled blasting using Slurry Explosives	
Previous History	The lease was previously operated by the Thiru.T.Gunasekaran vide proceeding's No. 384/Mines/2016, Dated: 16.04.2018 of the period of 16.04.2018 – 15.04.2023 with EC: Lr.No.SEIAA-TN/F.No.5898/1(a)/EC.No.3900/2016, Dated: 18.11.2016	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards Southeast side and altitude of the area is 279m above from Mean Sea level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the surface outcrops & nearby existing quarry pit situated on the eastern side.	
Machinery proposed	Jack Hammer	3 Nos
	Compressor	1 Nos
	Excavator with Bucket and Rock Breaker	1 No
	Tippers	2 Nos
	Water Sprinkling Tanker	1 No
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone.	
Proposed Manpower Deployment	20 Nos	
Project Cost	Rs. 37,17,000/-	
EMP Cost	Rs. 3,80,000/-	
Total Project cost	Rs. 40,97,000/-	
CER Cost	Rs. 5,00,000/-	
Nearby Water Bodies	Varatukarai Odai	1.07Km SE
	Odai	6.2Km N
	Amaravathi River	8.5Km SE
Greenbelt Development Plan	Proposed to plant 600 Nos of trees considering 500 Nos of trees/ Ha criteria The plantation will be developed around the project site and nearby village roads	
Proposed Water Requirement	1.0 KLD	
Nearest Habitation	500m – South West	
Nearest Reserve Forest	Uthiyur R.F – 705.48 Km – North (Source - TNGIS)	
Nearest Wild Life Sanctuary	Vellode Birds Sanctuary – 43 Km – NE	

Source: Approved Mining Plan



**TABLE 7.7: SALIENT FEATURES OF PROPOSAL “E1”**

Name of the Quarry	M/s. Sri Muthukumar Blue Metals Rough Stone & Gravel Quarry	
S.F.No.	986/B2A (P)	
Toposheet No	58-F/09	
Mining Period	10 years	
Latitude between	10°52'22.03"N to 10°52'28.08"N	
Longitude between	77°31'06.45"E to 77°31'11.48"E	
Year-wise production for Ten Years	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	4,10,385	38,250
Depth of Mining	45m	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Proposed Manpower Deployment	22	
Project Cost	54.77 lakhs	
CER Cost @ 2% of Project Cost	Rs.5,00,000/-	

Source: Approved Mining Plan

The Cumulative Impact is mainly anticipated due to drilling & blasting and excavation and transportation activities in all the quarries (proposed and existing) within the cluster and major impact anticipated is on Air & Noise Environment and Ground Vibrations due to blasting.

#### **Air Environment –**

Calculating the Cumulative Load of Mining within the cluster is as shown in table 7.16 & 7.17.

**TABLE 7.11: CUMULATIVE PRODUCTION LOAD OF ROUGH STONE**

Quarry	Production for Five & Ten-year plan period	Per Year Production in m <sup>3</sup>	Per Day Production in m <sup>3</sup>	Number of Lorry Load Per Day
P1	1,89,560	37,912	127	11
P2	94,511	18,903	64	6
<b>Total</b>	<b>2,84,071</b>	<b>56,815</b>	<b>191</b>	<b>17</b>
E1	4,10,385	41,038	137	12
<b>Total</b>	<b>4,10,385</b>	<b>41,038</b>	<b>137</b>	<b>12</b>
<b>Grand Total</b>	<b>6,94,456</b>	<b>97,853</b>	<b>328</b>	<b>29</b>

**TABLE 7.12: CUMULATIVE PRODUCTION LOAD OF GRAVEL**

Quarry	Production for five-year plan period	Per Year Production in m <sup>3</sup>	Per Day Production in m <sup>3</sup>	Number of Lorry Load Per Day
P1	24,000	8,000	27	3
P2	4,176	4,176	14	1
<b>Total</b>	<b>28,176</b>	<b>12,176</b>	<b>41</b>	<b>4</b>
E1	38,250	12,750	43	4
<b>Total</b>	<b>38,250</b>	<b>12,750</b>	<b>43</b>	<b>4</b>
<b>Grand Total</b>	<b>66,426</b>	<b>24,926</b>	<b>84</b>	<b>8</b>

On a cumulative basis considering the proposed quarries, it can be seen that the overall production of Rough Stone is 328m<sup>3</sup> per day and overall production of Gravel is 84m<sup>3</sup> per day with a capacity of 29trips of Rough Stone per day and 8Trips per day of Gravel from the cluster.

**Note:** Per day production of Rough Stone is calculated for 5 Years Lease Period and for Gravel production with 3 years production period. And the load of existing quarries is covered under existing environment of the cluster.

Based on the above production quantities the emissions due to various activities in all the 3 mines includes various activities like ground preparation, excavation, handling and transport of ore. These activities have been

analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 7.18.

**TABLE 7.13: EMISSION ESTIMATION FROM QUARRIES WITHIN 500 METER RADIUS**

<b>EMISSION ESTIMATION FOR QUARRY "P1"</b>				
	<b>Activity</b>	<b>Source type</b>	<b>Value</b>	<b>Unit</b>
Estimated Emission Rate for PM <sub>10</sub>	Drilling	Point Source	0.078292471	g/s
	Blasting	Point Source	0.000711565	g/s
	Mineral Loading	Point Source	0.041430870	g/s
	Haul Road	Line Source	0.002489953	g/s/m
	Overall Mine	Area Source	0.047514844	g/s
	Estimated Emission Rate for SO <sub>2</sub>	Overall Mine	Area Source	0.000512364
Estimated Emission Rate for NO <sub>x</sub>	Overall Mine	Area Source	0.000019179	g/s
<b>EMISSION ESTIMATION FOR QUARRY "P2"</b>				
	<b>Activity</b>	<b>Source type</b>	<b>Value</b>	<b>Unit</b>
Estimated Emission Rate for PM <sub>10</sub>	Drilling	Point Source	0.063299193	g/s
	Blasting	Point Source	0.000245813	g/s
	Mineral Loading	Point Source	0.038433938	g/s
	Haul Road	Line Source	0.002485838	g/s/m
	Overall Mine	Area Source	0.041701094	g/s
	Estimated Emission Rate for SO <sub>2</sub>	Overall Mine	Area Source	0.000239022
Estimated Emission Rate for NO <sub>x</sub>	Overall Mine	Area Source	0.000006837	g/s
<b>EMISSION ESTIMATION FOR QUARRY "E1"</b>				
	<b>Activity</b>	<b>Source type</b>	<b>Value</b>	<b>Unit</b>
Estimated Emission Rate for PM <sub>10</sub>	Drilling	Point Source	0.079664807	g/s
	Blasting	Point Source	0.000776152	g/s
	Mineral Loading	Point Source	0.041830135	g/s
	Haul Road	Line Source	0.002490738	g/s/m
	Overall Mine	Area Source	0.056225330	g/s
	Estimated Emission Rate for SO <sub>2</sub>	Overall Mine	Area Source	0.000583117
Estimated Emission Rate for NO <sub>x</sub>	Overall Mine	Area Source	0.000031738	g/s

Source: Emission Calculation

**TABLE 7.15: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER**

<b>PM<sub>10</sub> in µg/m<sup>3</sup></b>	
Background	42.5
Incremental	15.89
Resultant	58.4
NAAQ Norms	<b>100 µg/m<sup>3</sup></b>
<b>PM<sub>2.5</sub> in µg/m<sup>3</sup></b>	
Background	21.6
Incremental	8.83
Resultant	30.4
NAAQ Norms	<b>60 µg/ m<sup>3</sup></b>
<b>So<sub>2</sub> in µg/m<sup>3</sup></b>	
Background	6.4
Incremental	2.29
Resultant	8.7
NAAQ Norms	<b>80 µg/ m<sup>3</sup></b>

No2 in $\mu\text{g}/\text{m}^3$	
Background	20.4
11.61	12.67
Resultant	32.0
NAAQ Norms	<b>80 <math>\mu\text{g}/\text{m}^3</math></b>

### Noise Environment –

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks & HEMM. Cumulative Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities. Predictions have been carried out to compute the noise level at various distances around the different quarries within the 500 m radius.

For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using model based on first principle.

$$L_{p2} = L_{p1} - 20 \log (r_2/r_1) - A_{e1,2}$$

Where:

$L_{p1}$  &  $L_{p2}$  are sound levels at points located at distances  $r_1$  &  $r_2$  from the source.

$A_{e1,2}$  is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$L_{p_{total}} = 10 \log \{10^{(L_{p1}/10)} + 10^{(L_{p2}/10)} + 10^{(L_{p3}/10)} + \dots\}$$

Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are:

Source data has been computed taking into account of all the machinery and activities used in the mining process.

**TABLE 7.16: PREDICTED NOISE INCREMENTAL VALUES FROM CLUSTER**

Location ID	Background Value (Day) dB(A)	Incremental Value dB(A)	Total Predicted dB(A)	Residential Area Standards dB(A)
Habitation Near P1	45.6	42.6	47.4	55
Habitation Near P2	45.2	46.1	48.7	
Habitation Near E1	46.4	45.1	48.8	

Source: Lab Monitoring Data

The incremental noise level is found within the range of 53.5 – 54.8 dB (A) in Buffer zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations near habitations are within permissible limits of Residential Area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 (The Principal Rules were published in the Gazette of India, vide S.O.123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment(Protection) Act, 1986).

### Ground Vibrations

Ground vibrations due to mining activities in the all the 2 Mines within cluster are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc. However, the major source of ground vibration from the all the 4 mines is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground

vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements nearby the mining areas and may cause injury to persons or damage to the structures. Nearest Habitations from 2 mines respectively are as in below Table 7.18.

**TABLE 7.17: NEAREST HABITATION FROM EACH MINE**

Location ID	Distance & Direction
Habitation Near P1	750m- South West
Habitation Near P2	500m – South West
Habitation Near E1	560m - South West

The ground vibrations due to the blasting in all the mines are calculated using the empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K [R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

**TABLE 7.18: GROUND VIBRATIONS AT 2 MINES**

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	28	750	0.181
P2	14	500	0.198
E1	20	560	0.220

Source: Blasting Calculations

From the above table, the charge per blast is considered as maximum in each mine and the resultant PPV is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997.

#### **Socio Economic Environment –**

The 2 mines shall contribute towards CER and the community shall develop.

**TABLE 7.19: SOCIO ECONOMIC BENEFITS FROM EACH MINES**

Location ID	Project Cost	CER
P1	Rs. 49,81,000/-	Rs.5,00,000/-
P2	Rs. 40,97,000/-	Rs.5,00,000/-
E1	Rs.54,77,000/-	Rs. 5,00,000/-
<b>Total</b>	<b>Rs. 1,45,55,000/-</b>	<b>Rs.15,00,000/-</b>

As per para 6 (II) of the office memorandum, all the mines being a green field project & Capital Investment is ≤ 100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC.

- Proposed Projects shall fund towards CER – Rs 10,00,000/-

**TABLE 7.20: EMPLOYMENT BENEFITS FROM 3 MINES**

Description	Employment
P1	28
P2	20
<b>Total</b>	<b>48</b>
E1	22

<b>Total</b>	<b>22</b>
<b>Grand Total</b>	<b>70</b>

A total of 48 people will get employment due to 2 proposed mines in cluster and 22 people are already employed at existing mines.

**TABLE 7.21: GREENBELT DEVELOPMENT BENEFITS FROM 2 MINES**

CODE	No of Trees proposed to be planted	Survival %	Area Covered Sq.m	Name of the Species
P1	810	80%	The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development	Neem, Pinnata, Pongamia, Ashoka etc.,
P2	600			
<b>Total</b>	<b>1,410</b>			
E1	1,230			
<b>Total</b>	<b>1,230</b>			
<b>G.Total</b>	<b>2,640</b>			

Based on the Proposed Mining Plans it's anticipated that there shall growth of native species of Neem, Pinnata et., in the Cluster at a rate of 2,640 Trees Planted over a period of 5 Years with Survival Rate of 80% by proposed quarry.

## 7.5 PLASTIC WASTE MANAGEMENT PLAN

The project Proponent shall comply with Tamil Nadu Government Order (Ms) No. 84 Environment and Forest (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.

### Objective –

- To investigate the actual supply chain network of plastic waste.
- To identify and propose a sustainable plastic waste management by installing bins for collection of recyclables with all the plastic waste
- Preparation of a system design layout, and necessary modalities for implementation and monitoring.

**TABLE 7.22: ACTION PLAN TO MANAGE PLASTIC WASTE**

Sl.No.	Activity	Responsibility
1	Framing of Layout Design by incorporating provision of the Rules, user fee to be charged from waste generators for plastic waste management, penalties/fines for littering, burning plastic waste or committing any other acts of public nuisance	Mines Manager
2	Enforcing waste generators to practice segregation of bio-degradable, recyclable and domestic hazardous waste	Mines Manager
3	Collection of plastic waste	Mines Foreman
4	Setting up of Material Recovery Facilities	Mines Manager
5	Segregation of Recyclable and Non-Recyclable plastic waste at Material Recovery Facilities	Mines Foreman
6	Channelization of Recyclable Plastic Waste to registered recyclers	Mines Foreman
7	Channelization of Non-Recyclable Plastic Waste for use either in Cement kilns, in Road Construction	Mines Foreman
8	Creating awareness among all the stakeholders about their responsibility	Mines Manager
9	Surprise checking's of littering, open burning of plastic waste or committing any other acts of public nuisance	Mine Owner

Source: Proposed by FAE's and EC

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## 8.PROJECT BENEFITS

### 8.0 GENERAL

The Proposed Project for Quarrying Rough Stone and Gravel at Mudalipalayam Village aims to produce 2,84,071 m<sup>3</sup> Rough Stone over a period of 10 Years and Gravel 28,176 m<sup>3</sup> for period of 3 years. This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits.

- ☞ Increase in Employment Potential
- ☞ Improvement in Socio-Economic Welfare
- ☞ Improvement in Physical Infrastructure
- ☞ Improvement in Social infrastructure

### 8.1 EMPLOYMENT POTENTIAL

It is proposed to provide employment to about 48 persons for carrying out mining operations and give preference to the local people in providing employment in the three proposed quarries in the cluster. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project.

### 8.2 SOCIO-ECONOMIC WELFARE MEASURES PROPOSED

The impact of mining activity in the area will be more positive on the socio-economic environment in the immediate project impact area. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities.

### 8.3 IMPROVEMENT IN PHYSICAL INFRASTRUCTURE

The proposed quarries are located Mudalipalayam Village, Kangeyam Taluk and Tiruppur District of Tamil Nadu and the area have communications, roads and other facilities already well established. The following physical infrastructure facilities will further improve due to proposed mine.

- Road Transport facilities
- Communications
- Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine.

### 8.4 IMPROVEMENT IN SOCIAL INFRASTRUCTURE

Employment is expected during civil construction period, in trade, garbage lifting, sanitation and other ancillary services, Employment in these sectors will be primarily temporary or contractual and involvement of unskilled labour will be more. A major part of the labour force will be mainly from local villagers who are expected to engage themselves both in agriculture and mining activities. This will enhance their income and lead to overall economic growth of the area.

## 8.5 OTHER TANGIBLE BENEFITS

The proposed mine is likely to have other tangible benefits as given below.

- Indirect employment opportunities to local people in contractual works like construction of infrastructural facilities, transportation, sanitation, for supply of goods and services to the mine and other community services.
- Additional housing demand for rental accommodation will increase
- Cultural, recreation and aesthetic facilities will also improve
- Improvement in communication, transport, education, community development and medical facilities and overall change in employment and income opportunity
- The State Government will also benefit directly from the proposed mine, through increased revenue from royalties, cess, DMF, GST etc.,

## CORPORATE SOCIAL RESPONSIBILITY

The Project Proponent will take responsibility to develop awareness among all levels of their staff about CSR activities and the integration of social processes with business processes. Those involved with the undertaking of CSR activities will be provided with adequate training and re-orientation.

### CSR Cost Estimation

- CSR activities will be taken up in the Mudalipalayam village mainly contributing to education, health, training of women self-help groups and contribution to infrastructure etc., CSR budget is allocated as 2.5% of the profit.

## CORPORATE ENVIRONMENT RESPONSIBILITY

For the existing quarries Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018.

Proponent intends to spent Rs 5,00,000/- towards CER for the Government School near the project site the details are given below:

**TABLE 8.1 CER – ACTION PLAN**

Activity	CER
<ul style="list-style-type: none"> <li>• Renovation/ Construction of Existing Toilet</li> <li>• Providing Environmental Related books to the school Library</li> <li>• Carrying out plantation and maintenance in the school Ground</li> <li>• Any other requirements in consultation with the school Head master</li> </ul>	Rs 10,00,000/-

## **9. ENVIRONMENTAL COST BENEFIT ANALYSIS**

Not Applicable, Since Environmental Cost Benefit Analysis not recommended at the Scoping stage.



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## 10. ENVIRONMENTAL MANAGEMENT PLAN – P1

### 10.0. GENERAL

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in-built pollution abatement facilities at the proposed site. Good practices of Environmental Management plan will ensure to keep all the environmental parameters of the project in respect of Ambient Air quality, Water quality, Socio – economic improvement standards.

Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

### 10.1. ENVIRONMENTAL POLICY

The Project Proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

#### **The Proponent Thiru. R. Karthick will –**

- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities.
- Allocate necessary resources to ensure the implementation of the environmental policy.
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts.
- Implement monitoring programmes to provide early warning of any deficiency or unanticipated performance in environmental safeguards.
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement.

#### **Description of the Administration and Technical Setup –**

The Environment Monitoring Cell discussed under Chapter 6 will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level of each Proposed Quarry.

The said team will be responsible for:

- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- Co-ordination of the environment related activities within the project as well as with outside agencies
- Collection of health statistics of the workers and population of the surrounding villages
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme

- Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

## 10.2. LAND ENVIRONMENT MANAGEMENT –

Landscape of the area will be changed due to the quarrying operation, restoration of the land by converting the quarry pit into temporary reservoir and the remaining part of the area (un utilized areas, infrastructure, haul Roads) will be utilized for greenbelt development. There is no major vegetation in the project area during the course of quarrying operation and after completion of the quarrying operation thick plantation will be developed under greenbelt development programme.

**TABLE 10.1. PROPOSED CONTROLS FOR LAND ENVIRONMENT**

CONTROL	RESPONSIBILITY
Design vehicle wash-down areas so that all runoff water is captured and passed through oil water separators and sediment catchment devices.	Mines Manager
Refueling to be undertaken in a safe location, away from vehicle movement pathways & 100 m away of any watercourse Refueling activity to be under visual observation at all times. Drainage of refueling areas to sumps with oil/water separation	Mine Foreman & Mining Mate
Soil and groundwater testing as required following up a particular incident of contamination.	Mines Manager
At conceptual stage, the mining pits will be converted into Rain Water Harvesting. Remaining area will be converted into greenbelt area	Mines Manager
No external dumping i.e., outside the project area	Mine Foreman
Garland drains with catch pits / settlement traps to be provided all around the project area to prevent run off affecting the surrounding lands.	Mines Manager
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

## 10.3. SOIL MANAGEMENT

There overburden in the form of Gravel which will directly loaded into tippers for the filling and levelling of low-lying areas.

**TABLE 10.2. PROPOSED CONTROLS FOR SOIL MANAGEMENT**

CONTROL	RESPONSIBILITY
Surface run-off from the project boundary via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Mines Manager
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Mines Manager
Test soils for pH, EC, chloride, size & water holding capacity	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

#### 10.4. WATER MANAGEMENT

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mines office. The quarrying operation is proposed upto a depth of 37 m BGL, the water table in the area is 58-62 m below ground level, hence the proposed project will not intersect the Ground water table during entire quarry period.

**TABLE 10.3. PROPOSED CONTROLS FOR WATER ENVIRONMENT**

CONTROL	RESPONSIBILITY
To maximize the reuse of pit water for water supply	Mines Foreman
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Mines Manager
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations	Mines Manager
Ensure there is no process effluent generation or discharge from the project area into water bodies	Mines Foreman
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Foreman
Monthly or after rainfall, inspection for performance of water management structures and systems	Mines Manager
Conduct ground water and surface water monitoring for parameters specified by CPCB	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

#### 10.5. AIR QUALITY MANAGEMENT

The proposed quarrying activity would result in the increase of particulate matter concentrations due to fugitive dust. Daily water sprinkling on the haul roads, approach roads in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to truck mobility. It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements

**TABLE 10.4. PROPOSED CONTROLS FOR AIR ENVIRONMENT**

CONTROL	RESPONSIBILITY
Generation of dust during excavation is minimized by daily (twice) water sprinkling on working face and daily (twice) water sprinkling on haul road	Mines Manager
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself is implemented	Mines Manager
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Mines Manager
Provision of Dust Mask to all workers	Mines Manager
Greenbelt development all along the periphery of the project area	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

#### 10.6. NOISE POLLUTION CONTROL

There will be intermittent noise levels due to vehicular movement, trucks loading, drilling and blasting and cutting activities. No mining activities are planned during night time.

**TABLE 10.5.: PROPOSED CONTROLS FOR NOISE ENVIRONMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
Development of thick greenbelt all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained	Mines Manager
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Foreman
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Mines Manager
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Mining Mate
Provision of effective silencers for mining machinery and transport vehicles	Mines Manager
Provision of sound proof AC operator cabins to HEMM	Mines Manager
Sharp drill bits are used to minimize noise from drilling	Mines Foreman
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring are carried out in the project area and in surrounding villages to assess the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Mines Manager
Reduce maximum instantaneous charge using delays while blasting	Mining Mate
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination	Mines Manager
Undertake noise or vibration monitoring	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

### 10.7. GROUND VIBRATION AND FLY ROCK CONTROL

The Rough stone quarry operation creates vibration due to the blasting and movement of Heavy Earth moving machineries, fly rocks due to the blasting.

**TABLE 10.6.: PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
Controlled blasting using delay detonators will be carried out to maintain the PPV value (below 8Hz) well within the prescribed standards of DGMS	Mines Manager
Drilling and blasting will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Suitable spacing and burden will be maintained to avoid misfire / fly rocks	Manager Mines
Number of blast holes will be restricted to control ground vibrations	Manager Mines
Blasting will be carried out only during noon time	Mining Mate
Undertake noise or vibration monitoring	Mines Manager
ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material	Mines Foreman

Source: Proposed by FAE's & EIA Coordinator

### 10.8. BIOLOGICAL ENVIRONMENT MANAGEMENT

The proponent will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,

Following control measures are proposed for its management and will be the responsibility of the Mines Manager.

- Greenbelt development all along the safety barrier of the project area

- It is also proposed to implement the greenbelt development programme and post plantation status will be regularly checked for every season.
- The main attributes that retard the survival of sapling is fugitive dust, this fugitive dust can be controlled by water sprinkling on the haul roads and installing a sprinkler unit near the newly planted area.
- Year wise greenbelt development will be recorded and monitored
  - Based on the area of plantation.
  - Period of plantation
  - Type of plantation
  - Spacing between the plants
  - Type of manuring and fertilizers and its periods
  - Lopping period, interval of watering
  - Survival rate
  - Density of plantation
- The ultimate reclamation planned leaves a congenial environment for development of flora & immigration of small fauna through green belt and water reservoir. The green belt and water reservoir developed within the Project at the end of mine life will attract the birds and animals towards the project area in the post mining period.

### 10.8.1. Green Belt Development Plan

About 2500 nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area with survival rate 80%. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

**TABLE 10.7: PROPOSED GREENBELT ACTIVITIES**

Year	No. of trees proposed to be planted	Area to be covered	Name of the species
I	810	The plantation is along the safety distance, village road etc..	Neem, Pongamia, Vilvam, Panam, etc.,

Source: Approved Mining plan

The objectives of the greenbelt development plan are –

- Provide a green belt around the periphery of the quarry area to combat the dispersal of dust in the adjoining areas,
- Protect the erosion of the soil, Conserve moisture for increasing ground water recharging,
- Restore the ecology of the area, restore aesthetic beauty of the locality and meet the requirement of fodder, fuel and timber of the local community.

A well-planned Green Belt with multi rows (three tiers) preferably with long canopy leaves shall be developed with dense plantations around the boundary and haul roads to prevent air, dust noise propagation to undesired places and efforts will be taken for the enhancement of survival rate.

### 10.8.2. Species Recommended for Plantation

Following points have been considered while recommending the species for plantation:

- Creating of bio-diversity.
- Fast growing, thick canopy cover, perennial and evergreen large leaf area,
- Efficient in absorbing pollutants without major effects on natural growth

**TABLE 10.8. RECOMMENDED SPECIES FOR THE PLANTSATION**

Sl.No	Name of the plant (Botanical)	Common Name	Habit
1	<i>Aegle marmelos</i>	Vilvam	Tree
2	<i>Bauhinia racemose</i>	Aathi	Tree
3	<i>Thespesia populnea</i>	Puvarasu	Tree
4	<i>Pongamia pinnata</i>	Pungam	Tree

Source: Proposed by FAE's & EIA Coordinator

## 10.9. OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

Occupational safety and health are very closely related to productivity and good employer-employee relationship. The main factors of occupational health impact in quarries are fugitive dust and noise. Safety of employees during quarrying operation and maintenance of mining equipment will be taken care as per Mines Act 1952 and Rule 29 of Mines Rules 1955. To avoid any adverse effect on the health of workers due to dust, noise and vibration sufficient measures have been provided.

### 10.9.1. Medical Surveillance and Examinations –

The health status of workers in the mine will be regularly monitored under an occupational surveillance program. Under this program, all the employees are subjected to a detailed medical examination at the time of employment. The medical examination covers the following tests under mines act 1952.

- General Physical Examination and Blood Pressure
- X-ray Chest and ECG
- Sputum test
- Detailed Routine Blood and Urine examination

The medical histories of all employees will be maintained in a standard format annually. Thereafter, the employees will be subject to medical examination annually. The below tests keep upgrading the database of medical history of the employees.

**TABLE 10.9. MEDICAL EXAMINATION SCHEDULE**

Sl.No	Activities	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year
1	Initial Medical Examination (Mine Workers)					
A	Physical Check-up					
B	Psychological Test					
C	Audiometric Test					
D	Respiratory Test					
2	Periodical Medical Examination (Mine Workers)					
A	Physical Check - up					
B	Audiometric Test					
C	Eye Check - up					
D	Respiratory Test					
3	Medical Camp (Mine Workers & Nearby Villagers)					
4	Training (Mine Workers)					

### 10.9.2 Proposed Occupational Health and Safety Measures –

- The mine site will have adequate drinking water supply so that workers do not get dehydrated.
- Lightweight and loose-fitting clothes having light colours will be preferred to wear.

- Noise exposure measurements will be taken to determine the need for noise control strategies.
- The personal protective equipment will be provided for mine workers.
- At noisy working activity, exposure time will be minimized.
- Dust generating sources will be identified and proper control measure will be adopted.
- Periodic medical examinations will be provided for all workers.
- In respect of contract work, safety code for contractors and workers will be implemented. They will be allowed to work under strict supervision of statutory person/officials only after they will impart training at vocational training centres. All personal protective equipment's will be provided to them.
- A safety committee meeting every month will be organized to discuss the safety of the mines and the persons employed.
- Celebration of annual mines safety week and environmental week in order to develop safety awareness and harmony amongst employees and co quarry owners.

**FIGURE 10.1.: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS**



### **10.9.3: Health and Safety Training Programme**

The Proponent will provide special induction program along with machinery manufacturers for the operators and co-operators to run and maintain the machinery effectively and efficiently. The training program for the supervisors and office staffs will be arranged in the Group Vocational Training Centres in the State and engage Environmental Consultants to provide periodical training to all the employees to carry out the mining operation in an eco-friendly manner as per Metalliferous Mines Regulation, 1961.

### **10.9.4.: Budgetary Provision for Environmental Management –**

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 10.11 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

**TABLE 10.10: EMP BUDGET FOR PROPOSED PROJECT**

Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring
<b>Air Environment</b>	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	16195	16195
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	800000	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance - 6 Units	150000	15000
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Truck/Dumper deployed - 4 Units	20000	1000
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	32390
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
<b>Noise Environment</b>	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0



	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Compentent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	492856
<b>Waste Management</b>	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
<b>Mine Closure</b>	1. Progressive Closure Activity - Surface Runoff management	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	16195	5000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	323900	10000
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 810 Trees - (530 Inside Lease Area & 280 Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	106000	15900
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	84000	8400

	4. Implementation of Final Mine Closure Activity as per Approved Mining Plan on Last Year	Few activities already covered as progressive closure activities as greenbelt development, wire fencing, garland drain. *For Final Closure Activities 15% of the proposed closure cost will be spent during the final mine closure stage - Last Year	67500	0
	5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site	1706040	0
<b>Implementation of EC, Mining Plan &amp; DGMS Condition</b>	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	50000
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee) - 28 Employees	112000	28000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	28000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	3239
	Slope stability action plan	Slope stability action plan in the end of fourth year plan period	200000	0
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	80975	10000

	/HEMMs. Flaggers will be deployed for traffic management			
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 <sup>st</sup> Class / 2 <sup>nd</sup> Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000
<b>CER</b>	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Detailed Description in following slides and Budget allocation is included as per MoeEF & CC OM	500000	0
<b>TOTAL</b>			<b>2569265</b>	<b>1622980</b>

\*Marked cost is already discussed in the mining plan hence that is not included in the total Environmental Management plan cost Total Cost for the five years.

Year	Total Cost
1 <sup>st</sup>	₹ 41,92,245/-
2 <sup>nd</sup>	₹ 17,04,129/-
3 <sup>rd</sup>	₹ 17,89,335/-
4 <sup>th</sup>	₹ 18,78,802/-
5 <sup>th</sup>	₹ 20,40,242/-

Total Cost for 5 years – Rs.116 Lakhs

Cost inflation 5% per annum

Note: This Environmental Management plan cost will vary according to the public consultation comments

**10.10.: CONCLUSION –**

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

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## 10. ENVIRONMENTAL MANAGEMENT PLAN – P2

### 10.0. GENERAL

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in-built pollution abatement facilities at the proposed site. Good practices of Environmental Management plan will ensure to keep all the environmental parameters of the project in respect of Ambient Air quality, Water quality, Socio – economic improvement standards.

Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

### 10.1. ENVIRONMENTAL POLICY

The Project Proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

#### **The Proponent Tmt. G. Susila will –**

- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities.
- Allocate necessary resources to ensure the implementation of the environmental policy.
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts.
- Implement monitoring programmes to provide early warning of any deficiency or unanticipated performance in environmental safeguards.
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement.

#### **Description of the Administration and Technical Setup –**

The Environment Monitoring Cell discussed under Chapter 6 will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level of each Proposed Quarry.

The said team will be responsible for:

- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- Co-ordination of the environment related activities within the project as well as with outside agencies
- Collection of health statistics of the workers and population of the surrounding villages
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme

- Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

## 10.2. LAND ENVIRONMENT MANAGEMENT –

Landscape of the area will be changed due to the quarrying operation, restoration of the land by converting the quarry pit into temporary reservoir and the remaining part of the area (un utilized areas, infrastructure, haul Roads) will be utilized for greenbelt development. There is no major vegetation in the project area during the course of quarrying operation and after completion of the quarrying operation thick plantation will be developed under greenbelt development programme.

**TABLE 10.1. PROPOSED CONTROLS FOR LAND ENVIRONMENT**

CONTROL	RESPONSIBILITY
Design vehicle wash-down areas so that all runoff water is captured and passed through oil water separators and sediment catchment devices.	Mines Manager
Refueling to be undertaken in a safe location, away from vehicle movement pathways & 100 m away of any watercourse Refueling activity to be under visual observation at all times. Drainage of refueling areas to sumps with oil/water separation	Mine Foreman & Mining Mate
Soil and groundwater testing as required following up a particular incident of contamination.	Mines Manager
At conceptual stage, the mining pits will be converted into Rain Water Harvesting. Remaining area will be converted into greenbelt area	Mines Manager
No external dumping i.e., outside the project area	Mine Foreman
Garland drains with catch pits / settlement traps to be provided all around the project area to prevent run off affecting the surrounding lands.	Mines Manager
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

## 10.3. SOIL MANAGEMENT

There overburden in the form of Gravel which will directly loaded into tippers for the filling and levelling of low-lying areas.

**TABLE 10.2. PROPOSED CONTROLS FOR SOIL MANAGEMENT**

CONTROL	RESPONSIBILITY
Surface run-off from the project boundary via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Mines Manager
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Mines Manager
Test soils for pH, EC, chloride, size & water holding capacity	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

#### 10.4. WATER MANAGEMENT

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mines office. The quarrying operation is proposed upto a depth of 42 m BGL, the water table in the area is 58-62 m below ground level, hence the proposed project will not intersect the Ground water table during entire quarry period.

**TABLE 10.3. PROPOSED CONTROLS FOR WATER ENVIRONMENT**

CONTROL	RESPONSIBILITY
To maximize the reuse of pit water for water supply	Mines Foreman
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Mines Manager
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations	Mines Manager
Ensure there is no process effluent generation or discharge from the project area into water bodies	Mines Foreman
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Foreman
Monthly or after rainfall, inspection for performance of water management structures and systems	Mines Manager
Conduct ground water and surface water monitoring for parameters specified by CPCB	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

#### 10.5. AIR QUALITY MANAGEMENT

The proposed quarrying activity would result in the increase of particulate matter concentrations due to fugitive dust. Daily water sprinkling on the haul roads, approach roads in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to truck mobility. It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements

**TABLE 10.4. PROPOSED CONTROLS FOR AIR ENVIRONMENT**

CONTROL	RESPONSIBILITY
Generation of dust during excavation is minimized by daily (twice) water sprinkling on working face and daily (twice) water sprinkling on haul road	Mines Manager
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself is implemented	Mines Manager
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Mines Manager
Provision of Dust Mask to all workers	Mines Manager
Greenbelt development all along the periphery of the project area	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

#### 10.6. NOISE POLLUTION CONTROL

There will be intermittent noise levels due to vehicular movement, trucks loading, drilling and blasting and cutting activities. No mining activities are planned during night time.

**TABLE 10.5.: PROPOSED CONTROLS FOR NOISE ENVIRONMENT**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
Development of thick greenbelt all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained	Mines Manager
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Foreman
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Mines Manager
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Mining Mate
Provision of effective silencers for mining machinery and transport vehicles	Mines Manager
Provision of sound proof AC operator cabins to HEMM	Mines Manager
Sharp drill bits are used to minimize noise from drilling	Mines Foreman
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring are carried out in the project area and in surrounding villages to assess the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Mines Manager
Reduce maximum instantaneous charge using delays while blasting	Mining Mate
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination	Mines Manager
Undertake noise or vibration monitoring	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

### 10.7. GROUND VIBRATION AND FLY ROCK CONTROL

The Rough stone quarry operation creates vibration due to the blasting and movement of Heavy Earth moving machineries, fly rocks due to the blasting.

**TABLE 10.6.: PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK**

<b>CONTROL</b>	<b>RESPONSIBILITY</b>
Controlled blasting using delay detonators will be carried out to maintain the PPV value (below 8Hz) well within the prescribed standards of DGMS	Mines Manager
Drilling and blasting will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Suitable spacing and burden will be maintained to avoid misfire / fly rocks	Manager Mines
Number of blast holes will be restricted to control ground vibrations	Manager Mines
Blasting will be carried out only during noon time	Mining Mate
Undertake noise or vibration monitoring	Mines Manager
ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material	Mines Foreman

Source: Proposed by FAE's & EIA Coordinator

### 10.8. BIOLOGICAL ENVIRONMENT MANAGEMENT

The proponent will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,

Following control measures are proposed for its management and will be the responsibility of the Mines Manager.

- Greenbelt development all along the safety barrier of the project area



- It is also proposed to implement the greenbelt development programme and post plantation status will be regularly checked for every season.
- The main attributes that retard the survival of sapling is fugitive dust, this fugitive dust can be controlled by water sprinkling on the haul roads and installing a sprinkler unit near the newly planted area.
- Year wise greenbelt development will be recorded and monitored
  - Based on the area of plantation.
  - Period of plantation
  - Type of plantation
  - Spacing between the plants
  - Type of manuring and fertilizers and its periods
  - Lopping period, interval of watering
  - Survival rate
  - Density of plantation
- The ultimate reclamation planned leaves a congenial environment for development of flora & immigration of small fauna through green belt and water reservoir. The green belt and water reservoir developed within the Project at the end of mine life will attract the birds and animals towards the project area in the post mining period.

### 10.8.1. Green Belt Development Plan

About 610 nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area with survival rate 80%. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

**TABLE 10.7: PROPOSED GREENBELT ACTIVITIES**

Year	No. of tress proposed to be planted	Area to be covered	Name of the species
I	600	The plantation is along the safety distance, village road etc..	Neem, Pongamia, Vilvam, Panam, etc.,

Source: Approved Mining plan

The objectives of the greenbelt development plan are –

- Provide a green belt around the periphery of the quarry area to combat the dispersal of dust in the adjoining areas,
- Protect the erosion of the soil, Conserve moisture for increasing ground water recharging,
- Restore the ecology of the area, restore aesthetic beauty of the locality and meet the requirement of fodder, fuel and timber of the local community.

A well-planned Green Belt with multi rows (three tiers) preferably with long canopy leaves shall be developed with dense plantations around the boundary and haul roads to prevent air, dust noise propagation to undesired places and efforts will be taken for the enhancement of survival rate.

### 10.8.2. Species Recommended for Plantation

Following points have been considered while recommending the species for plantation:

- Creating of bio-diversity.
- Fast growing, thick canopy cover, perennial and evergreen large leaf area,
- Efficient in absorbing pollutants without major effects on natural growth

**TABLE 10.8. RECOMMENDED SPECIES FOR THE PLANTSATION**

Sl.No	Name of the plant (Botanical)	Common Name	Habit
1	<i>Aegle marmelos</i>	Vilvam	Tree
2	<i>Bauhinia racemose</i>	Aathi	Tree
3	<i>Thespesia populnea</i>	Puvarasu	Tree
4	<i>Pongamia pinnata</i>	Pungam	Tree

Source: Proposed by FAE's & EIA Coordinator

## 10.9. OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

Occupational safety and health are very closely related to productivity and good employer-employee relationship. The main factors of occupational health impact in quarries are fugitive dust and noise. Safety of employees during quarrying operation and maintenance of mining equipment will be taken care as per Mines Act 1952 and Rule 29 of Mines Rules 1955. To avoid any adverse effect on the health of workers due to dust, noise and vibration sufficient measures have been provided.

### 10.9.1. Medical Surveillance and Examinations –

The health status of workers in the mine will be regularly monitored under an occupational surveillance program. Under this program, all the employees are subjected to a detailed medical examination at the time of employment. The medical examination covers the following tests under mines act 1952.

- General Physical Examination and Blood Pressure
- X-ray Chest and ECG
- Sputum test
- Detailed Routine Blood and Urine examination

The medical histories of all employees will be maintained in a standard format annually. Thereafter, the employees will be subject to medical examination annually. The below tests keep upgrading the database of medical history of the employees.

**TABLE 10.9. MEDICAL EXAMINATION SCHEDULE**

Sl.No	Activities	1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	4 <sup>th</sup> Year	5 <sup>th</sup> Year
1	Initial Medical Examination (Mine Workers)					
A	Physical Check-up					
B	Psychological Test					
C	Audiometric Test					
D	Respiratory Test					
2	Periodical Medical Examination (Mine Workers)					
A	Physical Check - up					
B	Audiometric Test					
C	Eye Check - up					
D	Respiratory Test					
3	Medical Camp (Mine Workers & Nearby Villagers)					
4	Training (Mine Workers)					

### 10.9.2 Proposed Occupational Health and Safety Measures –

- The mine site will have adequate drinking water supply so that workers do not get dehydrated.
- Lightweight and loose-fitting clothes having light colours will be preferred to wear.

- Noise exposure measurements will be taken to determine the need for noise control strategies.
- The personal protective equipment will be provided for mine workers.
- At noisy working activity, exposure time will be minimized.
- Dust generating sources will be identified and proper control measure will be adopted.
- Periodic medical examinations will be provided for all workers.
- In respect of contract work, safety code for contractors and workers will be implemented. They will be allowed to work under strict supervision of statutory person/officials only after they will impart training at vocational training centres. All personal protective equipment's will be provided to them.
- A safety committee meeting every month will be organized to discuss the safety of the mines and the persons employed.
- Celebration of annual mines safety week and environmental week in order to develop safety awareness and harmony amongst employees and co quarry owners.

**FIGURE 10.1.: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS**



### **10.9.3: Health and Safety Training Programme**

The Proponent will provide special induction program along with machinery manufacturers for the operators and co-operators to run and maintain the machinery effectively and efficiently. The training program for the supervisors and office staffs will be arranged in the Group Vocational Training Centres in the State and engage Environmental Consultants to provide periodical training to all the employees to carry out the mining operation in an eco-friendly manner as per Metalliferous Mines Regulation, 1961.

### **10.9.4.: Budgetary Provision for Environmental Management –**

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 10.11 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

**TABLE 10.10: EMP BUDGET FOR PROPOSED PROJECT**

Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring
<b>Air Environment</b>	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	12146	12146
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	800000	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance - 3 Units	75000	7500
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Truck/Dumper deployed - 3 Units	15000	750
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	24292
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
<b>Noise Environment</b>	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Competent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000

	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	245729
<b>Waste Management</b>	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
<b>Mine Closure</b>	1. Progressive Closure Activity - Surface Runoff management	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	12146	5000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	242920	10000
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 810 Trees - (530 Inside Lease Area & 280 Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	90000	13500
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	45000	4500
	4. Implementation of Final Mine Closure Activity as per Approved Mining Plan on Last Year	Few activities already covered as progressive closure activities as greenbelt development, wire fencing, garland drain. *For Final Closure Activities 15% of the proposed closure cost will be spent during the final mine closure stage - Last Year	35400	0
5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site	850599	0	
<b>Implementation of EC, Mining Plan &amp; DGMS Condition</b>	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	50000
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee) - 20 Employees	80000	20000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	20000

	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	2429.2
	Slope stability action plan	Slope stability action plan in the end of fourth year plan period	200000	0
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	60730	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 <sup>st</sup> Class / 2 <sup>nd</sup> Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000
<b>CER</b>	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Detailed Description in following slides and Budget allocation is included as per MoeEF & CC OM	500000	0
<b>TOTAL</b>			<b>2292942</b>	<b>1332846</b>

\*Marked cost is already discussed in the mining plan hence that is not included in the total Environmental Management plan cost Total Cost for the five years.

Year	Total Cost
1 <sup>st</sup>	₹ 36,25,788/-
2 <sup>nd</sup>	₹ 13,99,488/-
3 <sup>rd</sup>	₹ 14,69,462/-
4 <sup>th</sup>	₹ 15,42,936/-
5 <sup>th</sup>	₹ 16,55,482/-

Total Cost for 5 years – Rs.97 Lakhs

Cost inflation 5% per annum

Note: This Environmental Management plan cost will vary according to the public consultation comments

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**10.10.: CONCLUSION –**

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

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## 11. SUMMARY AND CONCLUSION

This EIA & EMP report prepared for the Mudalipalayam Rough Stone and Gravel Quarry project located in Mudalipalayam Village, Kangeyam Taluk and Tiruppur District. Project falls in the Cluster category consist of 2 Proposed and 1 Existing Quarries falls under “B” category as per MoEF & CC Notification S.O. 3977 (E).

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B-1 and appraised by SEAC/ SEIAA as well as for cluster situation.

The proposed project is categorized under category “B1” Activity 1(a) (mining lease area in cluster situation) and will be considered at SEIAA – TN after conducting Public Hearing and Submission of EIA/EMP Report for Grant of Environmental Clearance. “Draft EIA report prepared on the basis of ToR issued for carrying out public hearing for the grant of Environmental Clearance from SEIAA, Tamil Nadu”.

Environmental monitoring and audit mechanism have been recommended before and after commencement of the project, where necessary, to verify the accuracy of the EIA predictions and the effectiveness of recommended mitigation measures.

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the months March to May 2024 for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suitable mitigation measures for likely adverse impacts due to the proposed project is suggested individually for the respective proposed project under Chapter 10.

The project proponent ensures to obtain necessary clearances and quarrying will be carried out as per rules and regulations. The Mining Activity will be carried out in a phased manner as per the approved mining plan after obtaining EC, CTO from TNPCB, execution of lease deed and obtaining DGMS Permission and working will be carried out under the supervision of Competent Persons employed. Overall, the EIA report has predicted that the project will comply with all environment standards and legislation after commencement of the project and operational stage mitigation measures are implemented.

Mining operations has positive impact on environment and socio economy such as landscape improvement, water as by-product, economy development and better public services, providing and supply of Rough Stone as per market demand. Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for nearly 48 people directly in the proposed projects and indirectly around 75 people.

As discussed, it is safe to say that the proposed quarries are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigate technique, as well as to serve as biological indicators for the pollutants released from the Mudalipalayam Rough Stone and Gravel Quarry (Extent – 5.28.41 ha).

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## 12. DISCLOSURE OF CONSULTANT

Mudalipalayam Rough Stone and Gravel Quarry have engaged with M/s Geo Exploration and Mining Solutions, an Accredited Organization under Quality Council of India – National Accreditation Board for Education & Training, New Delhi, for carrying out the EIA Study as per the ToR Issued for the proposed project.

Name and address of the consultancy:

### GEO EXPLORATION AND MINING SOLUTIONS

No 17, Advaita Ashram Road,

Alagapuram, Salem – 636 004

Tamil Nadu, India

Email: info@geoexploration@gmail.com

Web: [www.gemssalem.com](http://www.gemssalem.com)

Phone: 0427 2431989.

The Accredited Experts and associated members who were engaged for this EIA study as given below –

Sl.No.	Name of the expert	In house/ Empanelled	EIA Coordinator		FAE	
			Sector	Category	Sector	Category
1	Dr. M. Ifthikhar Ahmed	In-house	1	A	WP GEO SC	B A A
2	Dr. P. Thangaraju	In-house	-	-	HG GEO	A A
3	Mr. A. Jagannathan	In-house	-	-	AP NV SHW	B A B
4	Mr. N. Senthilkumar	Empanelled	38 28	B B	AQ WP RH	B B A
5	Mrs. Jisha parameswaran	In-house	-	-	SW	B
6	Mr. Govindasamy	In-house	-	-	WP	B
7	Mrs. K. Anitha	In-house	-	-	SE	A
8	Mrs. Amirtham	In-house	-	-	EB	B
9	Mr. Alagappa Moses	Empanelled	-	-	EB	A
10	Mr. A. Allimuthu	In-house	-	-	LU	B
11	Mr. S. Pavel	Empanelled	-	-	RH	B
12	Mr. J. R. Vikram Krishna	Empanelled	-	-	SHW RH	A A

Abbreviations			
EC	EIA Coordinator	EB	Ecology and bio-diversity
AEC	Associate EIA Coordinator	NV	Noise and vibration
FAE	Functional Area Expert	SE	Socio economics
FAA	Functional Area Associates	HG	Hydrology, ground water and water conservation
TM	Team Member	SC	Soil conservation
GEO	Geology	RH	Risk assessment and hazard management
WP	Water pollution monitoring, prevention and control	SHW	Solid and hazardous wastes
AP	Air pollution monitoring, prevention and control	MSW	Municipal Solid Wastes
LU	Land Use	ISW	Industrial Solid Wastes
AQ	Meteorology, air quality modeling, and prediction	HW	Hazardous Wastes

## DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

This EIA/EMP for Mudalipalayam Rough Stone & Gravel Quarry over a Cluster Extent of 5.28.41 ha in Mudalipalayam Village of Kangeyam Taluk, Tiruppur District of Tamil Nadu is prepared as per the Generic Structure of EIA Guidelines manual. It is also certified that information furnished in the above EIA study are true and correct to the best of our knowledge.

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

Name: **Dr. M. Ifthikhar Ahmed**

Designation: **EIA Coordinator**

Date & Signature:




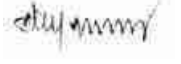













Period of Involvement: **January 2019 to till date**

### Associated Team Member with EIA Coordinator:

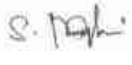



1. Mr.P. Viswanathan
2. Mr. M. Santhoshkumar
3. Mr. S. Ilavarasan

### FUNCTIONAL AREA EXPERTS ENGAGED IN THE PROJECT

Sl. No	Functional Area	Involvement	Name of the Expert/s	Signature
1	AP	<ul style="list-style-type: none"> <li>▪ Identification of different sources of air pollution due to the proposed mine activity</li> <li>▪ Prediction of air pollution and propose mitigation measures / control measures</li> </ul>	Mr. A. Jagannathan	
2	WP	<ul style="list-style-type: none"> <li>▪ Suggesting water treatment systems, drainage facilities</li> <li>▪ Evaluating probable impacts of effluent/waste water discharges into the receiving environment/water bodies and suggesting control measures.</li> </ul>	Dr. M. Ifthikhar Ahmed	
			Mr. N. Senthilkumar	
3	HG	<ul style="list-style-type: none"> <li>▪ Interpretation of ground water table and predict impact and propose mitigation measures.</li> <li>▪ Analysis and description of aquifer Characteristics</li> </ul>	Dr. P. Thangaraju	
4	GEO	<ul style="list-style-type: none"> <li>▪ Field Survey for assessing the regional and local geology of the area.</li> <li>▪ Preparation of mineral and geological maps.</li> <li>▪ Geology and Geo morphological analysis/description and Stratigraphy/Lithology.</li> </ul>	Dr. M. Ifthikhar Ahmed	
			Dr. P. Thangaraju	
5	SE	<ul style="list-style-type: none"> <li>▪ Revision in secondary data as per Census of India, 2011.</li> <li>▪ Impact Assessment &amp; Preventive Management Plan</li> <li>▪ Corporate Environment Responsibility.</li> </ul>	Mrs. K. Anitha	
6	EB	<ul style="list-style-type: none"> <li>▪ Collection of Baseline data of Flora and Fauna.</li> <li>▪ Identification of species labelled as Rare, Endangered and threatened as per IUCN list.</li> </ul>	Mrs. Amirtham	

		<ul style="list-style-type: none"> <li>Impact of the project on flora and fauna.</li> <li>Suggesting species for greenbelt development.</li> </ul>	Mr. Alagappa Moses	
7	RH	<ul style="list-style-type: none"> <li>Identification of hazards and hazardous substances</li> <li>Risks and consequences analysis</li> <li>Vulnerability assessment</li> <li>Preparation of Emergency Preparedness Plan</li> <li>Management plan for safety.</li> </ul>	Mr. N. Senthilkumar	
			Mr. S. Pavel	
			Mr. J. R. Vikram Krishna	
8	LU	<ul style="list-style-type: none"> <li>Construction of Land use Map</li> <li>Impact of project on surrounding land use</li> <li>Suggesting post closure sustainable land use and mitigative measures.</li> </ul>	Mr. A. Allimuthu	
9	NV	<ul style="list-style-type: none"> <li>Identify impacts due to noise and vibrations</li> <li>Suggesting appropriate mitigation measures for EMP.</li> </ul>	Mr. A. Jagannathan	
10	AQ	<ul style="list-style-type: none"> <li>Identifying different source of emissions and propose predictions of incremental GLC using AERMOD.</li> <li>Recommending mitigations measures for EMP</li> </ul>	Mr. N. Senthilkumar	
11	SC	<ul style="list-style-type: none"> <li>Assessing the impact on soil environment and proposed mitigation measures for soil conservation</li> </ul>	Dr. M. Iftikhah Ahmed	
12	SHW	<ul style="list-style-type: none"> <li>Identify source of generation of non-hazardous solid waste and hazardous waste.</li> <li>Suggesting measures for minimization of generation of waste and how it can be reused or recycled.</li> </ul>	Mr. A. Jagannathan	
			Mr. J. R. Vikram Krishna	

**LIST OF TEAM MEMBERS ENGAGED IN THIS PROJECT**

Sl.No.	Name	Functional Area	Involvement	Signature
1	Mr. S. Nagamani	AP; GEO; AQ	<ul style="list-style-type: none"> <li>Site Visit with FAE</li> <li>Provide inputs &amp; Assisting FAE with sources of Air Pollution, its impact and suggest control measures</li> <li>Provide inputs on Geological Aspects</li> <li>Analyse &amp; provide inputs and assist FAE with meteorological data, emission estimation, AERMOD modelling and suggesting control measures</li> </ul>	
2	Mr. Viswathanan	AP; WP; LU	<ul style="list-style-type: none"> <li>Site Visit with FAE</li> <li>Provide inputs &amp; Assisting FAE with sources of Air Pollution, its impact and suggest control measures</li> <li>Assisting FAE on sources of water pollution, its impacts and suggest control measures</li> <li>Assisting FAE in preparation of land use maps</li> </ul>	
3	Mr. Santhoshkumar	GEO; SC	<ul style="list-style-type: none"> <li>Site Visit with FAE</li> <li>Provide inputs on Geological Aspects</li> <li>Assist in Resources &amp; Reserve Calculation and preparation of Production Plan &amp; Conceptual Plan</li> <li>Provide inputs &amp; Assisting FAE with soil conservation methods and identifying impacts</li> </ul>	
4	Mr. Umamahesvaran	GEO	<ul style="list-style-type: none"> <li>Site Visit with FAE</li> <li>Provide inputs on Geological Aspects</li> </ul>	

			<ul style="list-style-type: none"> <li>▪ Assist in Resources &amp; Reserve Calculation and preparation of Production Plan &amp; Conceptual Plan</li> </ul>	
5	Mr. A. Allimuthu	SE	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assist FAE with collection of data's</li> <li>▪ Provide inputs by analysing primary and secondary data</li> </ul>	<i>A. Allimuthu</i>
6	Mr. S. Ilavarasan	LU; SC	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assisting FAE in preparation of land use maps</li> <li>▪ Provide inputs &amp; Assisting FAE with soil conservation methods and identifying impacts</li> </ul>	<i>S. Ilavarasan</i>
7	Mr. E. Vadivel	HG	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assist FAE &amp; provide inputs on aquifer characteristics, ground water level/table</li> <li>▪ Assist with methods of ground water recharge and conduct pump test, flow rate</li> </ul>	<i>E. Vadivel</i>
8	Mr. D. Dinesh	NV	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assist FAE and provide inputs on impacts due to proposed mine activity and suggest mitigation measures</li> <li>▪ Assist FAE with prediction modelling</li> </ul>	<i>D. Dinesh</i>
9	Mr. Panneer Selvam	EB	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assist FAE with collection of baseline data</li> <li>▪ Provide inputs and assist with labelling of Flora and Fauna</li> </ul>	<i>P. Panneer Selvam</i>
10	Mrs. Nathiya	EB	<ul style="list-style-type: none"> <li>▪ Site Visit with FAE</li> <li>▪ Assist FAE with collection of baseline data</li> <li>▪ Provide inputs and assist with labelling of Flora and Fauna</li> </ul>	<i>T. Annappan</i>

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**DECLARATION BY THE HEAD OF THE ACCREDITED CONSULTANT ORGANIZATION**

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I, Dr. M. Ifthikhar Ahmed, Managing Partner, Geo Exploration and Mining Solutions, hereby, confirm that the above-mentioned Functional Area Experts and Team Members prepared the Cluster EIA/EMP for Mudalipalayam Rough Stone & Gravel Quarry over a Cluster Extent of 5.28.41 ha in Mudalipalayam Village of Kaneyam Taluk, Tiruppur District of Tamil Nadu. It is also certified that information furnished in the EIA study are true and correct to the best of our knowledge.

Signature& Date:



Name:

**Dr. M. Ifthikhar Ahmed**

Designation:

**Managing Partner**

Name of the EIA Consultant Organization:

**M/s. Geo Exploration and Mining Solutions**

NABET Certificate No & Issue Date:

**NABET/EIA/2225/RA 0276 Dated: 20-2-2023**

Validity:

**Valid till 06.08.2025**

# ANNEXURE

## MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY

Mudalipalayam Village,  
Kangayam Taluk,  
Tiruppur District

**CLUSTER EXTENT: 5.28.41 Ha**

ToR obtained

ToR Identification: TO24B0108TN5280988N Dated: 24/05/2024 – P1

ToR Identification: TO24B0108TN5642030N Dated: 07/09/2024 – P2

Code	P1	P2
<b>Project Location</b>	<b>Thiru. R. Karthick,</b> S.F No. 984/2A1(Part) <b>Extent: 1.61.95Ha</b> of Mudalipalayam Village, Kangayam Taluk, Tiruppur District.	<b>Tmt. G. Susila,</b> S.F No. 986/B1(Part) <b>Extent: 1.21.46Ha</b> of Mudalipalayam Village, Kangayam Taluk, Tiruppur District.

## LIST OF ANNEXURES

ANNEXURES	DESCRIPTION	PAGE NOS
P1- THIRU. R. KARTHICK	COPY OF TERMS OF REFERENCE	1A-16A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	17A-18A
	COPY OF MINING PLAN APPROVED LETTER	19A-20A
	COPY OF APPROVED MINING PLAN WITH PLATES	21A-90A
	COPY OF HYDROGEOLOGICAL REPORT	91A-100A
	COPY OF INSPECTION LETTER (RDO, RI, A1)	101A-106A
	COPY OF BDO	107A
	COPY OF CER	108A
	COPY OF 300m & VAO ATTESTATION LETTER	109A-110A
	COPY OF EXPLOSIVE LETTER	111A-119A
P2 – TMT. G. SUSILA	COPY OF TERMS OF REFERENCE	120A-135A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	136A-137A
	COPY OF MINING PLAN APPROVED LETTER	138A-139A
	COPY OF APPROVED MINING PLAN WITH PLATES	140A-233A
	COPY OF HYDROGEOLOGICAL REPORT	234A-254A
	COPY OF INSPECTION LETTER (RDO, RI, A1)	255A-260A
	COPY OF BDO	261A
	COPY OF CER	262A

	COPY OF 300m & VAO ATTESTATION LETTER	263A – 264A
	COPY OF EXPLOSIVE LETTER	265A-271A
E1 M/S. SRI MUTHUKUMAR BLUE METALS,	COPY OF ENVIRONMENTAL CLEARANCE	272A-307A
	COPY OF BASE LINE MONITORING DATA	308A – 351A
	COPY OF CONSULTANT ACCREDITATION CERTIFICATE	352A





**File No: 10766**  
**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**(Issued by the State Environment Impact Assessment Authority(SEIAA),**  
**TAMIL NADU)**

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Dated 24/05/2024



To,

RAJENDRAN KARTHICK  
RAJENDRAN KARTHICK  
No. 72, Kavilipalayampudhur, Velampalayam, Tiruppur, Velampalayam, TIRUPPUR, TAMIL NADU,  
641652  
karthiquarry@gmail.com

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

**Sir/Madam,**

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project R. Karthick, Rough Stone and Gravel Quarry, Extent: 1.61.95ha S.F.No. 984/2A1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District. submitted to SEIAA-TN vide proposal number SIA/TN/MIN/465628/2024 dated 02/04/2024.

**Ref:** 1. Online proposal No.SIA/TN/MIN/465628/2024, Dated: 11.03.2024.  
2. Your application submitted for Terms of Reference dated:20.03.2024.

2. The particulars of the proposal are as below :

<b>(i) TOR Identification No.</b>	TO24B0108TN5280988N
<b>(ii) File No.</b>	10766
<b>(iii) Clearance Type</b>	TOR
<b>(iv) Category</b>	B1
<b>(v) Project/Activity Included Schedule No.</b>	1(a) Mining of minerals R. Karthick, Rough Stone and Gravel Quarry, Extent: 1.61.95ha S.F.No. 984/2A1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District.
<b>(vii) Name of Project</b>	
<b>(viii) Name of Company/Organization</b>	RAJENDRAN KARTHICK
<b>(ix) Location of Project (District, State)</b>	TIRUPPUR, TAMIL NADU
<b>(x) Issuing Authority</b>	SEIAA
<b>(xii) Applicability of General Conditions</b>	no
<b>(xiii) Applicability of Specific Conditions</b>	no

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to SEIAA-TN for an appraisal by the State Environment Impact Assessment Authority(SEIAA) under the provision of EIA notification 2006 and its subsequent amendments.
4. The above-mentioned proposal has been considered by SEIAA in the meeting held on 15/05/2024. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B)] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
5. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
6. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the State Environment Impact Assessment Authority(SEIAA) Appraisal Committee hereby decided to grant Terms of Reference for instant proposal of Thiru.R.Karthick under the provisions of EIA Notification, 2006 and as amended thereof.
7. The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.
8. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
9. This issues with the approval of the Competent Authority.
10. The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OM No.J-11013/41/2006-IA-II(I)(part) dated 29<sup>th</sup> August, 2017

**Copy To**

1. The Additional Chief Secretary to Government, Environment, Climate Change and Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
3. The Chairman, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai - 600 032.
4. The APCCF (C), Regional Office, MoEF & CC (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai - 34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan, CGO Complex, New Delhi - 110 003.
6. The District Collector, Tiruppur District.
7. Stock File.

#### **SEIAA SPECIFIC CONDITIONS:**

1. The PP should provide the detail report of Bio diversity study, Hydrogeological study, Hydrology study, Socio –Economic Study separately. The above-mentioned scientific studies report should be done by involving the reputed Research or Academic Institution.
2. The PP shall include the cost of the above-mentioned studies in the EMP and furnish the same during the EIA Appraisal.
3. The lease period is for 5 years. The mining plan is for the period of five years & the production should not exceed 1,89,560m<sup>3</sup> of rough stone and 24,000m<sup>3</sup> of Gravel with an ultimate depth of mining is 37m BGL. The annual peak production is 39,660m<sup>3</sup> of rough stone and 10,560m<sup>3</sup> of Gravel.

#### **SEIAA STANDARD CONDITIONS**

##### **Cluster Management Committee**

1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.
2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,
3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.
4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.
7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.

8. The committee shall furnish the Emergency Management plan within the cluster.
9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.
10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.

### **Impact study of mining**

12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following
  - a) Soil health & soil biological, physical land chemical features .
  - b) Climate change leading to Droughts, Floods etc.
  - c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
  - d) Possibilities of water contamination and impact on aquatic ecosystem health.
  - e) Agriculture, Forestry & Traditional practices.
  - f) Hydrothermal/Geothermal effect due to destruction in the Environment.
  - g) Bio-geochemical processes and its foot prints including environmental stress.
  - h) Sediment geochemistry in the surface streams.

### **Agriculture & Agro-Biodiversity**

13. Impact on surrounding agricultural fields around the proposed mining Area.
14. Impact on soil flora & vegetation around the project site.
15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.
16. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.
17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
18. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.

## **Forests**

19. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.

## **Water Environment**

23. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.
24. Erosion Control measures.
25. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.
26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.
28. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
30. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.

## **Energy**

31. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.

### **Climate Change**

32. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.

33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.

### **Mine Closure Plan**

34. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.

### **EMP**

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

36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.

### **Risk Assessment**

37. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.

### **Disaster Management Plan**

38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.

### **Others**

39. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.

40. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.
41. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

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

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

focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

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



given.

- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker

sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

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

groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

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

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

- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-
  - a) Executive Summary of the EIA/EMP Report
  - b) All documents to be properly referenced with index and continuous page numbering.
  - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
  - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
  - e) Where the documents provided are in a language other than English, an English translation should be provided.

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

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable)).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.

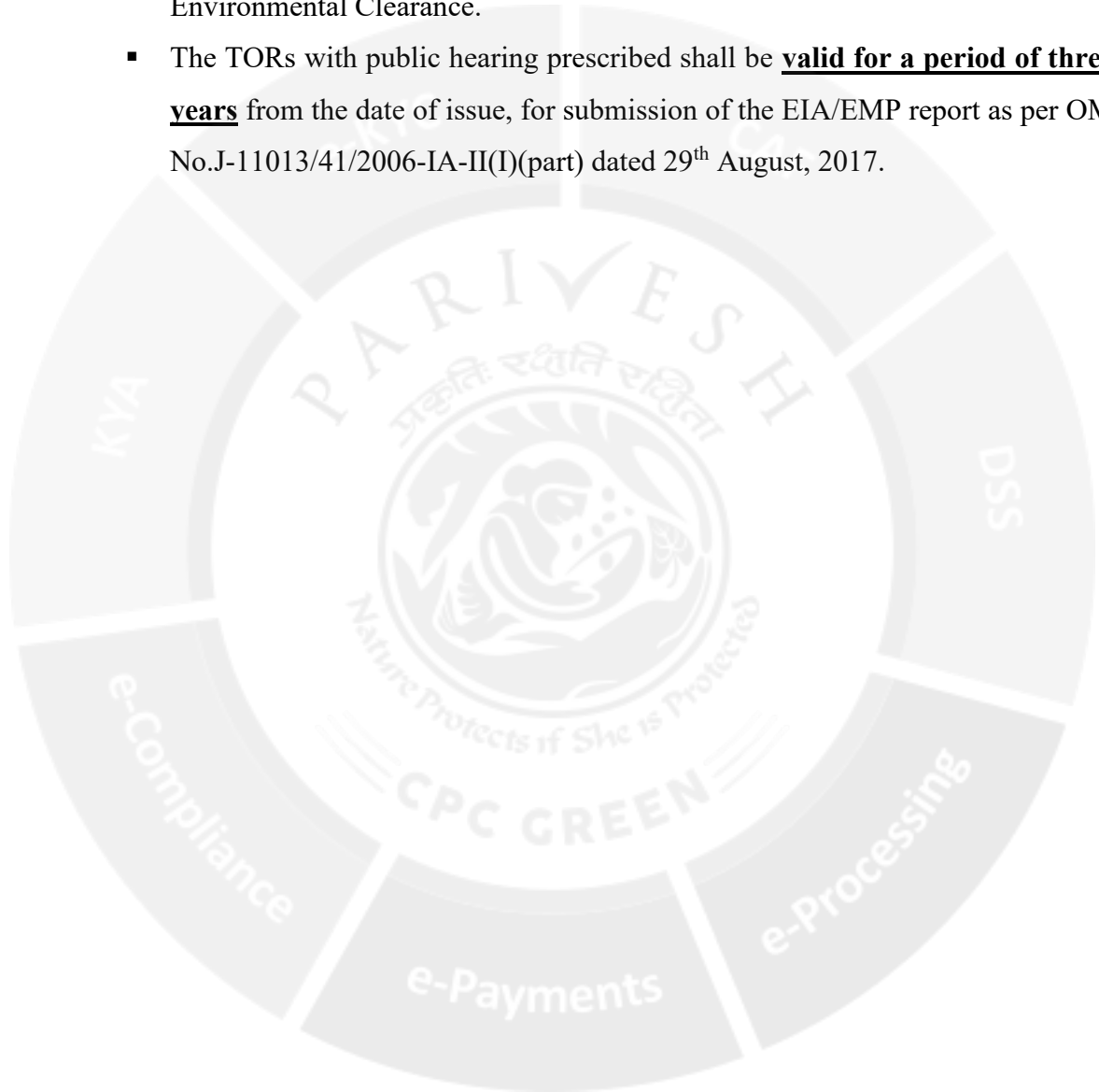
7. Details of village map, “A” register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining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

27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
- d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF & CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
- e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -11013/77/2004-IA-II(I) dated 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 OM No.J-11013/41/2006-IA-II(I)(part) dated 29<sup>th</sup> August, 2017.



Signature Not Verified

Digitally Signed by : A R Rahul Nadh IAS  
Member Secretary, SEIAA

Date: 24/05/2024



From

Thiru.A.Perumal, M.Sc., M.Phil  
Deputy Director,  
Geology and Mining,  
Tiruppur

To

Thiru.R.Karthick,  
S/o.Rajendran,  
No.72, Kavilipalayampudhur,  
Velampalayam,  
Tiruppur district

**R.c. No.110/ Mines / 2023 dated: 02.2024**

Sub: Mines and Minerals – Minor Mineral – Rough Stone and Gravel- Tiruppur District - Kangeyam Taluk - Mudalipalayam Village- S.F.Nos. 984/2A1(P) - Over an Extent of 1.61.95 Hectares of patta land- Quarry lease for Rough Stone and Gravel - Application preferred by Thiru.R.Karthick - Precise area communicated for the proposed grant of quarry lease - Mining Plan Submitted for approval - Approved - further details requested - furnished regarding.

- Ref: 1. Application for grant of Rough Stone and Gravel quarry lease preferred by Thiru.R.Karthick dated: 20.3.2023.  
2. G.O. Ms. No. 79 / Industries (MMC 1) Department dated 06.04.2015.  
3. The Deputy Director, Geology and Mining, Tiruppur letter R.C. No. 110/Mines/2023 dated 24.01.2024.  
4. Thiru.R.Karthick letter dated:nil received on 08.02.2024.  
5. This office letter even no. dated.09.02.2023 (Mining Plan approved)

\*\*\*\*\*

In the reference 5<sup>th</sup> cited above, the applicant Thiru.R.Karthick has requested to furnish details of other quarry leases of expired, existing and proposed within 500mtr radius from the proposed rough stone and gravel lease over an extent of 1.61.95 Hect in S.F.No.986/2A1 (Part), Mudalipalayam Village of Kangeyam Taluk, Tiruppur District.

As requested by the applicant, the details of existing, proposed and expired quarries situated within the radius of 500 meters from the subject area are furnished as follows:-

1. Existing quarries:

SNo	Name of the Applicant	S.F.Nos	Extent(Hect)	Lease Period
1.	Sri Muthukumar Blue Metals	986/B2A (P)	2.45.0	22.01.2024 to 21.01.2034

2. Proposed quarries :

Sl.No	Name of the Applicant	S.F.Nos	Extent (Hect)	Remarks
1.	R.Karthick	984/2A1 (Part)	1.61.95	Fresh Quarry
2.	G.Suseela	986/B1 (Part)	1.21.46	Quarry lease application is under process

3. Lease expired and abandoned quarries:

SNo	Name of the Applicant	S.F.Nos	Extent(Hect)	Lease Period
1	B.Rajamani	984/2A2 (Part), 984/2B (Part)	1.21.40	05.10.2018 to 04.10.2023

*[Handwritten Signature]*  
Deputy Director  
Geology and Mining,  
Tiruppur

*[Handwritten Date]*  
15/12/23

Copy to : State Level Environment Impact Assessment Authority-Tamil Nadu, 3<sup>rd</sup> Floor, Panagal Maaligai, No.1 Jeenis Road, Saidapet, Chennai-15

From

Thiru. A.Perumal, M.Sc., M.Phil.,  
Deputy Director,  
Geology and Mining,  
Tiruppur

To

Thiru.R.Karthick,  
S/o.Rajendran,  
No.72, Kavilipalayampudhur,  
Velampalayam,  
Tiruppur district

**R.c. No. 110/ Mines / 2023 dated: 02.2024**

Sub: Mines and Minerals – Minor Mineral – Rough Stone and Gravel- Tiruppur District - Kangeyam Taluk - Mudalipalayam Village- S.F.Nos. 984/2A1(P) - Over an Extent of 1.61.95 Hectares of patta land- Quarry lease for Rough Stone and Gravel - Application preferred by Thiru.R.Karthick - Precise area communicated for the proposed grant of quarry lease - Mining Plan Submitted for approval - Approved - regarding.

- Ref: 1. Application for grant of Rough Stone and Gravel quarry lease preferred by Thiru.R.Karthick dated: 20.3.2023.
2. G.O. Ms. No. 79 / Industries (MMC 1) Department dated 06.04.2015.
3. The Deputy Director, Geology and Mining, Tiruppur letter R.C. No. 110/Mines/2023 dated 24.01.2024.
4. Thiru.R.Karthick letter dated:nil received on 08.02.2024.

\*\*\*\*\*


Thiru.R.Karthick preferred an application for the grant of Rough Stone and Gravel quarry lease over an extent of 1.61.95 Hectares of Patta land in S.F.No.984/2A1 (Part) of Mudalipalayam Village, Kangeyam Taluk, Tiruppur District vide the reference 1<sup>st</sup> cited and the precise area was communicated to the applicant vide the reference 3<sup>rd</sup> cited with a direction to submit the approved mining plan and Environmental Clearance.

As directed, the applicant submitted three copies of mining plan for approval vide the reference 4<sup>th</sup> cited. The Mining Plan has been verified in detail and found that it was prepared in accordance with the guidelines / instructions issued by the Commissioner of Geology and Mining in letter RC. No. 3868 / LC / 2012 dated 19.11.2012.

Therefore in exercise of the powers conferred under Rule 41(2) of Tamil Nadu Minor Mineral Concession Rules, 1959, read with G.O. (Ms). No.79 / Industries (MMC 1) Department dated 06.04.2015, the mining plan is hereby 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) This approval of the mining plan does not in any way convey the approval of the Government in terms or any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives Act, 1884 (Central Act IV of 1884) Minor Mineral Concession and Development Rules, 2010 and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- (iii) The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- (iv) The validity of the mining plan is co-terminus with the lease period.
- (v) Quarrying shall be done in accordance with the approved Mining Plan and that 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.
- (vi) If anything is found to be concealed as required by the Mines Act in the contents of the Mining Plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
- (vii) A safety distance of 7.5 meters shall be provided for the patta lands situated adjacent to the applied area.

Encl.: Approved Mining Plan.

  
Deputy Director,  
Geology and Mining,  
Tiruppur

8/2/15  
15/2/2015

**MINING PLAN ALONG WITH PROGRESSIVE QUARRY  
CLOSURE PLAN FOR MUDALIPALAYAM  
ROUGH STONE AND GRAVEL QUARRY**



(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL  
CONCESSION RULES, 1959)

**Government Land / Lease period = Five years**

*IN*

**LOCATION OF THE QUARRY LEASE APPLIED AREA**

EXTENT : 1.61.95Ha  
S.F.NO. : 984/2A1 (PART)  
VILLAGE : MUDALIPALAYAM  
TALUK : KANGAYAM  
DISTRICT : TIRUPPUR  
STATE : TAMIL NADU

*FOR*

**APPLICANT**

**THIRU. R. KARTHICK,**

S/o. Rajendran

No.72, Kavilipalayampudhur,

Velampalayam,

Tiruppur District,

Tamil Nadu – 641 652.

Mobile No. 98430 17407 and 98654 21654.

**PREPARED BY**

**S. ILAVARASAN, M.Sc.,**

Qualified Person

(Under Rule 15(I)(a) and (I)(b) of MCR, 2016)

No. 289, Shanthi Nagar First Cross,

Chinnakollapatti,

Salem District – 636 008.

Mobile No.: +91 94880 69569

E-Mail: ilageo.s@gmail.com



## ABBREVIATIONS

- EC - Environmental Clearance.
- EIA - Environment Impact Assessment.
- EMP - Environment Management Plan.
- ToR - Terms of Reference.
- NGT - National Green Tribunal.
- SEAC - State Expert Appraisal Committee.
- SEIAA - State Level Environment Impact Assessment Authority.
- DEAC - District Expert Appraisal Committee.
- DEIAA - District Level Environment Impact Assessment Authority.
- MoEF&CC - Ministry of Environment, Forest and Climate changes.
- CPCB - Central Pollution control board.
- TNPCB - Tamil Nadu Pollution control board.
- DMS - Director of Mines Safety.
- DGMS - Director of General Mines Safety.
- CRZ - Coastal Regulatory Zone.
- HACA - Hill Area Conservation Authority.
- S.F.No. - Survey Field Number.
- MMR - Metalliferous Mines Regulations.
- MCR - Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules.
- TNMMCR - Tamil Nadu Minor Mineral Concession Rules.
- NONEL - Non Electric.
- PPV - Peak Particle Velocity.
- DGPS - Differential Global Positioning System.
- QP - Qualified Person.
- MSL - Mean Sea Level
- AGL - Above Ground Level
- BGL - Below Ground Level



**R. KARTHICK,**  
S/o. Rajendran  
No. 72, Kavilipalayampudhur,  
Velampalayam, Tiruppur District,  
Tamil Nadu – 641 652.  
Mobile No. 98430 17407 and 98654 21654.

**CONSENT LETTER FROM THE APPLICANT**

The Mining Plan and Progressive Quarry Closure Plan in Respect of Mudalipalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.61.95 Hectares Patta land in S.F.No. 984/2A1 (Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared by

**S. ILAVARASAN, M.Sc.,**

Qualified Person

(Under Rule 15(I)(a) and (I)(b) of MCR, 2016)

I have entrusted the works to prepare the Mining Plan based upon the production requirements to me as per the Mines Acts, Rules, Regulations and Amendments as on date. I request to the Deputy Director, Department of Geology and Mining, Tiruppur District, Tamil Nadu State to make further correspondence regarding the modification of the Mining Plan with the said Qualified Person at his following address.

**S. ILAVARASAN, M.Sc.,**

No. 289, Shanthi Nagar First Cross,

Chinnakollapatti,

Salem District – 636 008.

Mobile No.: +91 94880 69569.

I hereby undertake that all the responsibilities of contents in the Mining Plan and if any corrections 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 binding on me in all respects. If there is any substantial change during operation I will carry out a Modified Mining plan and seek its approval from concerned Authorities.

Signature of the Applicant

  
(R. Karthick)

Place: Tiruppur

Date: 25.01.2024



**R. KARTHICK,**

S/o. Rajendran

No. 72, Kavilipalayampudhur,

Velampalayam, Tiruppur District,

Tamil Nadu – 641 652.

Mobile No. 98430 17407 and 98654 21654.

**DECLARATION OF THE APPLICANT**

The Mining Plan and Progressive Quarry Closure Plan in Respect of Mudalipalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.61.95 Hectares Patta land in S.F.No. 984/2A1 (Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared in full consultation with me.

I have understood its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to quarry from time to time as per Tamil Nadu Minor Mineral Concession Rules, 1959.

Signature of the Applicant



(R. Karthick)

Place: Tiruppur

Date: 31.01.2024



## CERTIFICATE



Certified that I am, **S. ILAVARASAN, M.Sc.**, residing at No. 289, Shanthi Nagar First Cross, Chinnakollapatti, Salem District – 636 008, holding a Master Degree in Applied Geology (M.Sc. Applied Geology) from Bharathidasan University, Tiruchirappalli and I worked in the field of Mining in a role of Geologist.

Rule 15(I)(a) and (b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 stipulates the eligibility for preparing Mining plans as “(I)(a) a degree in mining engineering or a post-graduate degree in geology granted by a university established” and (I)(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 (I)(a) and (I)(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 and Progressive Quarry Closure Plan in Respect of Mudalipalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.61.95 Hectares Patta land in S.F.No. 984/2A1 (Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District for Thiru. R. Karthick S/o. Rajendran residing at No.72, Kavilipalayampudhur, Velampalayam, Tiruppur District, Tamil Nadu – 641 652. Since the Mining Plan is prepared as per the provisions contained in Rule 15(I)(a) and (I)(b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person

  
S. Ilavarasan, M.Sc.,

Place: Salem

Date: 31.01.2024



**S. ILAVARASAN, M.Sc.,**  
No. 289, Shanthi Nagar First Cross,  
Chinnakollapatti,  
Salem District – 636 008.  
Mobile No.: +91 94880 69569.

**CERTIFICATE FROM THE QUALIFIED PERSON**

This is to certify that the Provisions of Prepared under Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959. The preparation of Mining Plan and Progressive Quarry Closure Plan for Mudalipalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.61.95 Hectares Patta land in S.F.No. 984/2A1 (Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared for

**THIRU. R, KARTHICK,**

S/o. Rajendran

No. 72, Kavilipalayampudhur,

Velampalayam, Tiruppur District,

Tamil Nadu – 641 652.

Mobile No. 98430 17407 and 98654 21654.

Whenever specific permissions / exemptions / relaxations and approvals are required, the applicant will approach the concerned authorities of the Deputy Director, Department of Geology and Mining, Tiruppur District, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the above Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

S. Ilavarasan, M.Sc.,

Place: Salem

Date: 31.01.2024



**S. ILAVARASAN, M.Sc.,**  
No. 289, Shanthi Nagar First Cross,  
Chinnakollapatti,  
Salem District – 636 008.  
Mobile No.: +91 94880 69569

**CERTIFICATE FROM THE QUALIFIED PERSON**

Certified that the Provisions of Mines Act, Rules and Regulations or Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Mudalipalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.61.95 Hectares Patta land in S.F.No. 984/2A1 (Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared for

**THIRU. R. KARTHICK,**

S/o. Rajendran

No. 72, Kavilipalayampudhur,

Velampalayam, Tiruppur District,


Tamil Nadu – 641 652.

Mobile No. 98430 17407 and 98654 21654.

Whenever specific permissions / exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of Director of Mines Safety (DMS), No.5, II Street, Block-AA, Anna Nagar, Chennai-40, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

  
S. Ilavarasan, M.Sc.,

Place: Salem

Date: 31.01.2024



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## MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR MUDALIPALAYAM ROUGH STONE AND GRAVEL.

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDMENT OF TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

### 1.0 INTRODUCTION AND EXECUTIVE SUMMARY

The applicant **Thiru. R. Karthick**, S/o. Rajendran, residing at No. 72, Kavilipalayampudhur, Velampalayam, Tiruppur District, Tamil Nadu – 641 652 has entrust and given consent to preparation of Mining plan and Progressive Mine Closure Plan as per the provisions of Mines Act, Rules, Regulations and as amended till date.

The applicant has applied quarry lease for quarrying of Rough Stone and Gravel for over an extent of 1.61.95 hectares patta lands in S.F.No. 984/2A1 (Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District Tamil Nadu State for a period of five years under Rules 19 and 20 of Tamil Nadu Minor Mineral Concession Rules, 1959. The following are the statutory requirements with respect to Rough Stone and Gravel quarry.

1. Thiru. R. Karthick, S/o. Rajendran, No. 72, Kavilipalayampudhur, Velampalayam, Tiruppur application date on 20.03.2023.
2. Deputy Director, Department of Geology and Mining, Tiruppur, letter Rc.No. 110/Mines/2023 dated: 24.01.2024.
3. The Tashildar, Kangayam letter R.C.No. 14665/2023/A2 dated:09.05.2023.
4. Commissioner of Revenue, Tharapuram letter Rc.No. 896/2023/C dated 16.05.2023.
5. Assistant Director and Revenue Inspector, Department of Geology and Mining, Tiruppur, inspection report dated: 09.01.2024.
6. The Block Development Officer, Kangayam letter R.c.No.4372/2022/A1 dated:23.01.2024.
7. Government Order No. 169 Industries (M.M.C.1) Department Dated: 04.08.2020.
8. Government Order No. 208 Industries (M.M.C.1) Department Dated: 21.09.2020.

The application was examined, Scrutinized, Inspected and processed by the Deputy Director, Department of Geology and Mining, Tiruppur and issued a Precise Area Communication letter vide letter **R.C. No. 110/Mines/2023, dated 24.01.2024** for preparation of Mining plan as per the Rule 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 within 90 days and getting approval from the Department of Geology and Mining, Tiruppur to obtain Environmental Clearance from the State Level Environment Impact Assessment Authority (SEIAA), Tamil Nadu, with the following conditions to provide (Refer Annexure No. I):

**General Conditions:**

1. The applicant should submit approved mining plan and Environmental Clearance obtained from Environment Impact Assessment Authority to the area applied for Rough Stone and Gravel quarry lease for over an extent 1.61.95 hectares of patta lands in S.F.No. 984/2A1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District.
2. A safety distance of 7.5 meters should be provided to the adjacent patta lands from the boundary of the area applied for quarry lease.
3. The applicant should submit the DGPS survey report for the area applied for lease.

This Mining Plan along with Progressive Mine closure Plan is prepared in full consultation with **Thiru. R. Karthick**, S/o. Rajendran, residing at No. 72, Kavilipalayampudhur, Velampalayam, Tiruppur District, Tamil Nadu – 641 652 for Rough Stone and Gravel quarry over an extent 1.61.95 hectares of patta lands in S.F.No. 984/2A1 (Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State under Rules 19 and 20 of Tamil Nadu Minor Mineral Concession Rules, 1959 with obtained full consent as per the application and Production schedule in preparation of Mining plan as per the provisions of Mines Act, Rules, Regulations as on date

The Mining plan has been prepared after carrying the field survey, collection of Primary & secondary data, environmental setting, geological features and tentatively estimated the Resources & Reserves, depth of mining as identified in the field with best our knowledge and experience. This mining plan is prepared by considering the Rule 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendments.

In order to ensure compliance of the order of the Honourable Supreme Court Dated: 27.02.2012 in I.A.No.12-13 of 2011 in Special Leave Petition(SLP) (C) No 19628-19629/2009, it has been now decided that all mining projects of minor minerals including their renewal is require prior environmental clearance. As per amendment in EIA Notification 2006 vide S.O. 1886(E), Dated:20.04.2022 "All mining lease area in respect of minor mineral mining leases and  $\leq$  250 ha mining lease area in respect of major mineral mining lease other than coal" would be treated as category B and will be considered by the state notified by Ministry of Environment, Forest and Climate Change as prescribed procedure under EIA notification 2006.

The field survey carried out by the Qualified Person and Team as on 26.01.2024.

**Short Notes of Mining plan:**

- a. Village Panchayat - Mudalipalayam
- b. Panchayat Union - Thiruppur
- c. Total extent of the lease applied area is 1.61.95Ha.
- d. Topography of the area - The area exhibits plain topography.
- e. The Estimated Geological Resources are **5,63,570m<sup>3</sup>** of Rough Stone and **32,204m<sup>3</sup>** of Gravel in the entire area.
- f. Tentative total Mineable Reserves are **1,89,560m<sup>3</sup>** of Rough stone and **24,000m<sup>3</sup>** of Gravel (including existing gravel dump) in the entire area.
- g. The proposed quantity of reserves/ (level of production) to be mined are **1,89,560m<sup>3</sup>** of Rough stone for five years and **24,000m<sup>3</sup>** of Gravel for first three years in the entire area.
- h. Proposed Depth of mining = 37m below ground level.
- i. Lease Period = Five years
- j. It is a fresh lease applied area, at present the area is virgin. Hence no existing pit.
- k. Method of mining / level of mechanization.  
Opencast mechanized method, the quarry operation involves shallow jack hammer drilling, slurry blasting with NONEL initiation.
- l. Type of machineries proposed in the quarrying operation is given below.  
Excavators attached with bucket and rock breaker.  
Hand Jack hammer, Compressor (Diesel drive) (4 Jack Hammer capacity).
- m. No trees will be uprooted due to this quarry operation.
- n. The approach road from the main road to quarry is already existence; the same will be maintained in good condition for the haulage of quarry materials and machineries.
- o. There is No Export of this Rough stone and Gravel.
- p. Topo sketch covering 10km and 1km radius around the proposed area with markings of habitations, water bodies including streams, rivers, roads, major structure like bridges, wells, archaeological importance and places of worships is marked and enclosed as Plate Nos. IA & IB.





- q. The lease applied area is about 1.61,95Ha bounded by four corners; the corners are designated as 1-4 clockwise from the Southwestern corner and the Co – ordinate the corners are clearly marked in the Quarry Lease Plan and Surface Plan enclosed as Plate No. II.
- r. The plans of proposed quarrying area showing the dimensions of the pit, their proposed depth and maximum area of proposed quarrying are enclosed as Plate Nos. III, and IV.
- s. General conditions will not applicable for the proposed area. The area applied for lease is 10Km away from the,
- i) *Interstate Boundary,*
  - ii) *Protected area under wild life protection ACT, 1972,*
  - iii) *Critically polluted areas as identified by CPCB,*
  - iv) *Notified Eco sensitive areas.*
- t. There is no waste anticipated during this quarry operation, hence waste dump is not proposed in the lease applied area.
- u. Around 27 employees are proposed to deploying the quarrying operation.
- v. Total Cost of the project is about **Rs. 50,81,000/-**.



## 2.0 GENERAL INFORMATION

**2.1 a) Name of the Applicant :** Thiru. R. Karthick,  
S/o. Rajendran,

**b) Address of the Applicant (With Phone No and Aadhaar No.)**

Address : No.72, Kavilipalayampudhur,  
Velampalayam,  
Tiruppur District,

State with Pin Code : Tamil Nadu – 641 652.

Mobile No : +98430 17407 and 98654 21654

Aadhaar No : 5958 6014 2653 (Refer Annexure No. VIII)

E-mail : yuvaanraja@gmail.com

**c) Status of the Applicant (Individual / Company / Firm):**

The applicant is an individual.

**2.2 a) Mineral which the Applicant intends to mine:**

The Applicant intends to quarry Rough Stone and Gravel only.

**b) Precise area communication letter details received from the Competent Authority of the Government:**

The precise area communication letter was received from the Deputy Director, Department of Geology and Mining, Tiruppur District vide RC. No. 110/Mines/2023 dated 24.01.2024 (Refer Annexure No. I) and was given to us for the preparation of mining plan to meet out the applicant production schedule.

**c) Period of permission / lease to be granted:**

Five Years as mentioned in Precise area Communication letter.

**d) Name and address of the Qualified Person who preparing the Mining Plan:**

Name : S. ILAVARASAN, M.Sc.,  
Qualified Person (Under Rule 15(I)(a) and (I)(b) of MCR, 2016)

Address : No. 289, Shanthi Nagar First Cross,  
Chinnakollapatti,  
Salem District – 636 008.

Mobile : +91 94880 69569

Email : ilageo.s@gmail.com

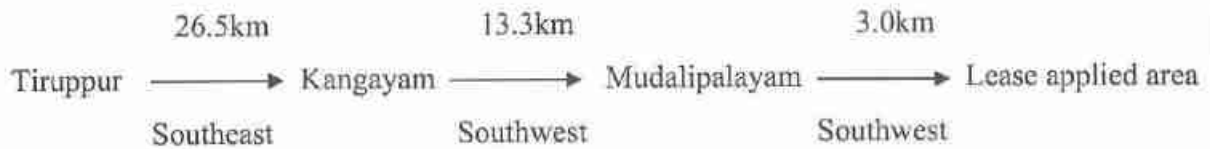
(Please Refer Annexure Nos. IX and IX -A).



**3.0 LOCATION**

**a) Details of the area with location map:**

The lease applied area is located about 32.2km Southeast side of Tiruppur town, 13.3km Southwest side of Kangayam town and 3.0km Southwest side of Mudalipalayam Village.



**Location Map of the Lease Applied area**

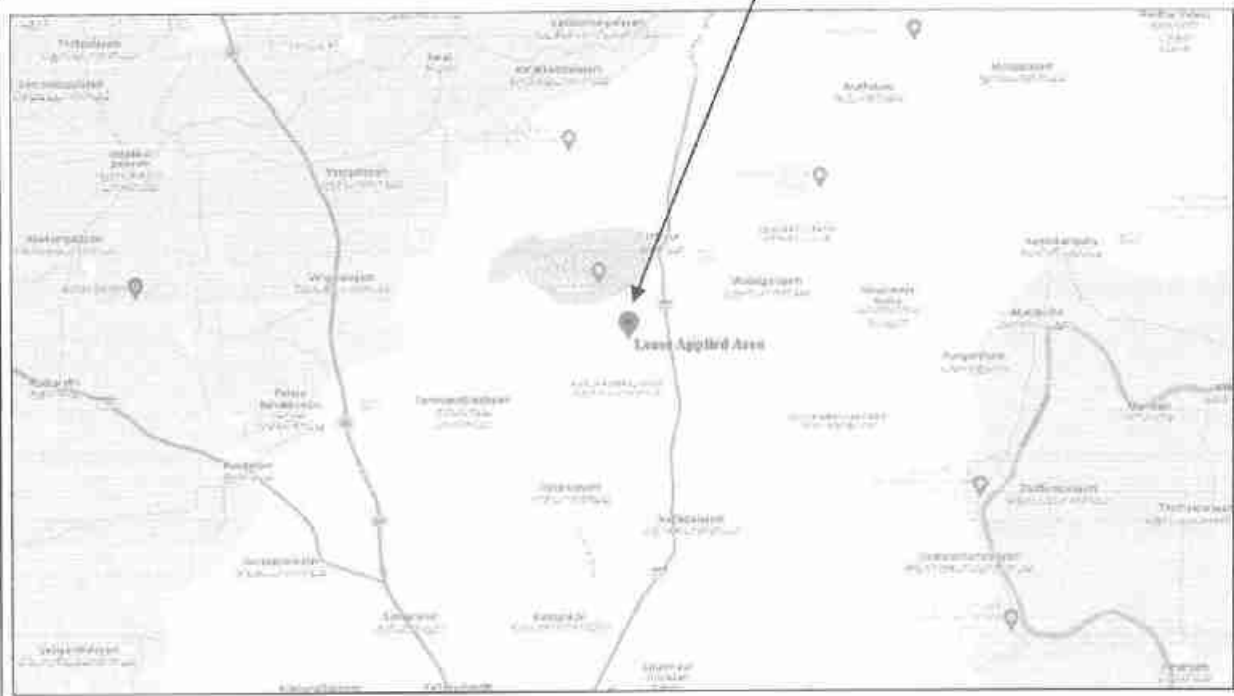
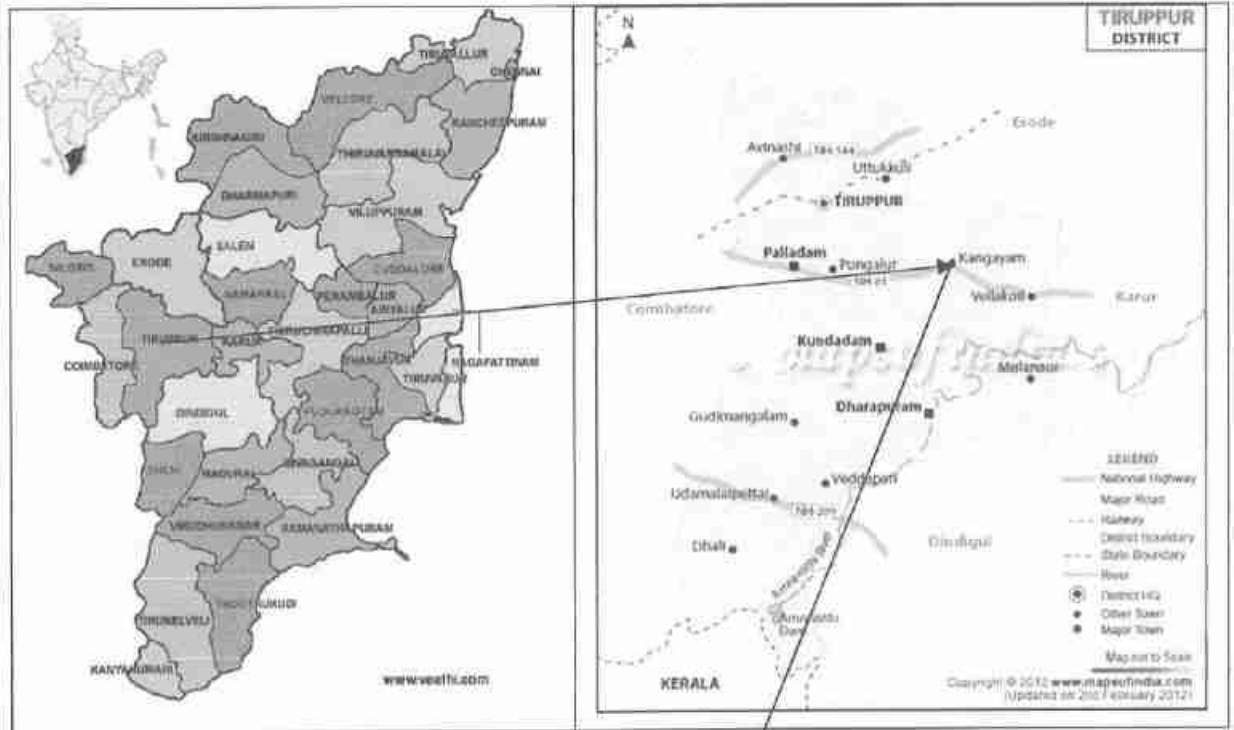




TABLE-2

District	Taluk	Village	S.F. No.	Area (Ha.)	Patta No.
Tiruppur	Kangayam	Mudalipalayam	984/2A1(Part)	1.61.95	1035
<b>Total Extent</b>				<b>1.61.95</b>	

Source: As per the FMB and 'A' register record furnished by the applicant.

**b) Classification of the area (Ryotwari/ Poramboke / others):**

It is Patta lands, classified as Punsei.

**c) Ownership / Occupancy of the applied area (surface right):**

It is Patta land, registered in the name of Thiru. B. Maheshkumar vide patta No. 1035 (Refer Annexure Nos. IV-VI). The applicant has obtained consent from the pattadar for the period of ten years from the date of execution of lease deed. (Refer Annexure Nos. VII).

**d) Toposheet No. with latitude and longitude:**

The lease applied area falls in the Toposheet No: 58 F/09 Latitude between: 10°52'29.32"N to 10°52'33.27"N and Longitude between: 77°31'10.08"E to 77°31'15.88"E on WGS datum-1984. Please refer the Plate Nos. I to II as per the GSI Toposheet.

**e) Existence of public road / Railway line, if any nearby and approximate distance:**

The approach road is situated on the Southern side, which is connects to the Panchayat Road is located at 340m on the southwestern side of the lease applied area.

Road access is available from the quarry to state highways and National Highway, no towns are enrooted hence the traffic density is not much more due to the transportation of Rough stone and Gravel.

The approach road from the quarry will be constructed and the same has been utilized for haulage and maintained during the entire lease period.

The Nearest Railway line is Coimbatore – Erode which is located about 31.6km on the Northwestern side of the area as per the GSI Toposheet and Google Map.

**PART – A****4.0 GEOLOGY AND MINERAL RESERVES****4.1 Brief description of the Topography and general Geology of the area (with plans)**

The lease applied area exhibits plain topography. The area has gentle sloping towards Eastern side and altitude of the area is 295m above from Mean Sea Level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the outcrops and nearby existing Rough Stone quarry pit situated on the Eastern side. The Water table is found at a depth of 58m - 62m. Average annual rainfall is about 607mm.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N70°E– S70°W with dipping towards NW30°.

The general geological sequences of the rocks in this area are given below:

↑	<b>AGE</b>	<b>FORMATION</b>
Recent	-	Quaternary formation (Gravel)
-----	Unconformity-----	-----
Archaean	-	Charnockite
		Peninsular Gneissic complex

**4.2 Details of exploration already carried out if any:**

State Geology and Mining Dept, Govt. of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed mapping in Tiruppur District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. The Rough stone formation is clearly inferred from the outcrop and nearby existing quarry pit situated on the Eastern side.

**4.3 Estimation of Reserves:****a) Geological Resources with geological sections on a scale of 1:1000 / 1:2000**

As far as Rough stone (Charnockite) is concerned, the only practical method is the systematic geological mapping and delineation of Rough stone within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.,

Totally two sections have been drawn, one section is drawn along the strike direction as (A-B) Length wise and another one cross section is drawn perpendicular to strike as (X-Y) Width wise to cover the maximum area considered for lease upto 37m depth.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough Stone (Charnockite) deposit has been prepared in the scale of 1:1000 (please refer the Geological plan and sections Plate No. III). As the sale of Rough stone are in terms of cubic metres (Volume) only and not in terms of tonnage. No Exploration has been carried out.

**Estimation of Geological Resources (Plate No. III):**

The Geological Resources of Rough Stone and Gravel are calculated up to a maximum depth of 37m [2m Gravel + 35m Rough stone] below ground level. The total Geological Resources are calculated by sectional method. The total geological resources are given below:

TABLE – 3

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Geological Resources in Rough stone (m <sup>3</sup> )	Gravel (m <sup>3</sup> )
XY-AB	I	166	97	2	-	32204
	II	166	97	5	80510	-
	III	166	97	5	80510	-
	IV	166	97	5	80510	-
	V	166	97	5	80510	-
	VI	166	97	5	80510	-
	VII	166	97	5	80510	-
	VIII	166	97	5	80510	-
<b>Total</b>					<b>563570</b>	<b>32204</b>

The Geological Resources of Gravel : 32,204m<sup>3</sup>

The Geological Resources of Rough Stone : 5,63,570m<sup>3</sup>

Geological Resources has been computed based on the physical investigation and filed survey data.

**Estimation of Mineable Reserves:**

The mineable reserves are calculated after leaving the safety distance and Bench loss.

TABLE – 4

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Mineable Reserves of Rough stone (m <sup>3</sup> )	Gravel (m <sup>3</sup> )
XY-CD	I	150	80	2	-	24000
	II	144	74	5	53280	-
	III	134	64	5	42880	-
	IV	124	54	5	33480	-
	V	114	44	5	25080	-
	VI	104	34	5	17680	-
	VII	94	24	5	11280	-
	VIII	84	14	5	5880	-
<b>Total</b>					<b>189560</b>	<b>24000</b>

The mineable reserves have been computed as 1,89,560m<sup>3</sup> of Rough Stone at the rate of 100% recovery and 24,000m<sup>3</sup> of Gravel for a period of five years upto a depth of 37m below ground level.



## 5.0 MINING

### 5.1. Method of mining (opencast / underground):

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height.

However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 106 (2) (b) is available with Director General of Mines Safety. If the applicant/lessee intends to modify the dimensions of benches, relaxation and permission are available with Director General of Mines Safety under 106 (2) (b) of Metalliferous Mines Regulations, 1961. In such a scenario if there is any drastic change in the Resources and Reserves a modified plan will be submitted to the concerned authority for necessary relaxation, clearance and permission. The relaxation will be applied and obtained after the execution of lease deed / commencement of quarry operation.

### 5.2. Mode of working (mechanized/ manual):

The Rough Stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves shallow jack hammer drilling, slurry explosives in blasting, excavation, Loading and transportation of Rough stone to the needy crusher.

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 shallow jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

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 mechanized method of mining.

### 5.3. Proposed Bench Height and Width:

The bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height. After obtaining relaxation as per 106 2(b) of Metalliferous Mines Regulations, 1961 from the DMS, the realignment of benches will be carried out.

### 5.4. Indicate the overburden / mineral production expected pit wise as detailed below (composite plan and section showing pit layout, dumps, disposal of waste if any etc.):

The overburden in the form of Gravel, the Gravel will be directly loaded into Tippers for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fee to the Government. The excavated rough stone will be directly loaded into Tippers to the needy customers. The Composite year wise Development and production plan and sections indicating the pit lay out and green belt development are shown in Plate No. III.



## Year wise Development and Production

TABLE - 5

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Recoverable Reserves in Rough stone (m <sup>3</sup> )	Gravel (m <sup>3</sup> )
I		I	66	80	2	-	10560
		II	60	74	5	22200	-
		III	50	64	5	16000	-
		<b>Total</b>					<b>38200</b>
II	XY-AB	I	30	80	2	-	4800
		II	30	74	5	11100	-
		III	30	64	5	9600	-
		IV	70	54	5	18900	-
		<b>Total</b>					<b>39600</b>
III	XY-AB	I	54	80	2	-	8640
		II	54	74	5	19980	-
		III	54	64	5	17280	-
		<b>Total</b>					<b>37260</b>
IV	XY-AB	IV	54	54	5	14580	-
		V	114	44	5	25080	-
		<b>Total</b>					<b>39660</b>
V	XY-AB	VI	104	34	5	17680	-
		VII	94	24	5	11280	-
		VIII	84	14	5	5880	-
		<b>Total</b>					<b>34840</b>
<b>Grand Total</b>						<b>189560</b>	<b>24000</b>

The Recoverable reserves have been computed as **1,89,560m<sup>3</sup>** of Rough stone at 100% recovery for five years and **24,000m<sup>3</sup>** of Gravel for first three years upto a depth of 37m below ground level (R.L.295m to R.L.258m) (Refer Plate No. III). The peak production capacity in the quarry is 39,660m<sup>3</sup> of Rough stone on 4<sup>th</sup> year and the proposed production schedule is arrived as per applicant's requirement.

The applicant ensures the total quantity proposed in the benches will not exceed during the quarrying operation. Besides the rough stone locked up in benches will be exploited after obtaining necessary permission from the office of Director of Mine Safety, Chennai region by submitting relevant documents, appropriate safety plans and its Mitigation measures.





One lorry load	=	6m <sup>3</sup> (approx.)
Total No of Working days	=	300 Days per year
Total quantity to be removed during the five years plan period	=	1,89,560m <sup>3</sup>
Peak production capacity during the 4 <sup>th</sup> year	=	39,660m <sup>3</sup>
Hence total Lorry loads per day	=	39,660m <sup>3</sup> /6m <sup>3</sup>
	=	6,610 Lorry loads
	=	6,610/300 days
Rough Stone	=	<b>22 Lorry loads per day</b>
Total Gravel to be removed during the first three years	=	24,000m <sup>3</sup>
Peak production capacity during the 1 <sup>st</sup> year	=	10,560m <sup>3</sup>
Hence total Lorry loads per day	=	10,560m <sup>3</sup> /6m <sup>3</sup>
	=	1,760 Lorry loads
	=	1,760/300 days
Gravel	=	<b>6 Lorry loads per day</b>

Working hours = 9.00 am to 6.00 pm (with 1.00-2.00 P.M. lunch break)

### 5.5. Machineries to be used:

#### For Mining:

The following machineries are utilized on rental basis for the development and production work at this quarry.

TABLE - 6

#### I. DRILLING MACHINE:

S. No.	Type	Nos	Dia Hole mm	Size Capacity	Motive power
1	Jack-Hammer	6	32	1.2m to 2.0m	Compressed air
2	Compressor	2	-	400 psi	Diesel Drive

#### II. EXCAVATION & LOADING EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Excavator with Bucket and Rock Breaker	1	300	Diesel Drive

#### III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Tippers	3	20 tonnes	Diesel Drive
2	Water Sprinkler	1	4000 ltrs	Diesel Drive



**5.6. Disposal of Overburden/Waste:**

There is no Waste anticipated during this plan period hence, disposal of waste does not arise. The overburden in the form of Gravel, the Gravel will be directly loaded into Tippers for the filling and levelling of low-lying areas. The excavated rough stone (100%) will be directly loaded into Tippers to the needy customers.

**5.7. Use of the Mineral:**

The excavated rough stone (100%) will be directly loaded into Tippers as raw form to the needy nearby crushing unit to making Road metals and construction materials.

**5.8. Brief note on conceptual mining plan for the entire lease period base on the geological, mining and environmental considerations:**

Conceptual mining plan is prepared with an object of long-term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc.,

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.,

As the applicant has applied quarry lease for five years, the ultimate pit limit (dimension) at the end of this mining plan period is given below:

TABLE - 7

Length (m) (Max.)	Width (m) (Avg.)	Depth (m) (Max.)
150	80	37m below ground level (R.L. 295m – R.L. 258m)

All the base line information studies like Air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out every year as per the MoEF & CC Norms. Please refer Plate Nos. III & IV. As per the NGT orders the applicant is directed to plant 500 trees per hectares along the quarry site and in the haul road either at the regular or the phased manner by planting native species.

There is no waste anticipated during the entire life of quarry. Hence, backfilling is not possible in this Rough stone quarry. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for Green belt development purpose. The quarry area will be fenced with barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle (Refer Plate No. IV and V).



## 6.0 BLASTING

### 6.1 Blasting pattern:

The quarrying operation is proposed to be carried out by Mechanized Opencast Method in conjunction with conventional method of mining using shallow Jack hammer drilling and mild blasting with NONEL initiation of shattering effect for loosening the Rough stone. Nonel initiation provides a reasonably good solution to the fly rock problem. The main objectives of Nonel Blasting are to reduce the ground vibration, noise, and fly rocks generated due to blasting operations. The overall cost of blasting in NONEL is very less compared to electrical blasting and hence it optimizes the cost of blasting.

#### Anticipated theoretical calculation of PPV

The empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K [R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

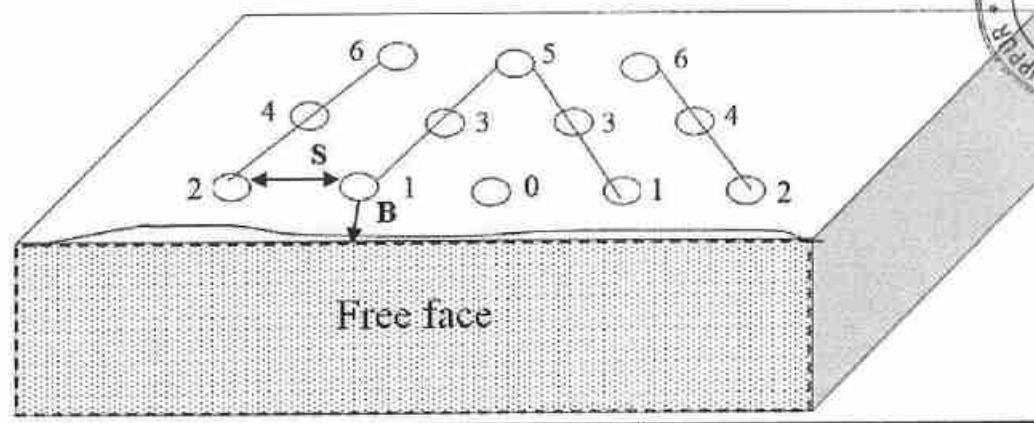
**TABLE 8: PREDICTED PPV VALUES DUE TO BLASTING**

Maximum Charge per day (kg)	Number of Round Blast per day	Number of holes blasted per round	Number of holes blasted per day	Nearest Infrastructure (m)	PPV (mm/s)
69	1	138	138	70	16.516

From the above table, the charge per blast of 11kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. If charge per blast will be required for more than 100 kg, the applicant ensures that carry out the **blasting twice or thrice a day** based on the onsite conditions under the supervision of competent qualified statutory personnel employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

#### Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.6m
Spacing between holes	:	1.2m
Burden for hole	:	1.0m
Diameter of hole	:	32mm
Pattern of hole	:	Zigzag – Multi-rows
Inclination of holes	:	80° from horizontal
Use of delay detonators	:	25millisecond delays
Detonating fuse	:	Non-Electric Detonators

**BLASTING PATTERN DRAWING****Staggered "V" Pattern of Blasting Design**

**Spacing** = 1.2m

**Burden** = 1.0m

**Depth of the hole** = 1.6m

**No of holes proposed per day(Peak Production)= 138 Holes**

**6.2 Type of explosives to be used:**

Small Dia. 25mm Slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or secondary blasting is proposed. NONEL blasting and muffle blasting may be adopted after permission from DGMS.

**6.3 Measures proposed to minimize ground vibration due to blasting:**

The quarry is situated more than 300m away from the nearby villages, Controlled blasting measures of NONEL initiation is being adopt for minimizing ground vibration and fly rock.

Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give heaving effect in rough stone for easy excavation and to control fly rock.

**NONEL Delay detonators:**

Delay blasting (millisecond delays) permits to divide the shot in to smaller charges, which are detonated in a predetermined millisecond sequence at specific time intervals.

The major advantages of delay blasting are:

- Reduction of ground vibration.
- Reduction in air blast.
- Reduction in over break.
- Improved fragmentation.
- Better control of fly-rock.

**Blasting program for the production per day:**

Peak production (4 <sup>th</sup> Year)	= 39,660m <sup>3</sup> x 2.6(Bulk Density) = 1,03,116 Tons
No of Holes	= 138 Holes
Yield	= 345 Tons
Powder factor	= 5 Tons/Kg of explosives
Total explosive required	= 69 Kg-Slurry explosives
Charge/ hole	= 0.5 Kg
Blasting at day time only	= 1.00 – 1.30 P.M. (whenever required)

**6.4 Storage and safety measures to be taken while blasting:**

The applicant will engage authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/Permit Mines Manager. The explosives agencies should be having the valid Blaster certificate. He will blast holes in the quarry site. After the completion of Blasting the explosives Agencies will take it out back the remaining quantity of Explosives. The Competent Qualified Statutory personnel appointed by the applicant will maintain the records of Explosives as per the Indian Explosives Act.

**7.0 MINE DRAINAGE****7.1 Depth of water table (based on nearby wells and water bodies):**

The area is a plain topography; since the lease applied area consists the most common type of dendritic drainage pattern. The water table in the area is about 58-62m which is observed from the existing private boreholes. The lease area is fully covered by Massive Charnockite formation. The quarry operation confined to well above the water table hence, the Ground Water problem will not arise. If water seepage may occur due to the fracture, the same will be used for Greenbelt. Anyhow, Garland drain will be constructed all along the boundary to prevent surface run-off water entering into the quarry.

**TABLE – 9**

Type	Distance & Direction	Location
Bore Well	140m Southwest sides	10°52'27.62"N 77°31'06.33"E

**7.2 Arrangements and places where the mine water is finally proposed to be discharged:**

The quarry operations are confined to well above the water table during the entire lease period. If water is encountered at quarry due to rain water and seepage, the same will be pumped out by 5HP water pump and discharge to the Green belt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

**8.0 OTHER PERMANENT STRUCTURES (also shown in the map)**

TABLE – 10

S.No.	Description	Particulars	Aerial Distance & Direction															
1	Nearest National Highway	(NH-381) Tiruppur – Oddanchatram	6.1km – Southwest															
2	State Highways	(SH-83A) Kangayam - Dharapuram	780m – East															
3	Railway station	Uttukuli Railway station	31.8km – Northwest															
4	Airport	Coimbatore Airport	55.2km – Northwest															
5	Nearest Habitation	960m - Southwest																
6	Town	Kangayam	14.9 km – Northeast															
7	Nearest Government School	Vendipalayam - Govt. School	6.1km – Northwest															
8	Nearest Dispensary	Kangayam	14.9 km – Northeast															
9	Government Hospital	Kangayam	14.9 km – Northeast															
10	Reserved Forest	No Reserve Forest within 60m Radius. Nearest Reserve Forest is Udaiyur R.F. – 800m NW																
11	Defense Installation/Historical Monuments/ Archaeological	Nil within 500m radius.																
12	Nearby Water Bodies	Varattukarai Odai – 980m Southwest																
13	Interstate Boundary	Around 65.6 km – SW (Kerala State Boundary)																
14	Critically Polluted areas identified by the CPCB	Around 64.2 km – NW (Coimbatore – SIDCO)																
15	Protected areas Notified under wildlife (Protection) Act,1972	Around 43.3 km – NE (Vellode Birds Sanctuary)																
16	Applicability of CRZ, Notification 2011 as amended.	Not Applicable																
17	Applicability of Hill Area Conservation Authority (HACA) Clearance.	Not Applicable																
18	Housing area, EB line (HT & LT Line)	None of the above situated within 50m radius.																
19	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North - S.F.Nos. 984/1 and 984/2A1(P) East - S.F.No. 984/2A2A South - S.F.No. 984/2A1(P) West - S.F.No. 988																
20	Adjacent Patta lands / Govt. Land	<table border="1"> <thead> <tr> <th>Direction</th> <th>Classification</th> <th>Safety Distance</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Patta land</td> <td>7.5m</td> </tr> <tr> <td>East</td> <td>Patta. land</td> <td>7.5m</td> </tr> <tr> <td>South</td> <td>Patta. land</td> <td>7.5m</td> </tr> <tr> <td>West</td> <td>Patta. land</td> <td>7.5m</td> </tr> </tbody> </table>	Direction	Classification	Safety Distance	North	Patta land	7.5m	East	Patta. land	7.5m	South	Patta. land	7.5m	West	Patta. land	7.5m	
Direction	Classification	Safety Distance																
North	Patta land	7.5m																
East	Patta. land	7.5m																
South	Patta. land	7.5m																
West	Patta. land	7.5m																

(Refer Plate No. II):



## STRUCTURE WITHIN 100m

Number of Structures - 5.

TABLE - 11

Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry / residential / farm house / Govt. building	Occupants of Building / Structure	Remarks
1	Shed (5Nos)	labour shed and Office	Non residential	No resident	Nil
STRUCTURE WITHIN 100 -200m Number of Structures - 1					
Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry / residential / farm house / Govt. building	Occupants of Building / Structure	Remarks
1	Crusher Plant	Stone crusher	Industry	No resident	Nil
STRUCTURE WITHIN 200 -300m Number of Structures - 1					
Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry / residential / farm house / Govt. building	Occupants of Building / Structure	Remarks
1	Crusher Plant	Stone crusher	Industry	No resident	Nil

**9.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES****9.1 Employment potential (skilled, semi-skilled, un skilled):**

TABLE - 12

Designation	Present Employment position	Employees Requirement	Total
<b>a) Supervisory category</b>			
Geologist	-	1	1
<b>b) Skilled Labour</b>			
Mine Foreman	-	1	1
Blaster/Mate	-	1	1
Excavator - Operator	-	1	1
Tipper Drive	-	3	3
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	12	12
<b>c) Unskilled</b>			
Security	-	1	1
Laboure & Helper	-	2	2
Co-operator and Cleaner	-	5	5
<b>Total</b>	-	<b>27</b>	<b>27</b>



The proposed output per man shift:

**TABLE – 13**

Expected annual Production of ROM as per Peak Production	39,660m <sup>3</sup>
No. of days likely to be worked	300 days
Average ROM production per day	132m <sup>3</sup>
OMS = Average Production per day / Average employment per day	132m <sup>3</sup> /27 = 4.8m <sup>3</sup>

The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations. It is been ensured that the labour will not be employed less than 18 years, **No child labour** will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the quarry lease period.

## 9.2 Welfare Measures:

### a) Drinking Water:

Packaged drinking water is available from the nearby water vendors in Kundadam which is located about 8.4km on the Southwest side of the lease applied area.

### b) Sanitary Facilities:

Hygienic modern Sanitary Facilities will be constructed in the safety area as semi-permanent structure and it will be maintained periodically.

### c) First aid facility:

First aid kits are kept in Mines office room, in case of such eventuality is the victim will be given first aid immediately at the site by the competent and statutory foreman/permit manager/mate will be in charge of first aid and injured person will be taken to the hospital by the applicant's vehicle. Hospital is available in Kangayam located at a distance of 14.9km on the Northeast side.

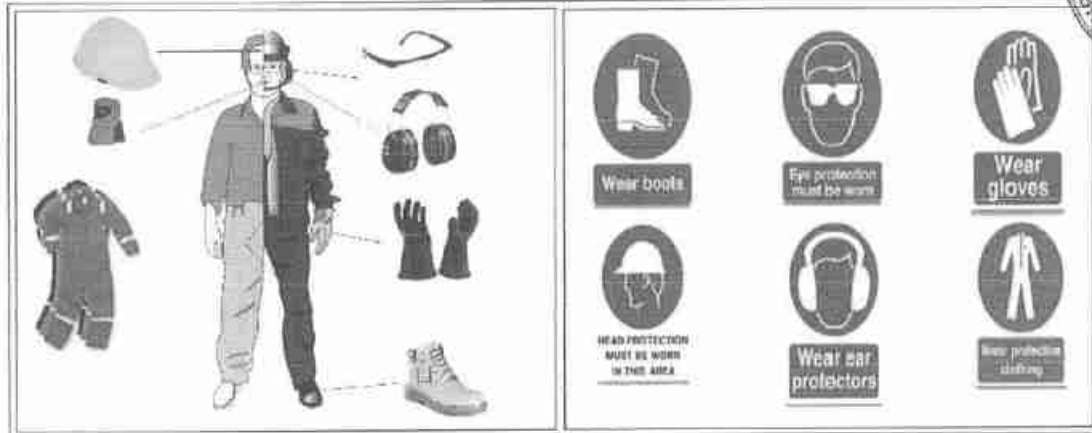
### d) Labour Health:

Periodically medical check-up related to occupational health safety will be conducted to all the workers in applicant own cost.





e) **Precautionary safety measures to the labourers:**



- Helmets,
- Reflector Jackets
- Dust mask
- Mine Goggles,
- Ear plugs,
- Ear muffs
- Safety Shoes

All personnel protective equipment as per the DGMS standard will be provided as per the specification approved by Director of mines safety. Periodically medical check-up will be conducted for all workers for any mine health related problems. Proper training and vocational education will be given by qualified and experienced safety officer to all the employees about the safety and systematic Rough stone quarrying operations. The drillers and workers will be sent for vocational training periodically, to carry out the quarrying operations scientifically and to safe guard the men and machinery and to create awareness about conventional opencast quarrying operations.

**PART - B****10.0 ENVIRONMENT MANAGEMENT PLAN**

The EMP is prepared based on the Mines act, Rules & amendment from by state & central government. If the SEIAA/SEAC instructed the modification and alter the EMP the outcome of their recon would be final and the applicant is instructed to follow the ELA / EMP for its compliance as per the CPCB / TNPCB Norms.

Environment	Anticipated impact	Mitigation measure
<p><b>Land Environment</b></p>	<p>i. Topography of the area will change due to mining activity. Around 1.23.30 Ha. area will be proposed to quarry operation.</p>	<p>i. No waste will be anticipated during entire life of quarry. Hence, backfilling is not proposed in this quarry operation. Anyhow, barbed wire fencing and safety bund will be constructed around the quarry to prevent inadvertent entry of public and cattle.</p> <p>ii. The excavated benches shall be developed for plantation with grasses, herbs and shrubs of local species to improve aesthetic of the area and to prevent any soil erosion and landslide.</p> <p>iii. Mining benches will not exceed beyond the approved height and width.</p> <p>iv. Leftover foreign material like polythene bag, jute bag and useless articles will not be allowed to litter and no ill managed dumping will be used for filling the excavated pits</p>
	<p>ii. Soil quality and it's fertility of adjacent lands will be affected due to fugitive dust and Vehicular emissions during drilling, blasting, loading, unloading and haulage of men and machineries.</p>	<p>This is discussed in following Air Environment due to avoid repetition.</p>



<p><b>Water Environment</b></p>	<p>Surface Mining can have direct impact on physico-chemical characteristics of the local drainage and groundwater resources. The detrimental effects, if any, to water resources resulting from surface mining are caused by following:</p> <ul style="list-style-type: none"> <li>i. Alteration of natural drainage pattern resulting from modification of topography.</li> <li>ii. Abnormal increase in the turbidity of the nearby water bodies.</li> <li>iii. Damage to riparian vegetation and in-stream habitat.</li> <li>iv. The activities can also disrupt the ecological diversity in many ways.</li> <li>v. Contamination of groundwater if mining intersects with the water table.</li> </ul>	<ul style="list-style-type: none"> <li>i. Construction of Garland drain with check dam and settling tank will be constructed around the quarry to collect the surface run off rain water and which will be discharge in to the natural drainage system and water bodies in manure as prescribed by TNPCB standards.</li> <li>ii. Further mining will be completely stopped during the monsoon for free flow of surface run off and allowing natural recharge of groundwater.</li> <li>iii. No wastewater shall be generated from the quarry activity. Proper drainage will be Maintained to eliminate inundation of working pits during rains from run-off water.</li> <li>iv. The mine pit water collected due to rains will be utilized for water spraying on the haul Roads and watering for plantations.</li> <li>v. Septic tanks and soak pits will be provided for the disposal of domestic/washroom effluents.</li> <li>vi. The deposit will be worked from the top surface up to a depth of 37m below ground level and shall not in any case intersect and contaminate the ground water as the depth of the water table in the area is 58 - 62meters.</li> </ul>
<p><b>Air Environment</b></p>	<p>In surface mining operations, the source of air pollution may cause deterioration of air quality due to the fugitive dust emissions from drilling/blasting, scooping, loading-unloading operation of extracted mineral and its transportation. Drilling/blasting and loading of quarry material would be associated with the fugitive dust emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to the road side.</p>	<ul style="list-style-type: none"> <li>i. Green belt will be developed in the safety zone with thick long leaves plant to arrest the fugitive dust and vehicular emissions on the surrounding environments.</li> <li>ii. Wet drilling with dust extractor unit will be carried out to minimize the dust generation.</li> <li>iii. Controlled blasting with Proper blasting pattern will be followed for effective rock fragmentation and generation of minimal fine dust to the atmosphere.</li> <li>iv. Quarry material will be handled under wet condition during loading and unloading to minimize the dust generation of proposition, besides load/unload materials are covered by Tarpaulin until to reach the destination during transportation.</li> </ul>



	Another source of air pollution would be emission from the drilling machinery and excavators/tippers vehicles to be used for loading.	<p>v. Regular water sprinkling to the haul road to arrest the dust generation.</p> <p>vi. Provision of dust filters/ mask to workers working at dust prone and affected areas.</p> <p>vii. Vehicular emission as a result of combustion of diesel generates small particulate matter (PM<sub>10</sub> &amp; PM<sub>2.5</sub>), Nitrogen oxides and Sulphur dioxide (NO<sub>2</sub> &amp; SO<sub>2</sub>). High quality diesel will be used in the motor vehicles to control these pollutants.</p> <p>viii. PUC (Pollution under control) certified vehicles will be used for transportation.</p> <p>ix. CPCB Prescribed emission standards for the vehicles would be followed.</p> <p>x. All vehicles and their exhausts would be well maintained and regularly tested for pollutant concentrations.</p>
<p><b>Noise Environment</b></p>	<p>In the present mining activity for building material, noise will be generated from drilling machinery, blasting and vehicular movement. Noise level in the working environment is compared with the standards prescribed by Central Pollution Control Board as adopted and enforced by the Govt. of India through Noise Pollution (Regulation and Control) Rules, 2000.</p>	<p>i. Selection of new low – noise equipments for the quarry operation.</p> <p>ii. The noise levels shall be maintained within the permissible levels by involving all the noise regulating measures in vehicles and drilling/blasting operations.</p> <p>iii. To ensure minimum vibrations and noise due to blasting, Non-electric delay detonators in continuous sequence is proposed.</p> <p>iv. <b>Personnel Protective Equipment (PPE)</b> like earmuffs and earplugs shall be provided to the employees whose in critical operation like drilling, blasting and excavation as occupational safety measures.</p> <p>v. Proper maintenance done with regular interval by the Oiling and greasing for the machineries and vehicles to control the Source of noise during operation and transportation.</p> <p>vi. Regular and proper maintenance of machinery and transportation vehicles shall be ensured.</p> <p>vii. Transporting vehicles are enforcing the speed limits of 20km/hour within quarry area and not exceed 40km per hour from quarry to destination to reduce noise and vibration level.</p> <p>viii. There would be restrictions on mining activity and vehicular movement during night hours.</p>



<p><b>Biological Environment</b></p>	<p>The area having main floras are Neem, Indian jujube, Cocos nucifera, Palm, Senna auriculata, Calotropis, Casuarina, Teak, Acacia nilotica and shrubs. No plants of botanical interest or animals of zoological interest recorded within 500m radius. The anticipated impacts on biological environment as follows:</p> <ol style="list-style-type: none"> <li>i. Diversity of living insects in the overburden material.</li> <li>ii. Natural habitats of the existing faunas and its breeding will change due to the noise and vibration during operation.</li> <li>iii. Mining may drive away the nearby residents from their habitat.</li> <li>iv. Access roads crossing the riparian areas will have impact on the species disturbing the ecosystem.</li> <li>v. Diminution of the quality and quantity of habitat essential for aquatic and riparian species</li> <li>vi. Deposition of dust on the plant and crop leaves is affecting the photosynthesis, Pollination, ratio of growth and reduction in the yield of agriculture.</li> <li>vii. Excessive and unscientific surface mining results in the destruction of aquatic and riparian habitat through large changes in the channel morphology.</li> </ol>	<ol style="list-style-type: none"> <li>i. The natural habitats of the existing flora and fauna will not be disturbed.</li> <li>ii. No mining will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season for many species.</li> <li>iii. Fruit bearing trees will be planted to survive of the existing native faunas.</li> <li>iv. No clearance of vegetation will be done during the entire mining operations.</li> <li>v. Water sprinkling on haul roads would be reduces the dust emission, thus avoiding damage to the crops and plants.</li> <li>vi. No night hour mining will be carried out which may catch the attention of wildlife.</li> </ol>
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<p><b>Socio Economic Environment</b></p>	<p>- Any activity during mining will have adverse impact on Environment, careful mitigation measures are proposed to balance the impact on the existing environment and the applicant is always instruct to carry out safe, sustainable, eco-friendly mining operations at all times. The following positive impact on the society due to this mining activity.</p> <ol style="list-style-type: none"> <li>i. More than 10 local peoples getting direct employment and More than 15 peoples are getting indirect employment due to this developmental project.</li> <li>ii. The continuation of opportunity for the employments, the nearby villages, living peoples and their life style would be improved.</li> <li>iii. The applicant is advised to invest the CER cost (@ 2% from the total Project Cost) to develop the local Panchayat.</li> </ol> <p>Does not arise.</p>
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**10.1 Environmental impact assessment statement describing impact of mining on the next five years:**

In the mining plan proposed for a production of Rough stone does not involve deep hole drilling and blasting. Such limited mining activity is not likely to cause any impact adversely on the environment. As far as pollution of air, water and noise concerned, the environmental impact studies will be conducted as per EIA notification issued by MoEF& CC. It is B Category mine. The estimated budget would be around Rs.3,80,000/-. The compliance monitoring will be carried out for every six months as prescribed by the MOEF&CC and with state concerned authorities.

**10.2 Proposal for waste management:**

There is no waste anticipated in this Rough stone and Gravel quarrying operation. The entire quarried out materials will be utilized (100%). The maintenance of machineries & fuelling will be carried out as per the TNPCB Norms and the waste will be disposed in the Norms.

**10.3 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):**

In the mining plan only to a maximum depth of 37m below ground level has been envisaged as workable depth for safe & economic quarrying operation during entire life of quarry. There is no waste generated hence, backfilling is not possible. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for Green belt development purpose. The quarry area will be fenced with Barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle.

**10.4 Programme of Greenbelt development (indicate extend, number, name of species to be afforested):**

The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development. Around 2400m<sup>2</sup> area will be utilized for green belt development by planting 300 numbers along the safety zone during entire lease period also around 200 tree saplings in the approach road at first year of the plan period and 400 tree saplings from third year onwards in quarried out top benches with 2m height tree saplings with an anticipated survival rate of 80% with maintain atleast 700 plants during the entire life of the quarry.

As per the SEIAA Recommendation the plantation will be carried out based on the output Environmental Clearance and the recommended species will be carried out for green belt development. Appropriate species of trees will be planted in a phased manner as described below.



TABLE - 14

Year	No. of trees proposed	Area to be covered (m <sup>2</sup> )	Name of the species	No. of trees expected to be grown
I	60	480	Neem, Pongamia	80
II	60	480	Pinnata, Cordia	80
III	60	480	dichotoma, Mango,	80
IV	60	480	Thespesia populnea,	80
V	60	480	Mantharai, etc.,	80

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

Budget Provision for the Mining Plan period:

TABLE - 15

S. No	Monitory and Analysis Description	Rate per location	No. of location	Total Charges/ six months	Total Charges/ year
1	Ambient air quality monitoring	6500	4	26000	52000
2	Noise level monitoring	250	4	1000	2000
3	Ground vibration monitoring	1000	2	2000	4000
4	Water sampling and analysis	9000	1	9000	18000
<b>Total EMP Cost/ year</b>					<b>76,000</b>

The EMP cost would be around **Rs. 3,80,000/-** for the period of five years.





A. Operational Cost / Project Cost / Investment:		Cost (Rs.)												
i) Land cost	<p>The Land value as per the Government Guideline land cost is about,</p> <table border="1"> <thead> <tr> <th>S.F.No.</th> <th>Extent (Ha.)</th> <th>Cost/Ha. (Rs.)</th> <th>Cost of the area (Rs.)</th> </tr> </thead> <tbody> <tr> <td>984/2A1(P)</td> <td>1.61.95</td> <td>618000</td> <td>10,00,851</td> </tr> <tr> <td><b>Total</b></td> <td><b>1.61.95</b></td> <td><b>-</b></td> <td><b>10,00,851</b></td> </tr> </tbody> </table> <p>Round of Rs.10,01,000/- (Source: <a href="https://tnreginet.gov.in/portal/">https://tnreginet.gov.in/portal/</a>)</p>	S.F.No.	Extent (Ha.)	Cost/Ha. (Rs.)	Cost of the area (Rs.)	984/2A1(P)	1.61.95	618000	10,00,851	<b>Total</b>	<b>1.61.95</b>	<b>-</b>	<b>10,00,851</b>	10,01,000
S.F.No.	Extent (Ha.)	Cost/Ha. (Rs.)	Cost of the area (Rs.)											
984/2A1(P)	1.61.95	618000	10,00,851											
<b>Total</b>	<b>1.61.95</b>	<b>-</b>	<b>10,00,851</b>											
ii) Machinery cost	<p>The following machineries are proposed on rental basis to meet out the productions. The rental cost would be around (Including Fuel, oil, grease, spares, etc.,)</p>	20,00,000												
iii) Refilling/ Fencing	Fencing will be constructed around the quarry pit to prevent the inadvertent entry of public and cattle cost would be around (Total Peripheral length 500m x Rs. 300/meter)	1,50,000												
iv) Labourers shed	Labour shed will be constructed as semi-permanent structure. The cost is around	5,00,000												
v) Sanitary facility	Adequate latrine and urinal accommodation has provided at conveniently accessible places the cost would be around	1,00,000												
vi) Others items	First aid room & accessories	50,000												
vii) Drinking water facility for the labourers	Packaged drinking water will be provided for all the Labours. Drinking water will be readily available at conveniently accessible points during the whole of the working shift the cost would be around.	1,00,000												
viii) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.	50,000												
ix) Safety kit	All the Safety kit such as Helmet, Earmuffs, Goggles, Reflector Jackets, Safety shoes etc., will be provided to the workers by the applicant own cost which would be around.	50,000												
x) Water sprinkling	Water will be sprinkled in the haul roads by water sprinkler. The cost would be around.	3,00,000												
xi) Garland	Construction of garland drains to divert surface run-off	1,20,000												



drains	from virgin area away from quarrying area.	
xii) Greenbelt etc.	Greenbelt development and maintenance will be carried out in the boundary barriers the cost would be around (300 saplings x Rs. 200/sapling).	60,000
	Greenbelt development and maintenance will be carried out in the quarried out top benches (400 saplings x Rs. 200/sapling).	80,000
	Greenbelt development and maintenance will be carried out in the Panchayat road (200 saplings x Rs. 200/sapling).	40,000
	<b>Total Cost</b>	<b>46,01,000</b>

**B. EMP Cost: (Per year)**

Air Quality monitoring	Rs. 52,000/-
Water Quality Sampling	Rs. 18,000/-
Noise Monitoring	Rs. 2,000/-
Ground vibration test	Rs. 4,000/-
<b>Total Cost</b>	<b>Rs. 76,000/-</b>

Total EMP Cost for the five years period is **Rs.3,80,000/-**

Description	Amount (Rs.)
<b>A. Operational Cost</b>	<b>Rs. 46,01,000/-</b>
<b>B. EMP Cost</b>	<b>Rs.3,80,000/-</b>
<b>Total Project Cost (A+ B)</b>	<b>Rs.49,81,000/-</b>
The applicant indents to involve corporate environment responsibilities (CER) activity like Water Purifier, Plantation, Books to Library, sanitary facility and as per requirement to the Vendipalayam Government School at 2.0% from the total project cost. The Cost would be around <b>Rs.1,00,000/-</b> . If the concerned authority is directed to modify the CER cost and mode of utilization of the cost, the same will be implemented by the applicant.	<b>Rs. 1,00,000/-</b>
<b>Total Cost</b>	<b>Rs.50,81,000/-</b>
The Total cost would be around fifty lakh and eighty one thousand only.	

**11.0 PROGRESSIVE QUARRY CLOSURE PLAN****11.1 Introduction:**

The entire area is proposed for a short period of 5 years only hence, the progressive quarry closure plan may not be applicable to this quarry. Anyhow, during temporary discontinuance of quarry the following measures will be taken.

- a. Barbed wire fencing will be constructed around the quarry.
- b. Benches will be smoothening.
- c. Quarry will be closed & sentries will be posted round the clock.
- d. Green belt development will be maintained.
- e. Machineries will be removed from pit and engaged in another site.

**11.2 Present and Post Land use pattern:**LAND USE TABLE – 16

Description	Present area (Ha)	Area required during the first five year (Ha)	Area at the end of lease period (Ha)
Area Under Quarry	Nil	1.23.30	0.74.8
Site Services	Nil	0.01.00	0.01.0
Roads	Nil	0.02.00	0.02.0
Green Belt	Nil	0.24.00	0.08.2
Unutilized Area	1.61.95	0.11.65	0.05.0
<b>Grand Total</b>	<b>1.61.95</b>	<b>1.61.95</b>	<b>1.61.95</b>

**11.3 Statutory obligations:**

The applicant ensures to comply all the conditions stipulated in the precise area communication letter before grant of quarry lease and during the course of quarry operations as per the DGMS, Department of Geology and Mines, Labour Enforcement officer, controller of Explosives etc., circulars, Norms, Rules, Regulations and Act.

**11.4 Progressive quarry closure plan preparation:**

Name and address of the Qualified Person who prepared the progressive closure plan and name, address and register number of the executing agency who is involved in the Preparation of progressive quarry closure plan.

Name : **S. ILAVARASAN, M.Sc.,**  
Qualified Person (Under Rule 15(I)(a) and (I)(b) of MCR, 2016)

Address : No. 289, Shanthi Nagar First Cross,  
Chinnakollapatti,  
Salem District.

State with PIN Code : Tamil Nadu – 636 008.

Mobile : +91 94880 69569

Email : ilageo.s@gmail.com

The applicant will himself implement the closure plan; no outside agency will be involved.

**(i) Safety & Security:**

Safety measures will be implemented to prevent access in the excavation area an unauthorized persons as per Mine Act 1952, MMR 1961.

- Safety measures will be implemented as per Mine Act 1952, MMR 1961, and Mines Rules 1955.
- Provisions of MMR 1961 shall be strictly followed and all roads shall be wider than the height of the bench or equal to the height of the bench and have a gradient of not more than 1 in 16.
- The bench height will be 5.0m.
- Width of working bench will be kept about 5.0 m for ease of operations and provide sufficient room for the movement of equipments.
- Protective equipment like dust masks, ear-plugs/ muffs and other equipments shall be provided for use by the work persons.
- Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- Danger signs shall be displayed near the excavations and proper signal by siren alarm will be given to the public before blasting to prevent accident.
- Security guards will be posted.
- In the event of temporary closer, approaches will be fenced off and notice displayed.
- Installation of CCTV cameras in the quarry and entrance of the quarry.
- Monitoring of Quarrying operation by external agency as directed by authorities.

**(ii) Disaster Management and Risk Assessment:**

This should deal with action plan for high risk accidents like landslides, subsidence, flood, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of applicant to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the area may involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, TNMMCR 1959 and other laws applicable to mine will be strictly complied with.
- During heavy rainfall the mining activities will be suspended.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.
- The Greenbelt Development will be formed in around the quarried out top benches and panchayat road of the lease applied area.

**Environmental Monitoring Cell:**

A dedicated team nominated by the mine manager or Agent will monitor and maintain the environmental compliances of the quarry as per the approved Environment Management Plan and report the Compliance to the Mine Manager half yearly.

**Disaster Management Cell:**

The Competent Qualified Statutory managers appointed by the applicant as per the Director of Mines Safety will be responsible for Disaster Management. It care any eventualities his mobile number will be displayed and he will take all the precautions and safety measures as per Mines and Minerals (Development and Regulations) Act, 1957.

**(iii) Disposal of mining machinery**

All the Machineries will be engaged on rental basis, the same has been maintained in good condition during entire life of quarry. Hence, disposal or decommissioning of mining machinery does not arise

**(iv) Care and Maintenance during Temporary Discontinuance:**

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:
  - Quarry roads and approach roads,
  - Fencing on approach roads,
  - Checking and maintenance of machines and equipment,
  - Drinking water arrangements,
  - Quarry office, first aid stations etc.
- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

**(v) Economic Repercussion of Closure of Quarry and manpower Retrenchments:**

The quarry lease is granted for a period of five years only. As per the production Programme envisaged, there will be no effect on the man power as the majority of persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.

**(vi) Abandonment Cost:**

As at present mining is not going to be closed so abandonment cost could not be assessed. However, based on the progressive quarry closure activities during the plan period, cost is assessed as given below at present scenario:

LAND USE TABLE - 17

ACTIVITY		YEARS					RATE	COST (Rs.)		
		I	II	III	IV	V				
Plantation under safety zone	Nos	60	60	60	60	60	@200 Rs Per sapling	60,000		
	Cost	12000	12000	12000	12000	12000				
Plantation in quarried out top benches	Nos	-	-	200	100	100		@200 Rs Per sapling	80,000	
	Cost	-	-	40000	20000	20000				
Plantation in approach road	Nos	200	-	-	-	-			@200 Rs Per sapling	40,000
	Cost	40,000	-	-	-	-				
Barbed Wire Fencing (In Mtrs) 500 Mtrs		1,50,000	-	-	-	-	@300 Rs Per Meter			1,50,000
Garland Drain (In Mtrs) 400 Mtrs		1,20,000	-	-	-	-	@300 Rs Per Meter			1,20,000
<b>TOTAL</b>								<b>4,50,000</b>		

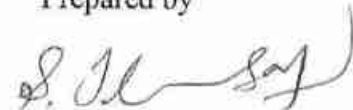
**12.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT**

This Mining plan for Rough stone (Charnockite) and Gravel is under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959. The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied within the quarrying operation, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety. Any violation pointed out by the inspecting authorities shall be rectified and modified after scrutiny comments as per the guidelines of the Concerned Department and Authorities.

This Mining Plan and mine design is prepared based on the requirement instructed by the applicant to me. If there is any change in the production schedule, change of technology, change in product mix during the course of operations, the applicant is advice to prepare a modified mining plan and get approval by the concerned authority for subsequent clearance and approval. The same will be monitored by the inspecting authority of Department of Geology and mining and other Concerned Departments under Rule 25 and sub rule (5)(d) in Rule 36 of Tamil Nadu Minor Mineral Concession Rules, 1959.

I hereby ensure that the information provided is correct to best of my knowledge and experience, some of the information contained in this report has been provided by external sources and by the applicant and is presented as the form as submitted by the applicant. The information is not intended to serve as legal advice related to the individual situation. I do not owe and specifically disclaim any liability resulting from the use during the course of quarrying operations after the grant of lease. The document may be scrutinized by the competent authority before approval.

Prepared by



S. Ilavarasan, M.Sc.,

Qualified Person

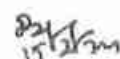
Place: Salem

Date: 31.01.2024

This Mining Plan is approved subject to the Conditions Indicated in the Mining Plan approved Letter No.  
Dated

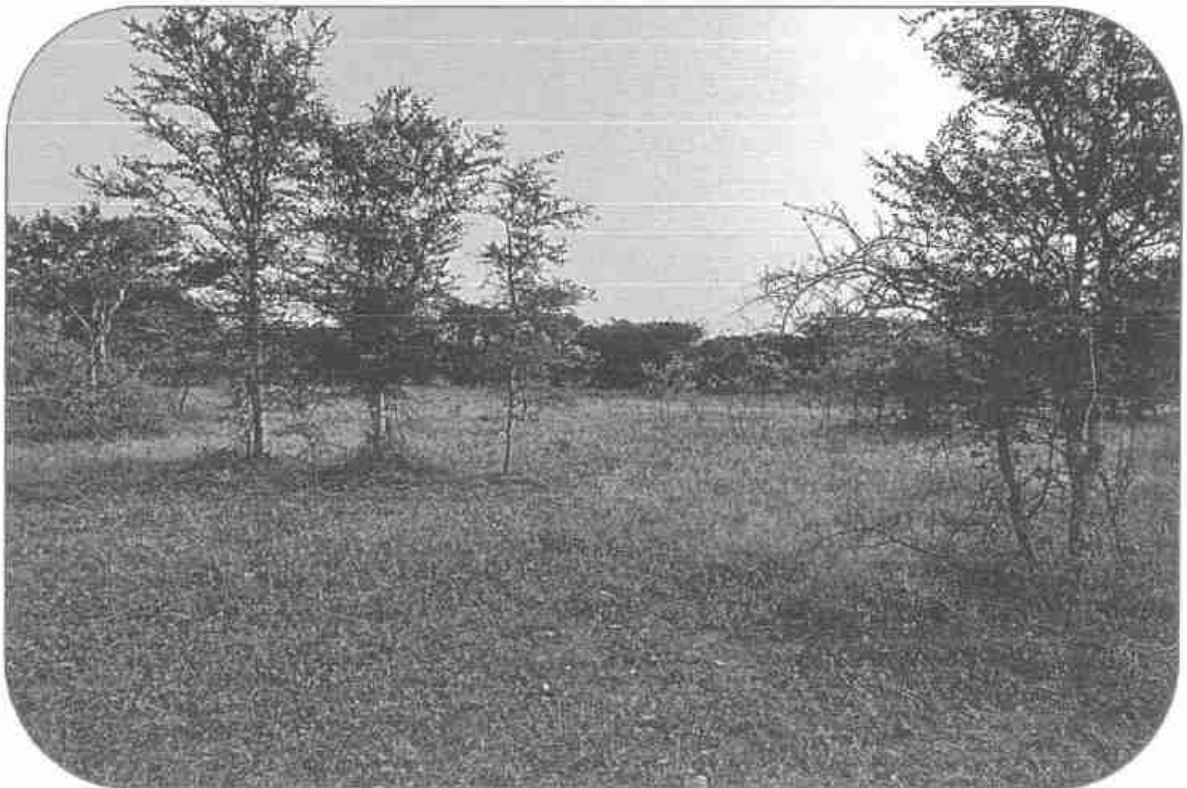
This Mining Plan is approved as per the Powers conferred under rule 41(2) of Tamil Nadu Minor Mineral Concession Rules, 1959

  
DEPUTY DIRECTOR  
Geology and Mining  
Tiruppur





PHOTOGRAPHS OF THE MUDALIPALAYAM  
ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA



1





துணை இயக்குநர் அலுவலகம்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
திருப்பூர்

ந.க. 110/கனிமம்/2023

நாள்: 24.01.2024.

குறிப்பாணை

பொருள் : கனிமங்களும் சுரங்கங்களும் - சிறுகனிமம் - சாதாரண கற்கள் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - முதலிபாளையம் கிராமம் - புல எண்.984/2A1(Part) ல் 1.61.95 ஹெக்டேர் பட்டா நிலப்பரப்பில் சாதாரண கற்கள் / கிராவல் மண் வெட்டி எடுக்க 5 வருடங்களுக்கு குவாரி குத்தகை உரிமம் கோரி திரு.R.கார்த்திக். த/பெ.ராஜேந்திரன் என்பவர் விண்ணப்பம் அளித்தது - அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் சுற்றுச் சூழல் ஒப்புதல் பெற்று அளிக்க கோருதல் - தொடர்பாக

பார்வை : 1. திரு.R.கார்த்திக் த/பெ.ராஜேந்திரன், 72, காவிலிபாளையம் புதூர், வேலம்பாளையம், திருப்பூர் என்பவரின் மனு நாள்: 20.03.2023.  
2. இவ்வலுவலக கடிதம் இதே எண்.நாள்.21.03.2023  
3. வருவாய் வட்டாட்சியர், காங்கயம் கடிதம் ந.க.14665/2023/ஆ2 நாள்.09.05.2023.  
4. வருவாய் கோட்டாட்சியர், தாராபுரம் கடிதம் ந.க.எண்.896/2023/இ நாள்16.05.2023.  
5. உதவி இயக்குநர் மற்றும் தனி வருவாய் ஆய்வாளர், புவியியல் மற்றும் சுரங்கத்துறை, திருப்பூர் தணிக்கை குறிப்பு நாள். 09.01.2024.  
6. வட்டார வளர்ச்சி அலுவலர், காங்கயம் கடிதம் ந.க.எண்.4372/2022/ஆ1 நாள்.23.01.2024.  
7. அரசு அணை எண் 169 தொழில் (எம்.எம்.சி1) துறை நாள் 04.08.2020.  
8. அரசாணை (பல்வகை) எண். 208, தொழில் (எம்.எம்.சி-1) துறை நாள்: 21.09.2020

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண்.984/2A1(Part) ல் 1.61.95 ஹெக்டேர் பரப்புள்ள பட்டா பூமியிலிருந்து சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க திரு.R.கார்த்திக் த/பெ.ராஜேந்திரன், 72, காவிலிபாளையம் புதூர், வேலம்பாளையம், திருப்பூர் என்பவர் பார்வை 1 ல் கண்டவாறு விண்ணப்பம் அளித்துள்ளார்.

2) மேற்படி விண்ணப்பங்கள் தொடர்பாக, வட்டார வளர்ச்சி அலுவலர், குண்டாம், வட்டாட்சியர், காங்கயம், வருவாய் கோட்டாட்சியர், தாராபுரம் மற்றும் உதவி இயக்குநர் (கனிமம்) மற்றும் தனி வருவாய் ஆய்வாளர் (கனிமம்) ஆகியோர் புலத்தணிக்கை மேற்கொண்டு திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், பட்டா புல எண்.984/2A1(Part) ல் 1.61.95 ஹெக்டேர் பரப்பில் திரு.R.கார்த்திக் த/பெ.ராஜேந்திரன்



என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் குவாரி உரிமம் வழங்க கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

**நிபந்தனைகள்:**

- திருப்பூர் மாவட்டம், காங்கயம் வட்டம்,முதலிபாளையம் கிராமம், புல எண்.984/2A1(Part) ல் 1.61.95 ஹெக்டர் பரப்பளவுள்ள பூமியிலிருந்து சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க குவாரி குத்தகை உரிமம் வழங்குவது தொடர்பாக ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டம் மற்றும் சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் ஒப்புதல் ஆகியன உரிய காலத்திற்குள் பெற்றளிக்கப்பட வேண்டும்.
- புலத்தை சுற்றி அமைந்துள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணிபுரிய வேண்டும்.
- குத்தகை உரிமம் கோரும் புலத்திற்கு DGPS முறையில் அளவீடு செய்து அதற்கான சான்றிணை சமர்ப்பிக்க வேண்டும்.

3) எனவே, வட்டார வளர்ச்சி அலுவலர், குண்டடம், வட்டாட்சியர், காங்கயம், வருவாய் கோட்டாட்சியர், தாராபுரம் மற்றும் உதவி இயக்குநர் (கனிமம்) மற்றும் தனி வருவாய் ஆய்வாளர் (கனிமம்), திருப்பூர் ஆகியோரின் பரிந்துரை மற்றும் நிபந்தனைகளின் அடிப்படையில், திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், பட்டா புல எண்.986/2A1(Part) ல் 1.61.95 ஹெக்டேர் பரப்பில் மட்டும் 1959ம் வருட தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.19-ன் படி மேற்கண்ட நிபந்தனைகளுக்குட்பட்டு 5 (ஐந்து) வருட காலத்திற்கு திரு.R.கார்த்திக் த/பெ.ராஜேந்திரன் என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் குவாரி உரிமம் வழங்குவதற்குரிய தகுதியான நிலப்பரப்பாக கருதப்படுகிறது.

4. மேலும், தமிழ்நாடு சிறு கனிம சலுகை விதிகள்-1959 விதி எண். 41-ன்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறு மனுதாரரைக் கேட்டுக்கொள்ளப்படுகிறது. மேலும் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின் தொடர்ச்சியாக 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.42-ன் படி சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

துணை இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
திருப்பூர்

பெறுநர்

திரு.R.கார்த்திக்,  
த/பெ.ராஜேந்திரன்,  
72, காவிபாளையம்புதூர்,  
வேலம்பாளையம்,  
திருப்பூர்.

District : Tiruppur

Taluk : KANGAYAM

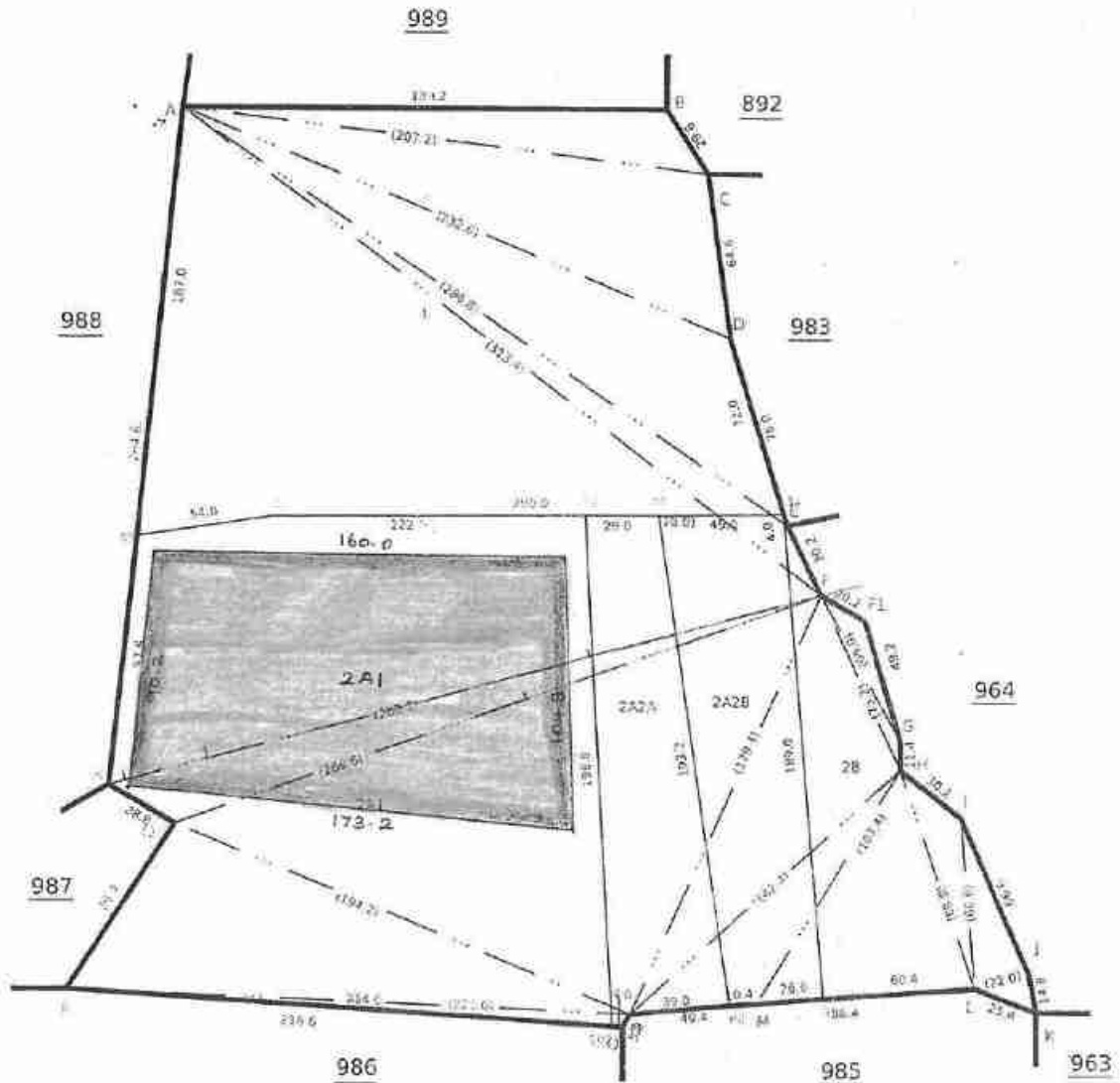
Village : Mudalipalayam [44]



Survey No : 984

Area : Hect 09 Ares 44.50

Scale : 1 : 2000



→ ஹல்கை 984/2A1 ஹா - ஸ் ஹதீதாந் இலாஹி அலமல் அலாதி கோடு ஹதீத.  
 ஹதீத - ஹ.ஜ - 4.00 [ஹல்கை : 1.61.95]

Lease Applied Area-

சா. சீவசாமி  
 சார்ஜியலர்  
 (நில அளவை)  
 காங்கயம்.

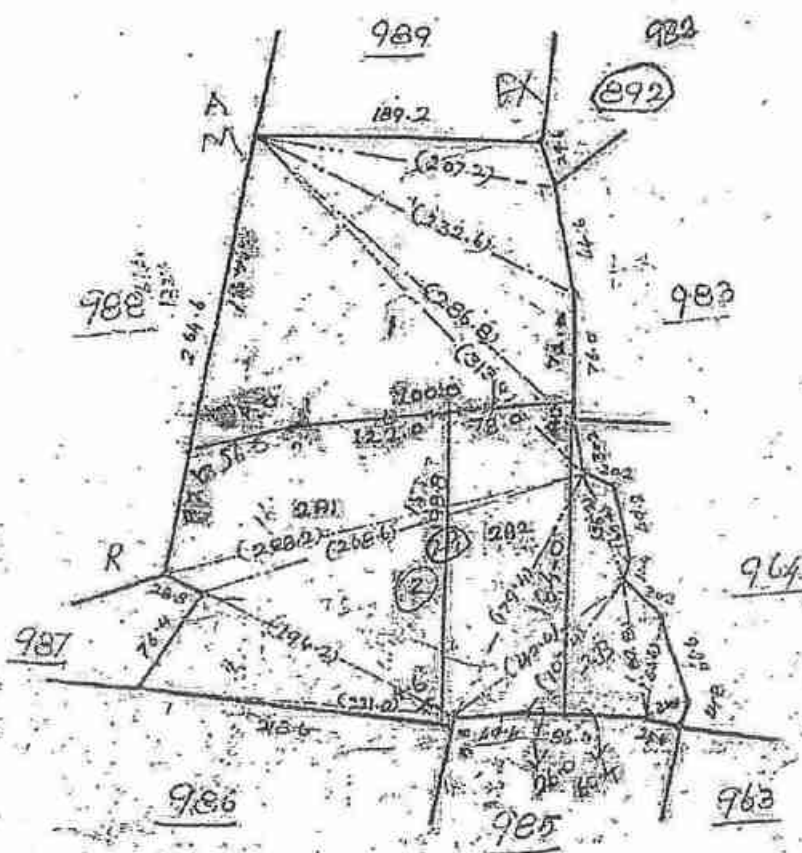




3244  
 984.5

L.M. கார்த்திக்  
 984.5

எண்: 3244  
 பெயர்: கார்த்திக்  
 984.5



352.00  
 3.61.13  
 01.46.93  
 0.81

கார்த்திக்/984.5  
 தஞ்சை - திருச்சி  
 984.5

80/33/1/1-2005  
 2005

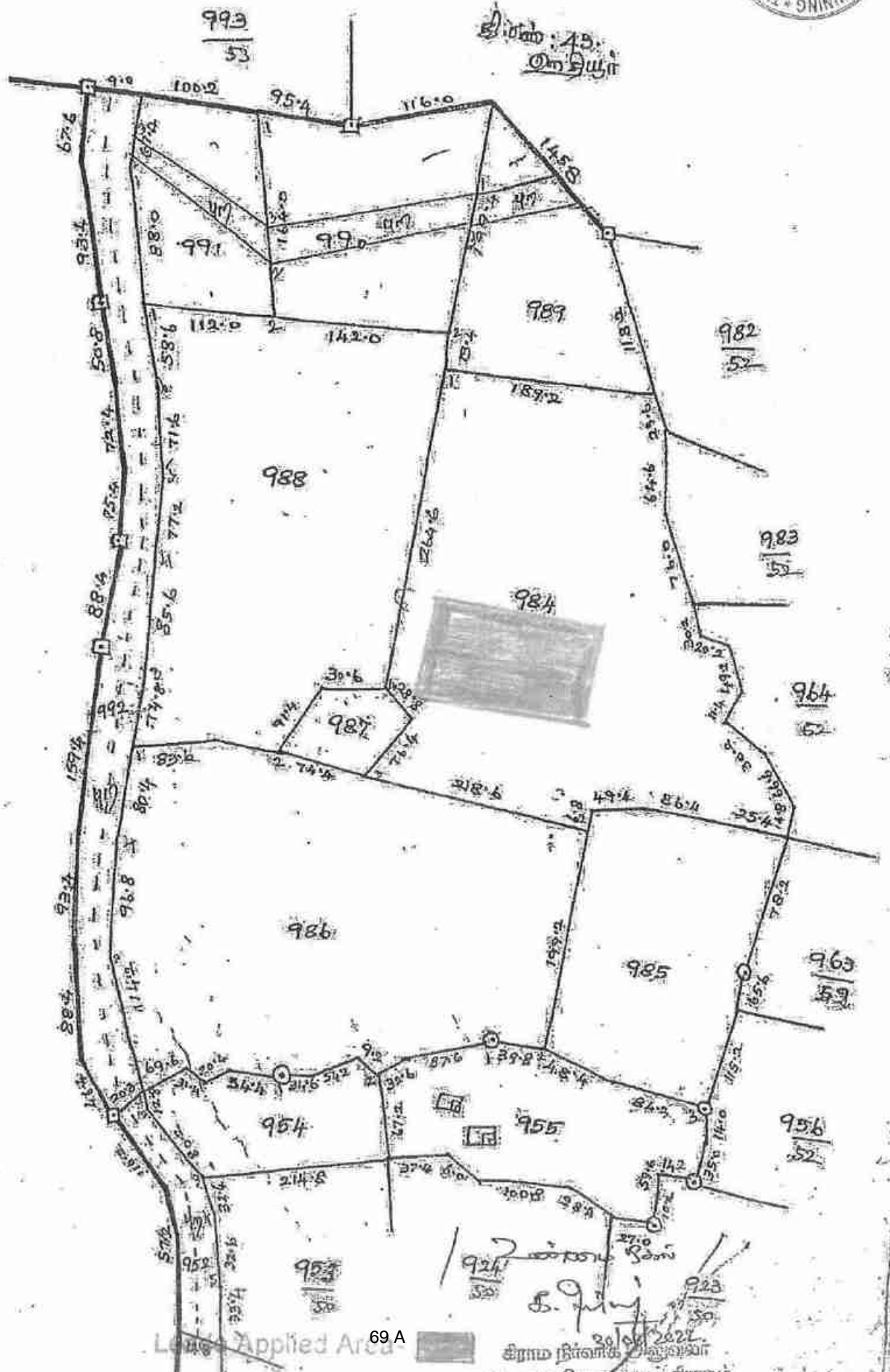
S. Jeyaraj  
 30/04/2022  
 கிராம நிர்வாக அலுவலர்  
 44, குதலிபாளையம் கிராமம்  
 தஞ்சை, த.நா.

A	266.6
B	110.9
R	32.0



சீர்தம் 43  
On Survey

சீர்தம் 43 (உட்கட்ட)



Applied Area 69 A

சீர்தம் 43  
20/01/2022  
20/01/2021



தமிழக அரசு

வருவாய்த் துறை

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



மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

வருவாய் கிராமம் : முதலிபாளையம்

பட்டா எண் : 1035

உரிமையாளர்கள் பெயர்

1. பாலசுப்பிரமணியம்

மகன்

மகேஸ்குமார்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை	
984	2A1	3 - 64.53	5.03	--	--	--	--	2021/0103/32/32207 -2017/32/05/000006 -- 06-08-2021
		3 - 64.53	5.03					

குறிப்பு2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 32/05/044/01035/30409 என் குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 14-02-2023 அன்று 11:53:25 AM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

1432 - ஆம் பசலியில்

சிதம்பரம் மாவட்டம்

நாந்தலம் வட்டம்

பிரபாகர் கணக்கு



நில வரித் திட்டத்தின்படி புலங்களின் விவரம்.					சாகுபடி யாளிகள் பெயர்.	முதல் போகம்.						
(1) நில அளவை எண்.	(2) உட்பிரிவு எண்.	(3) பாப்பு.	(4) திசை.	(5) ஒரு போகம் அல்லது இரு போகம்.		(6) கைப்பற்று தாரகுடைய பெயரும் வண்டலும் அல்லது அனுபோக தாரகுடைய பெயர்.	(7) நிலத்தின் எந்த பகுதி யாவது சாகுபடியாளரால் பயிரிடப்பட்டுள்ளதா.	(8) எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	(9) பயிரின் பெயர்.	(10) பெரிசாள் / அறுவடையான மரப்பு.	(11) உண்மையான பாய்ச்சல் ஆதாரம்.	(12) விளைச்சல் அளவு விழுக்காடு.
984	2A1	3-64-53	5-03		1035 10000000000							

2. கணக்கு 13.80

03/05/2023

ஆம் பிரபாகர் கணக்கு  
44 முதல் போகம்  
நாந்தலம் வட்டம்



கிராமத்தில் வருடவாரி புளவாரி கைப்பற்று சாகுபடி அடங்கல் கணக்கு

இரண்டாம் போகம்.

(13)	எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.
(14)	பயிரின் பெயர்.
(15)	பயிரான / அறுவடையான பாய்ப்பு.
(16)	உண்மையான பாப்ச்சல் ஆகிராம்.
(17)	விலைக்கல் அளவு விழுக்காடு.
(18)	<p>கிராம அலுவலரின் குறிப்புரை :-</p> <p>(1) புலன்களின் பகுதிகளில் மட்டும் பயிரிடப்பட்ட இனங்களில் விஞ்சுகள் ஆளவிடு.</p> <p>(2) கைப்பற்றில் இவ்வாத நிலங்களின் சாகுபடியின் பரப்பு தன்னையும்.</p> <p>(3) முதலைய மாதத்தில் பாப்ச்சல் உதவியின்றி பயிரிடப்பட்டவை என்று பதிவுகியுள்ள நிலங்களுக்கு பிந்தைய மாதங்களில் நிர் பாப்ச்சப்பட்ட விவரங்கள்.</p>
(18அ)	<p>கீழ்க்கண்ட வகையில் பயிரிடப்படாது உள்ள நிலத்தின் தன்மை மற்றும் பரப்பின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில்.</p> <p>(அ) வனம், (ஆ) பயனற்ற பயிர் செய்ய இயலாத நிலம், (இ) விவசாய மற்றும் இதர காரியங்களுக்கு பயன் படுத்தப்படும் நிலம், (ஈ) பயிரிடத்தக்க தரிசு (உ) நிலையான புல் தரைகளும் மற்றும் இதர மேய்ச்சல் நிலங்களும், (ஊ) விதைக்கப்பட்ட நிகர பரப்பில் சேர்க்கப்படாத மரலகை பயிர்களும் தோப்புகளும், (எ) நடப்புத் தரிசுகள் (ஏ) இந்த தரிசு நிலங்கள்.</p>
(19)	பயிர் பார்வையிடும் அலுவலர் குறிப்பணிகள்.

*[Handwritten signature]*  
 தலைவரின் அலுவலர்,  
 உரையார் உள்வட்டம்  
 காங்கிரஸ் வட்டம்.





## அ-பதிவேடு விவரங்கள்

மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

கிராமம் : முதலிபாளையம்

1. புல எண்	984	9. மண் வயனமும் ரகமும்	8 - 4
2. உட்பிரிவு எண்	2A1	10. மண் தரம்	6
3. பழைய புல உட்பிரிவு எண்	984-2A	11. தீர்வை (ரூ - ஹெ)	1.38
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	3 - 64.53
5. அரசு / ரயத்துவாரி	ரயத்துவாரி	13. மொத்த தீர்வை (ரூ - பை)	5.03
6. நிலத்தின் வகை	புஞ்சை	14. பட்டா எண்	1035
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	1.மகேஸ்குமார்

## குறிப்பு 1:



1.

மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 110409 என்ற குறிப்பு எண்ணை உள்ளிடு செய்து உறுதி செய்துகொள்ளவும்.



5	974	P	ர	புஞ்சை	8-3	5	1	09	0	61.00	0	67	482-ஏமலகாமி கவுண்டர்	
Total For Survey Number- 974									2	47.5	2	68		
-	975	ர	புஞ்சை	8-4	6	1	38	3	46.00	3	77	497-விவ்வராதல்	பிளாட்	
-	976	ர	புஞ்சை	8-4	6	1	38	2	13.50	2	95	703-முத்துசாமி கவுண்டர்		
மற்றும் 4 நபர்(கள்)														
-	977	ர	புஞ்சை	8-4	6	1	38	0	23.50	0	32	703-முத்துசாமி கவுண்டர்		
மற்றும் 4 நபர்(கள்)														
-	978	ர	புஞ்சை	8-4	6	1	38	1	61.00	2	22	1022-பி.சாமிநாதன்		
-	979	P	ர	புஞ்சை	8-4	6	1	38	2	30.00	3	17	1022-பி.சாமிநாதன்	
2	979	P	ர	புஞ்சை	8-4	6	1	38	1	69.50	2	34	72-காவிரியம்மாள்	
3	979	P	ர	புஞ்சை	8-4	6	1	38	1	58.00	2	18	482-ஏமலகாமி கவுண்டர்	
Total For Survey Number- 979									5	57.5	7	69		
-	980	ர	புஞ்சை	8-4	6	1	38	3	55.50	4	91	1030-என் முயிலன்		
-	981	ர	புஞ்சை	8-4	6	1	38	3	37.00	4	65	1030-என் முயிலன்		
-	982	ர	புஞ்சை	8-4	6	1	38	0	73.00	1	00	1030-என் முயிலன்		
-	983	ர	புஞ்சை	8-4	6	1	38	0	94.50	1	30	1030-என் முயிலன்		
1	984	P	ர	புஞ்சை	8-4	6	1	38	3	52.00	4	86	871-நல்லம்பாளம் மற்றும் 4 நபர்(கள்)	
2A	984	P	ர	புஞ்சை	8-4	6	1	38	5	11.50	7	05	1035-பி. செல்வராணி	
2B	984	P	ர	புஞ்சை	8-4	6	1	38	0	81.00	1	12	1052-ராஜாமணி	
Total For Survey Number- 984									9	44.5	13	83		
-	985	ர	புஞ்சை	8-4	6	1	38	3	52.00	4	85	799-தண்டபாணி மற்றும் 3 நபர்(கள்)		
A1	986-A1	P	ர	புஞ்சை	8-4	6	1	38	0	6.00	0	08	519-நிழற்குடி பூமிநாதன் வாரியம் செக்ஷன் 5	
A2	986-A2	P	ர	புஞ்சை	8-4	6	1	38	3	17.00	4	38	799-தண்டபாணி மற்றும் 3 நபர்(கள்)	
B1	986-B	P	ர	புஞ்சை	8-4	6	1	38	3	65.00	5	04	1026-சீவா	
B2	986-B	P	ர	புஞ்சை	8-4	6	1	38	4	11.00	5	67	800-ரா சுப்பராய கவுண்டர் மற்றும் 4 நபர்(கள்)	
Total For Survey Number- 986									10	99.0	15	17		
-	987	ர	புஞ்சை	8-4	6	1	38	0	48.50	0	67	247-பி. செல்வராணி		
-	988	ர	புஞ்சை	8-4	6	1	38	7	73.00	10	88	871-நல்லம்பாளம் மற்றும் 4 நபர்(கள்)		
A	989-A	P	ர	புஞ்சை	8-4	6	1	38	0	12.00	0	17	961-எ.சுமார் பட்டா	
மற்றும் 5 நபர்(கள்)														
B	989-B	P	அ	புறம்போக்கு	0-0	0	0	0	0	11.50	0	00	0	சாவை
C	989-C	P	ர	புஞ்சை	8-4	6	1	38	1	96.50	2	71	157-எம். நாராயணசாமி	
Total For Survey Number- 989									2	20.0	2	88		
A	990-A	P	ர	புஞ்சை	8-4	6	1	38	0	58.50	0	78	961-எ.சுமார் பட்டா	
மற்றும் 5 நபர்(கள்)														
B	990-B	P	அ	புறம்போக்கு	0-0	0	0	0	0	31.50	0	00	0	சாவை
C	990-C	P	ர	புஞ்சை	8-4	6	1	38	1	89.50	2	62	157-எம். நாராயணசாமி	
Total For Survey Number- 990									2	77.5	3	40		
A	991-A	P	ர	புஞ்சை	8-4	6	1	38	0	35.50	0	49	961-எ.சுமார் பட்டா	
மற்றும் 5 நபர்(கள்)														
B	991-B	P	அ	புறம்போக்கு	0-0	0	0	0	0	16.00	0	00	0	சாவை
C	991-C	P	ர	புஞ்சை	8-4	6	1	38	1	26.00	1	73	157-எம். நாராயணசாமி	
Total For Survey Number- 991									1	77.5	2	22		
A	991-A	P	அ	புறம்போக்கு	0-0	0	0	0	0	3.00	0	00	0	வண்டி பட்டா
B	991-B	P	அ	புறம்போக்கு	0-0	0	0	0	0	1.50	0	00	0	வண்டி பட்டா
C	991-C	P	அ	புறம்போக்கு	0-0	0	0	0	0	80.00	0	00	0	வண்டி பட்டா

சீரமைப்பு பிரிவு  
 திருச்சி, தமிழ்நாடு  
 44. அகலிபாடையைத் தீர்ப்பு

74 A  
 திருச்சி, தமிழ்நாடு



1	2	3	4	5	6	7	8	9	10	11	12
2	...	982	σ	4	...	8-4	6	1 38	0 73-0	1 00	157 வே. சின்னசாமி கவுண்டர்.
3	...	983	σ	4	...	8-4	6	1 38	0 94-5	1 30	157 வே. சின்னசாமி கவுண்டர்.
14	...	984	σ	4	...	8-4	6	1 38	9 44-5	13 03	871 மு. நல்லம் மாளும் மற்றும் நான்கு பேர் களும், *
15	...	985	σ	4	...	8-4	6	1 38	3 52-0	4 86	799 ரா. தண்டபாணி (1), ச. சஸ்வர முர்த்தி (2), ச. நடராஜ கவுண்டர் (3).
86	A1	986-A1	σ	4	...	8-4	6	1 38	0 06-0	0 08	519 மதுரை பூமி தான போர்டு தலைவர்.
	A2	-A2	σ	4	...	8-4	6	1 38	3 17-0	4 38	799 ரா. தண்டபாணி (1), ச. சஸ்வர முர்த்தி (2), ச. நடராஜ (3).
	(B)	-B	σ	4	...	8-4	6	1 38	7 76-0	10 71	800 ரா. சுப்பராய கவுண்டர் (1), ரா. சந்திரசாமி கவுண்டர் (2), ச. சேனாதிபதி கவுண்டர் (3).
									10 99-0	15 17	
		987	σ	4	...	8-4	6	1 38	0 48-5	0 67	247 மு. நல்லம்மாள்.
		988	σ	4	...	8-4	6	1 38	7 73 0	10 66	871 மு. நல்லம் மாளும் மற்றும் நான்கு பேர் களும், *
	A	989-A	σ	4	...	8-4	6	1 38	0 12-0	0 17	157 வே. சின்னசாமி கவுண்டர்.
	B	-B	σ	4	...	...	...	...	0 11-5	...	சாலை.
	C	-C	σ	4	...	8-4	6	1 38	1 96-5	2 71	157 வே. சின்னசாமி கவுண்டர்.
									2 20-0	2 88	
						8-4	6	1 38	0 56-5	0 78	157 வே. சின்னசாமி கவுண்டர்.

980-989  
*[Handwritten signature]*  
 Deputy Director of Zoology and Fisheries

சென்னை  
 03-33  
 75A



984/2A1 984/2 5.4 .. 8.4 6 1.38 3.64.53

202 984/2 5.4 .. 8.4 6 1.38 1.46.97 2.02  
5.11.50 7.05

4701  
27.07.19

985 / 985 5.4 .... 8.4.6. 1.38 0.85.80 1.18

TK/8A/118/1426  
Date: 11.4.17  
ശബരിമല  
709  
6.9  
ശബരിമല  
ശബരിമല  
2017

985 / 985 5.4 .... 8.4.6 1.38 0.90.04 1.24

4849  
ശബരിമല

985 / 985 5.4 .... 8.4.6 1.38 1.76.16 2.43  
3.52.00 4.85

709  
ശബരിമല  
ശബരിമല

TK/8A/11/1429 dt 10/7/19  
985/1,2,3 ന്റെ ഉപയോഗ കണക്ക്  
എടുക്കപ്പെടും.

ശബരിമല  
10/7/19  
S/S/K/M.

1007/1 - 1007 / 1007 5.4 ... 8-5-7-1.09 - 0.11.00 - 0.12-158 -  
" " 5.4 ... 8-5-7-1.09 - 01.80.00 - 01.97-4957 -  
01.91.00-02.09

Changes

TK/8A/154/1431 dt: 05.08.19  
ശബരിമല

986/B2A - 986 / B2 5.4 ... 8-4-6-1.38 - 02.58.90 - 03.55 - 4959 -  
B2B - " 5.4 ... 8-4-6-1.38 - 01.54.10 - 02.12 - 800  
04.11.00-05.67

T. D. D. D.  
10.8.19  
2.01.19

T. D. D. D.  
ശബരിമല

TK/8A/170/1431 dt: 09.08.19  
ശബരിമല

2000000  
ശബരിമല  
23/05/2027

ശബരിമല  
76A



JAN 2023

கார்த்திக்  
தலைவர்

சம்மதக் கடிதம்

V. சாராண  
ம. ச. சிவசுந்தரன்  
உதவி கமிஷனர், திருப்பூர்

L.C. No. 15263/1

திருப்பூர் மாவட்டம், பல்லடம் வட்டம், 63, வேலம்பாளையம் கிராமம், 561/1, குட்டைத் தோட்டம் என்ற முகவரியில் வசிக்கும் பாலசுப்பிரமணியம் மகன் மகேஷ்குமார் (1) ஆகிய நான், திருப்பூர் மாவட்டம், திருப்பூர் வட்டம், 15, வேலம்பாளையம் கிராமம், காவிலிபாளையம் புதூர், கதவு எண். 72-ல் வசிக்கும் திரு. ராஜேந்திரன் மகன் ஆர். கார்த்திக் (2) ஆகிய உங்களுக்கு எழுதிக் கொடுக்கும் சம்மதக் கடிதம் என்னவென்றால்.

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண். 984/2ஏ1-ல் 3.64.53 ஹெக்டர் பரப்பு பூமியானது நம்மில் (1) இலக்கமிட்டவர்கள் பெயரில் தனிப்பட்டவாக தாக்கலாகியுள்ளது.

மேற்படி பூமியில் நம்மில் (2) இலக்கமிட்ட திரு. கார்த்திக் என்பவர் சாதாரண கற்கள் / கிராவல் மண் வெட்டியெடுக்க விண்ணப்பம் செய்துள்ளார். மேற்படி புலத்தில் துணை / உதவி இயக்குநர் (கனிமம்) அவர்களால் அனுமதி வழங்கும் நாளிலிருந்து பத்து வருட காலத்திற்கு குவாரித்-குத்தகை உரிமம் வழங்க (1) இலக்கமிட்ட எனக்கு எவ்விதமான ஆட்சேபமும் இல்லை. பின்னிட்டு எவ்வித பிரச்சனையும் செய்யமாட்டேன். முழுமனதுடன் சம்மதம் அளிக்கிறோம் என உறுதி கூறுகிறேன்.

NOTARIAL NOTARIAL



भारत सरकार  
Government of India



Issue Date: 22/10/2015

नाम / Name  
**Karthick**  
प्राथमिक नाम / DOB: 10/07/1988  
लिंग / GENDER: MALE

5958 6014 2653

मेरा आधार, मेरी पहचान

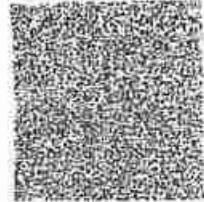


भारतीय विरहित पहचान प्राधिकरण  
Unique Identification Authority of India



प्राथमिकता: S/O. Rajendra, 72,  
KAVILIPALAYAM PUDHUR,  
05 VELAMPALAYAM, TIRUPUR,  
Tamil Nadu, 641652

Print Date: 22/10/2015  
Address: S/O. Rajendra, 72,  
KAVILIPALAYAM PUDHUR, 05  
VELAMPALAYAM, TIRUPUR,  
Tiruppur, Tamil Nadu, 641652



5958 6014 2653



1847



help@uidai.gov.in



www.uidai.gov.in



आयकर विभाग  
INCOME TAX DEPARTMENT  
KARTHICK R  
RAJENDRAN



भारत सरकार  
GOVT. OF INDIA

10/10/1988

Formal/Ident. Account Number  
BBKPK5626C

Handwritten signature of Karthick R. Rajendran.

Signature





பாரதிதாசன் பல்கலைக்கழகம்  
BHARATHIDASAN UNIVERSITY

(Established by the Government of Tamil Nadu in 1982; Recognized by UGC under 2f and 12f of UGC Act, Member, Association of Indian Universities and Association of Commonwealth Universities; Accredited by NAAC with 'A' Grade)

அறிவியல் புலம்  
FACULTY OF SCIENCE

பாரதிதாசன் பல்கலைக்கழக ஆட்சிக் குழு ஏப்ரல் 2005

ஆம் ஆண்டு நடத்திய செயல்முறை நிலத்தியல் தேர்வில்

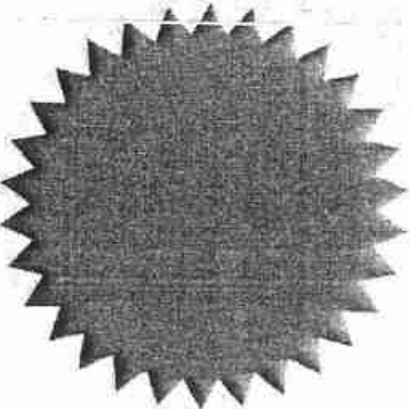
ச. இளவரசன்

என்பவர் முதல் வகுப்பில் தேர்ச்சி பெற்றார் என்று தக்க தேர்வாளர்கள் சான்றளித்தபடி அறிவியல் நிறைஞர் என்னும் பட்டத்தை

அவருக்குப் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.

The Syndicate of the BHARATHIDASAN UNIVERSITY hereby makes known that S. ILAVARASAN has been admitted to the Degree of MASTER OF SCIENCE, having been certified by duly appointed Examiners to be qualified to receive the same in APPLIED GEOLOGY at the Examination field in APRIL 2005 and placed in FIRST Class.

Given under the seal of the University.







# GOVERNMENT OF INDIA

(Ministry of Labour and Employment)  
(Director General of Mines Safety)

Certificate of practical experience granted by the Manager to a  
Candidate for a Manager / Surveyor's / Geologist.

Certificate of Competency Examination under the Coal Mines Regulation  
1957 / Metalliferous Mines Regulation 1961.

I A.DAVID PRASAD being  
the Manager of Karaichuttu Uvari Mine  
belonging to M/s.Transworld Garnet India Pvt. Ltd.  
do hereby certify that Shri. S.ILAVARASAN  
Son of U.SANTHANAM  
of Door No.7C, Mettu Street, Beema Nagar,  
Trichy - 620 001, Tamilnadu.

(Whose signature is appended) worked in above mine.

from 01-06-2005 to 17-07-2011 (Six years One month and  
Seventeen Days)

During his terms of work aforesaid he has obtained practical experience  
as detailed over leaf. The duties connected with his work have involved his  
continuous attendance at the mine and have been efficiently performance by  
him.

I believe him to be of good character and fit & proper person to be  
examined for a Certificate of Competency.

Signature with date [Signature] 23/8/2011  
Manager MANAGER (MINES)  
TRANSWORLD GARNET INDIA PVT. LTD.,  
K. UVARI MINE, Kaganapuram Taluk  
P.O. K.UVARI Tirunelveli Dist. - 627 658  
District TIRUNELVELI  
State TAMIL NADU

[Signature]  
(Signature of Candidate)

NOTE :

Delete if not applicable  
(Garnet Sand) State Name of Mineral





Sl. No.	Particulars of Experience	Practic al (a) Experience	Place of Experience	Period of Practical Experience		Total Experience		
				From	To	Years	Months	Days
1.	As a Geologist :-			01-06-05	17-07-11	6	1	17
	Survey and exploration of Garnet bearing placer mineral in coastal region of Tamilnadu. Reserve estimation and preparation of mining plan, scheme of mining, and PMCP, EIA, EMP, geo technical report. Sieve analysis of mineral samples, production schedules preparation, Co-ordination with mines and mineral processing							
GRAND TOTAL Six Years One Month Only								
Above Period is Given Below (b) Average Daily Employment (c) During the								
In below ground working			In Open cast working			In all		
Nil			100			108		

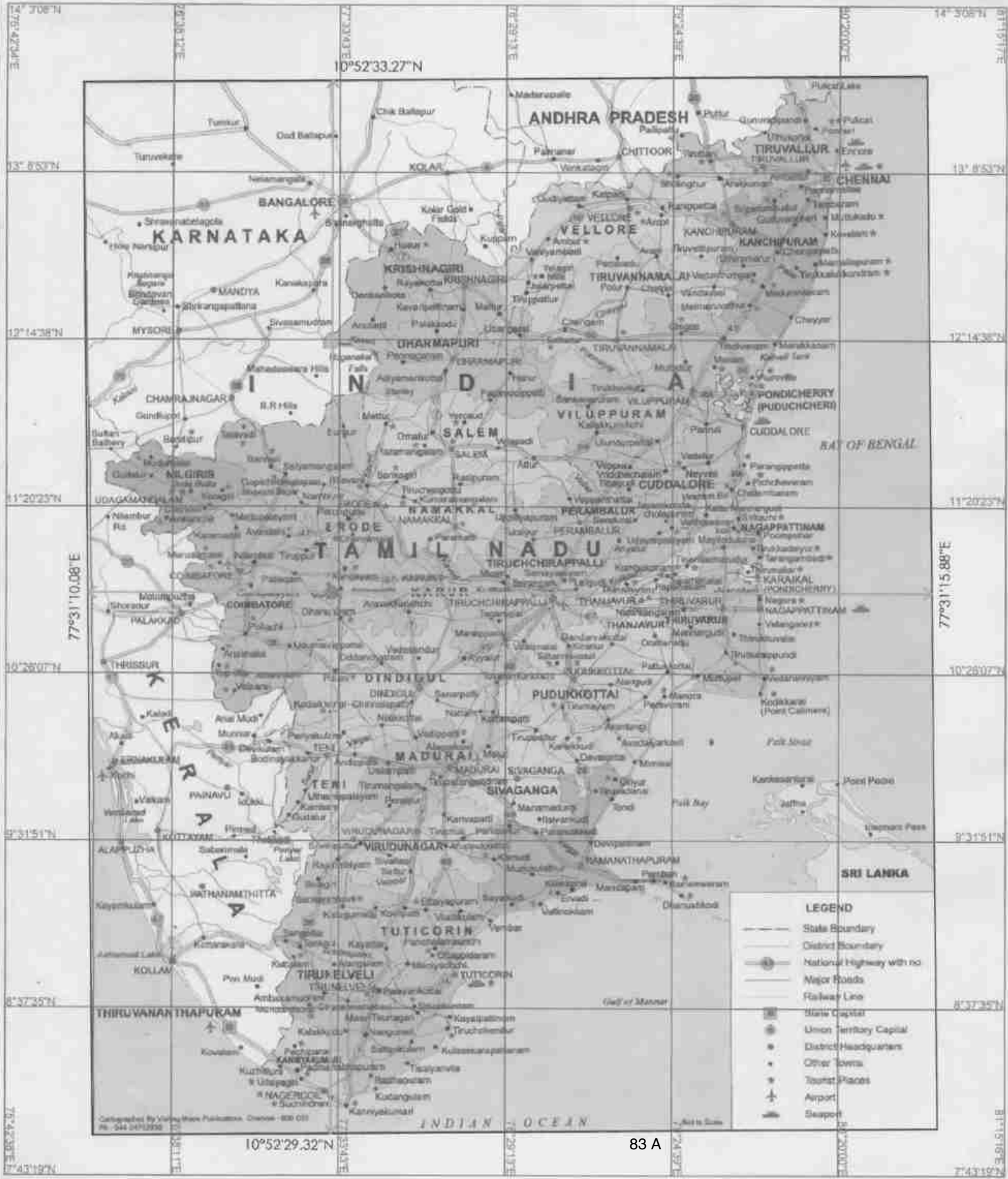
*[Signature]*  
Signature of Candidate

*[Signature]* 22/8/2011  
Signature of Manager with date  
**MANAGER (MINES)**  
**TRANSWORLD GARNET INDIA PVT. LTD.,**  
**K. UVARI MINE, Radhapuram Taluk**  
**Tirunelveli Dist. - 627 658**

Name of Mine  
**TRANSWORLD GARNET INDIA PVT. LTD.**  
**K. UVARI - 627 658**

**INSTRUCTIONS**

- (a) State clearly the duties
- (b) State whether on surface, in open cast workings or below ground.
- (c) State specify the period spent by the applicant different mining operations or surveying operations, as the case may be, if the employment has been such as to involve and how many days a weeks he was employed, at the mine whether underground and in what capacity.
- (d) Delate if the mine is a Metalliferous mine.
- (e) Delate if the mine Coal Mine.



**INDEX**

Q.L.APPLIED AREA: ●

TOPO SHEET NO. : 58 F/09

LATITUDE : 10°52'29.32"N to 10°52'33.27"N  
 LONGITUDE : 77°31'10.08"E to 77°31'15.88"E

**APPLICANT :**

Thiru. R. KARTHICK,  
 S/o. RA JENDRAN,  
 No.72, KAVILIPALAYAMPUTHUR,  
 VELAMPALAYAM,  
 TIRUPPUR DISTRICT.

**LOCATION OF Q.L.A AREA:**

S.F.No. : 984/ 2A1 (P)  
 EXTENT : 1.61.95 Ha.  
 VILLAGE : MUDALIPALAYAM,  
 TALUK : KANGAYAM,  
 DISTRICT : TIRUPPUR,  
 STATE : TAMIL NADU.

**PLATE NO - I**

DATE OF SURVEY : 29.01.2024

**LOCATION PLAN**

SCALE. 1:24,00,000

**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 LEAST MAP  
 AUTHENTICATED BY STATE GOVERNMENT

*S. Ilavarasan*  
 S.ILAVARASAN, M.Sc.,  
 QUALIFIED PERSON

- LEGEND**
- State Boundary
  - District Boundary
  - National Highway with no
  - Major Roads
  - Railway Line
  - State Capital
  - Union Territory Capital
  - District Headquarters
  - Other Towns
  - Tourist Places
  - Airport
  - Seaport

10°52'29.32"N

83 A

INDIAN OCEAN



Express highway: with toll; with bridge; with distance stone.....  
 Roads metalled: according to importance.....  
 Roads, double cartilageway; according to importance.....  
 Unmetalled road. Cart-track. Pack-track with pass. Foot-path.....  
 Streams: with track in bed; undefined. Canal.....  
 Dams: masonry or rock-filled; earthwork. Weir.....  
 River; dry with water channel; with island & rocks. Tidal river.....  
 Submerged rocks. Shoal. Swamp. Roads.....  
 Wells: lined; unlined. Tubewell. Spring. Tanks: perennial; dry.....  
 Embankments: road or rail; tank. Broken ground.....  
 Railways, broad gauge: double: single with station; under constm.....  
 Railways, other gauges: double: single with distance stone; do.....  
 Mineral line or tramway. Kin. Cutting with tunnel.....  
 Contours with sub-features. Rocky slopes. Cliffs.....  
 Sand features: (1)flat. (2)sand-hills(permanent). (3)dunes(shifting).  
 Towns or Villages: inhabited; deserted. Fort.....  
 Huts: permanent; temporary. Tower. Antiquities.....  
 Temple. Chhetri. Church. Mosque. Idgh. Tomb. Graves.....  
 Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage.....  
 Mine. Vine on trellis. Grass. Scrub.....  
 Palms: palmyra; other. Plantain. Conifer. Bamboo. Other trees.....  
 Areas: cultivated; Wooded. Surveyed trees.....  
 Boundary, international.....  
 Boundary, state: demarcated; undemarcated.....  
 Boundary, district; subdivision; taluk or taluk; forest.....  
 Boundary pillars: surveyed; unlocated.....  
 Heights: triangulated: station: point; approximate.....  
 Bench-mark: geodetic; tertiary; canal.....  
 Post office. Telegraph office. Overhead tank.....  
 Rest house or inspection bungalow. Circuit house. Police station.....  
 Camping Ground. Forest: reserved; protected.....  
 Species names: administrative; locality or tribal.....  
 Hospital. Dispensary. Veterinary. Hospital/Dispensary.....  
 Aerodrome. Heliped. Tourist site.....  
 Powerline: with pylons surveyed; with poles unsurveyed.....

**APPLICANT :**

Thiru. R. KARTHICK,  
 S/o. RAJENDRAN,  
 No.72, KAVILIPALAYAMPUTHUR,  
 VELAMPALAYAM, TIRUPPUR DISTRICT.

**LOCATION OF Q.L.A AREA:**

S.F.No. : 984/ 2A1 (P)  
 EXTENT : 1.61.95 Ha.  
 VILLAGE : MUDALIPALAYAM,  
 TALUK : KANGAYAM,  
 DISTRICT : TIRUPPUR,  
 STATE : TAMIL NADU.

**PLATE NO -I-A**

DATE OF SURVEY : 29.01.2024

**TOPO SKETCH OF QUARRY LEASE  
APPLIED AREA FOR 10km RADIUS**

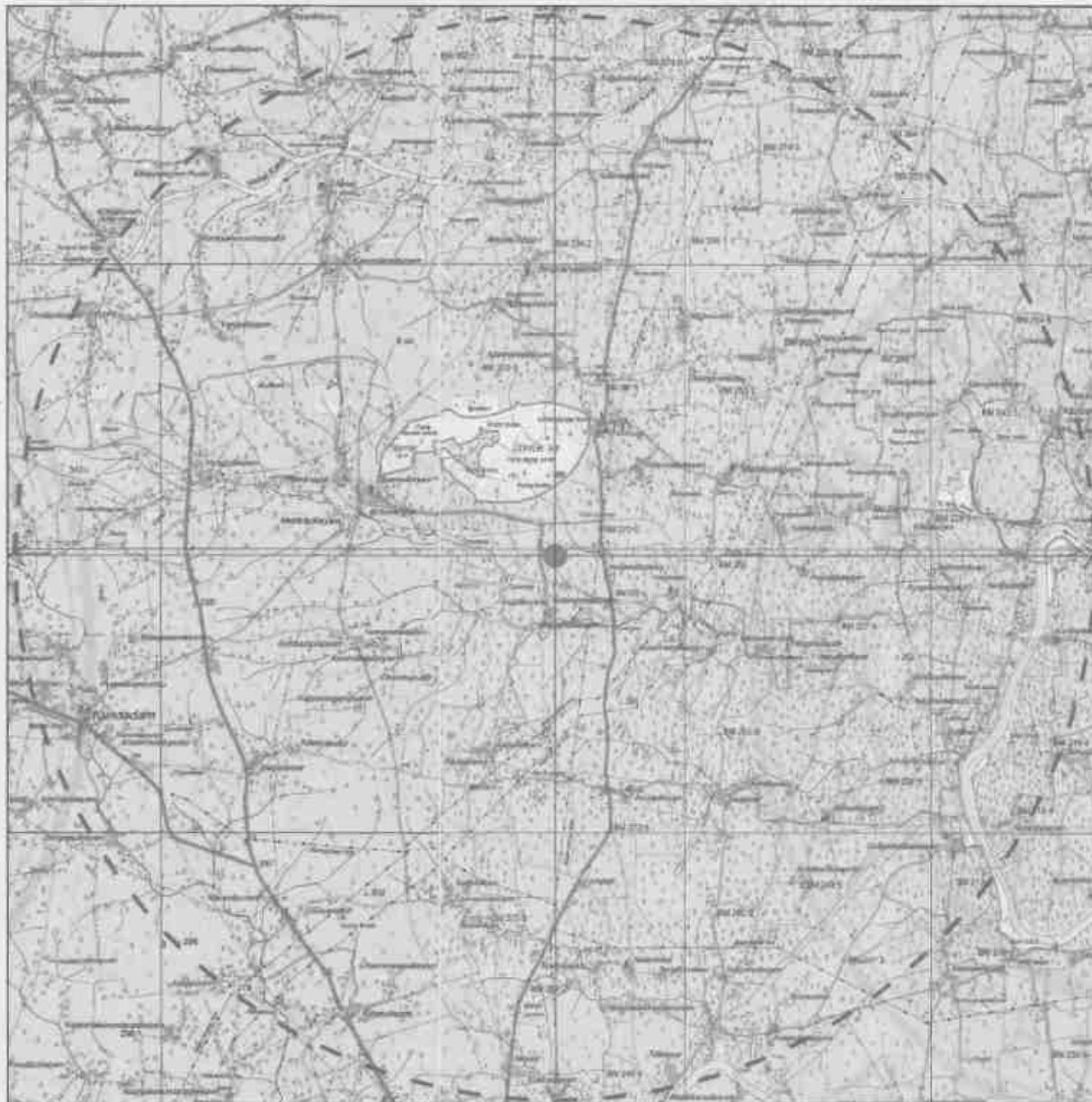
SCALE. 1:1,00,000

**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

S.LAVARASAN, M.Sc.,  
 QUALIFIED PERSON

10° 57' 58.54" N



10° 47' 04.05" N

77° 25' 41.01" E

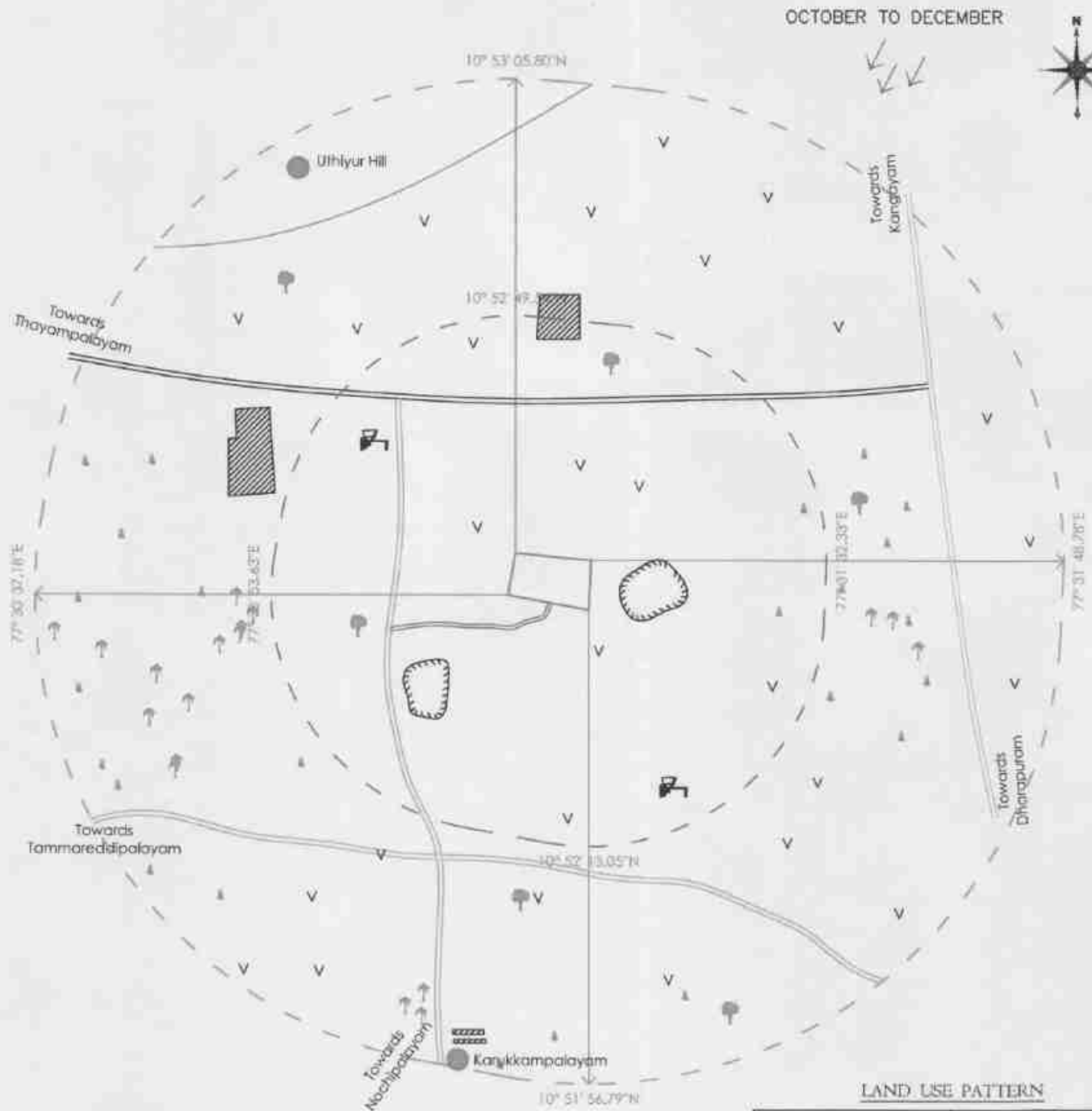
77° 36' 44.94" E

TOPO SHEET NO. : 58 F/09

LATITUDE : 10°52'29.32"N to 10°52'33.27"N  
 LONGITUDE : 77°31'10.08" E to 77°31'15.88" E

10km RADIUS :

Q.L. APPLIED ARE. 84 A :



**INDEX**

- Q.L. APPLIED AREA
- 1 Km RADIUS
- 500m RADIUS
- SEASONAL AGRICULTURE LAND
- TREES
- HABITATION & INFRASTRUCTURE
- QUARRY PIT & CRUSHER
- WIND DIRECTION
- PANCHAYAT ROAD
- APPROACH ROAD
- SH ROAD
- MAJOR DISTRICT ROAD
- BARREN LAND



**APPLICANT :**

Thiru. R. KARTHICK,  
S/o. RAJENDRAN,  
No.72, KAVILIPALAYAMPUTHUR,  
VELAMPALAYAM,  
TIRUPPUR DISTRICT.

**LOCATION OF Q.L.A. AREA:**

S.F.No. : 984/ 2A1 (P)  
EXTENT : 1.61.95 Ha,  
VILLAGE : MUDALIPALAYAM,  
TALUK : KANGAYAM,  
DISTRICT : TIRUPPUR,  
STATE : TAMIL NADU.

**PLATE NO - I-B**

DATE OF SURVEY : 29.01.2024

**ENVIRONMENTAL & LAND USE PLAN**

SCALE: 1:10,000

**PREPARED BY :**

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*S. Ilavarasan*

S.ILAVARASAN,M.Sc,  
QUALIFIED PERSON

**LAND USE PATTERN**

DESCRIPTION	PERCENTAGE	INDEX
QUARRY PITS&CRUSHER	(03%)	
TREES	(07%)	
SEASONAL AGRILAND	(29%)	
ROADS	(07%)	
HABITATION&INFRA..	(06%)	
BARREN LAND	(48%)	
TOTAL	100%	

TOPO SHEET NO. : 58 F/09  
LATITUDE : 10°52'29.32"N to 10°52'33.27"N  
LONGITUDE : 77°31'10.08"E to 77°31'15.88"E

85 A

JULY TO SEPTEMBER

OCTOBER TO DECEMBER

PLATE NO : I-C  
ROUTE MAP



INDEX

- LEASE APPLIED AREA
- SH ROAD
- PANCHAYAT ROAD
- APPROACH ROAD
- MAJOR DISTRICT ROAD

APPLICANT :

Thiru. R. KARTHICK,  
 S/o. RAJENDRAN,  
 No.72, KAVILIPALAYAMPUTHUR,  
 VELAMPALAYAM,  
 TIRUPPUR DISTRICT.

LOCATION OF Q.L.A AREA:

S.F.No. : 984/ 2A1 (P)  
 EXTENT : 1.61.95 Ha,  
 VILLAGE : MUDALIPALAYAM,  
 TALUK : KANGAYAM,  
 DISTRICT - TIRUPPUR,  
 STATE : TAMIL NADU.

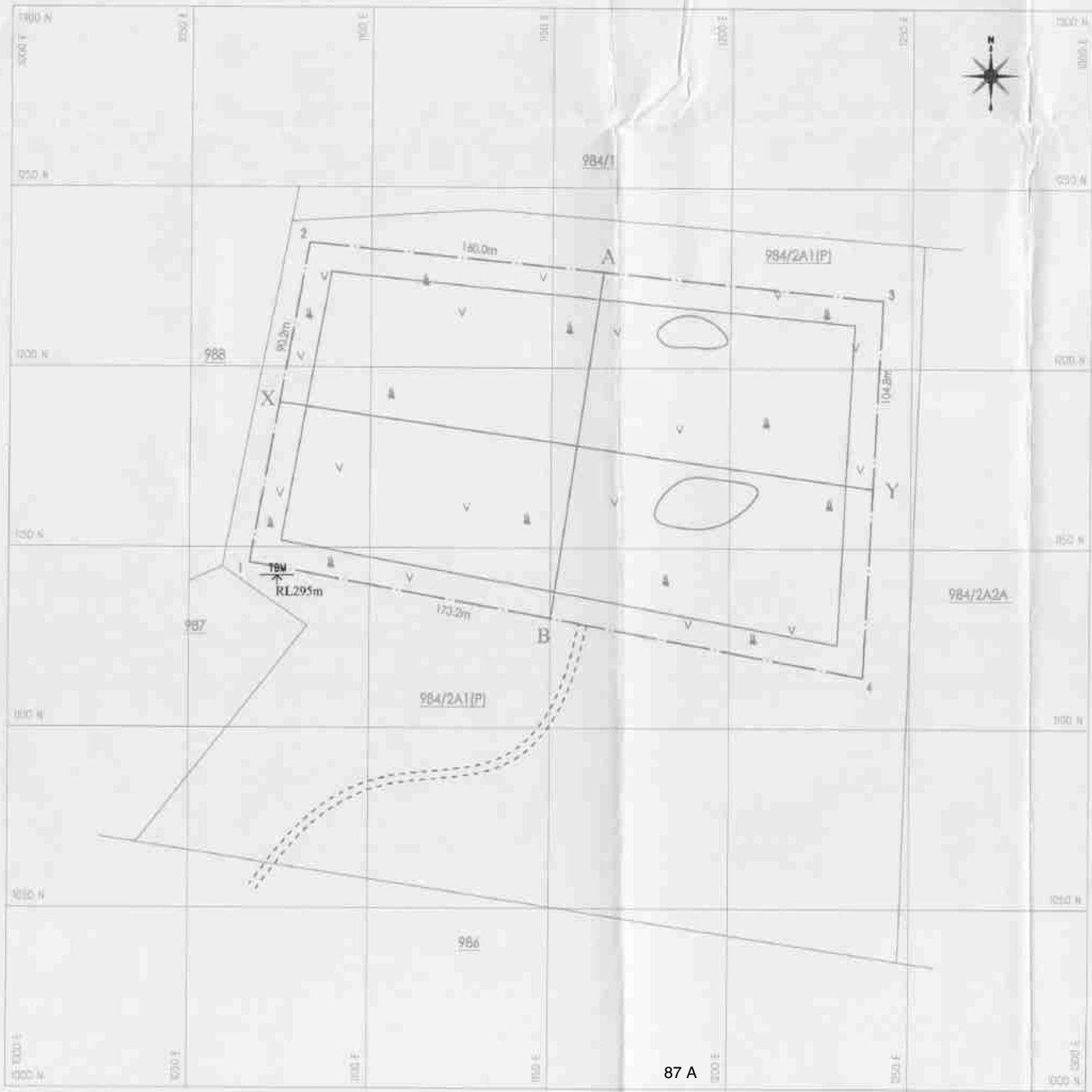
SCALE :

NOT TO SCALE

PREPARED BY:

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 PLATE IS TRUE AND CORRECT TO THE BEST OF MY  
 KNOWLEDGE BASED UPON THE LEASE MAP  
 AUTHENTICATED BY STATE GOVERNMENT

S.ILAVARASAN, M.Sc.,  
 QUALIFIED PERSON



**BOUNDARY CO-ORDINATES**

S.N.	LATITUDE	LONGITUDE
1	10° 32' 30.39"N	77° 31' 10.08"E
2	10° 32' 33.27"N	77° 31' 10.44"E
3	10° 32' 32.72"N	77° 31' 15.88"E
4	10° 32' 29.32"N	77° 31' 15.68"E

DATUM : UTM-WGS84, ZONE 43 NORTH



**INDEX**

-  Q.L. APPLIED AREA
-  7.5m SAFETY DISTANCE
-  TEMPORARY BENCH MARK
-  GRAVEL
-  OUTCROP
-  SHRUBS
-  APPROACH ROAD

**APPLICANT :**

Thiru. R. KARTHICK,  
S/o. RAJENDRAN,  
No.72, KAVILPALAYAMPUTHUR,  
VELAMPALAYAM,  
TIRUPPUR DISTRICT.

**LOCATION OF Q.L.A. AREA:**

S.F.No. : 984/ 2A1 (P)  
EXTENT : 1.61.95 Ha.  
VILLAGE : MUDALIPALAYAM,  
TALUK : KANGAYAM,  
DISTRICT : TIRUPPUR,  
STATE : TAMIL NADU.

**PLATE NO - II**

DATE OF SURVEY : 29.01.2024

**QUARRY LEASE PLAN & 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

*S. Ilavarasan*

S.ILAVARASAN,M.Sc.  
QUALIFIED PERSON



**BOUNDARY CO-ORDINATES**

S.N.	LATITUDE	LONGITUDE
1	10° 52' 38.99"N	77° 31' 10.68"E
2	10° 52' 33.27"N	77° 31' 18.64"E
3	10° 52' 33.72"N	77° 31' 15.66"E
4	10° 52' 29.32"N	77° 31' 15.86"E

DATUM : UTM-WGS84, ZONE 43 NORTH

**SITE SERVICES (Proposed)**

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

**INDEX**

- Q.L. APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- OUTCROP
- ROUGHSTONE
- STRIKE & DIP
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- D.O.E. DEPTH OF ESTIMATION



**APPLICANT :**  
 Thiru. R. KARTHICK,  
 S/o. RAJENDRAN,  
 No.72, KAVILIPALAYAMPUTHUR,  
 VELAMPALAYAM,  
 TIRUPPUR DISTRICT.

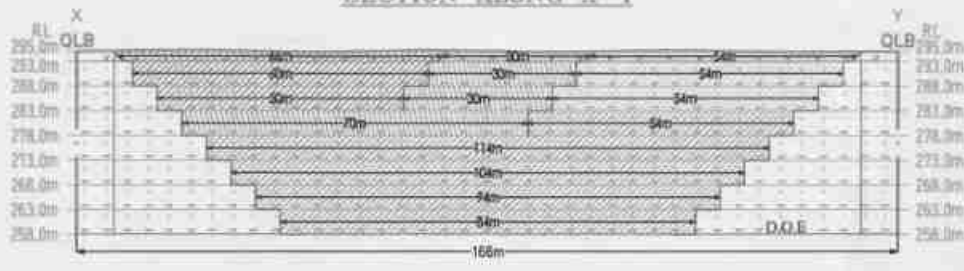
**LOCATION OF Q.L.A. AREA:**  
 S.F.No. : 984/ 2A1 (P)  
 EXTENT : 1.61.95 Ha,  
 VILLAGE : MUDALIPALAYAM,  
 TALUK : KANGAYAM,  
 DISTRICT : TIRUPPUR,  
 STATE : TAMIL NADU,

**PLATE NO - III**  
 DATE OF SURVEY : 29.01.2024

**TOPOGRAPHY, GEOLOGICAL PLAN,  
 YEARWISE DEVELOPMENT &  
 PRODUCTION PLAN & SECTIONS**  
 SCALE: 1:1000

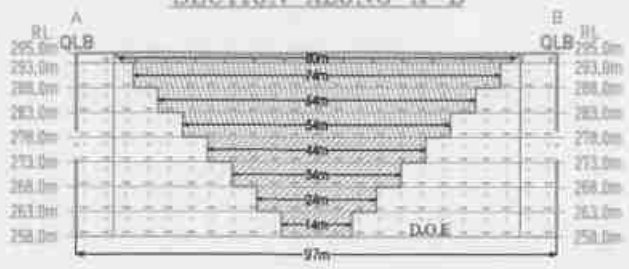
**PREPARED BY :**  
 THIS IS TO CERTIFY THAT THE INFORMATION IN THIS  
 PLATE IS TRUE AND CORRECT TO THE BEST OF MY  
 KNOWLEDGE BASED UPON THE LEASE MAP  
 AUTHENTICATED BY STATE GOVERNMENT  
  
 S. JAYARASAN M.Sc.,  
 QUALIFIED PERSON

**SECTION ALONG X-Y**



- I - yr Proposed area to be Quarried
- II - yr Proposed area to be Quarried
- III - yr Proposed area to be Quarried
- IV - yr Proposed area to be Quarried
- V - yr Proposed area to be Quarried

**SECTION ALONG A-B**

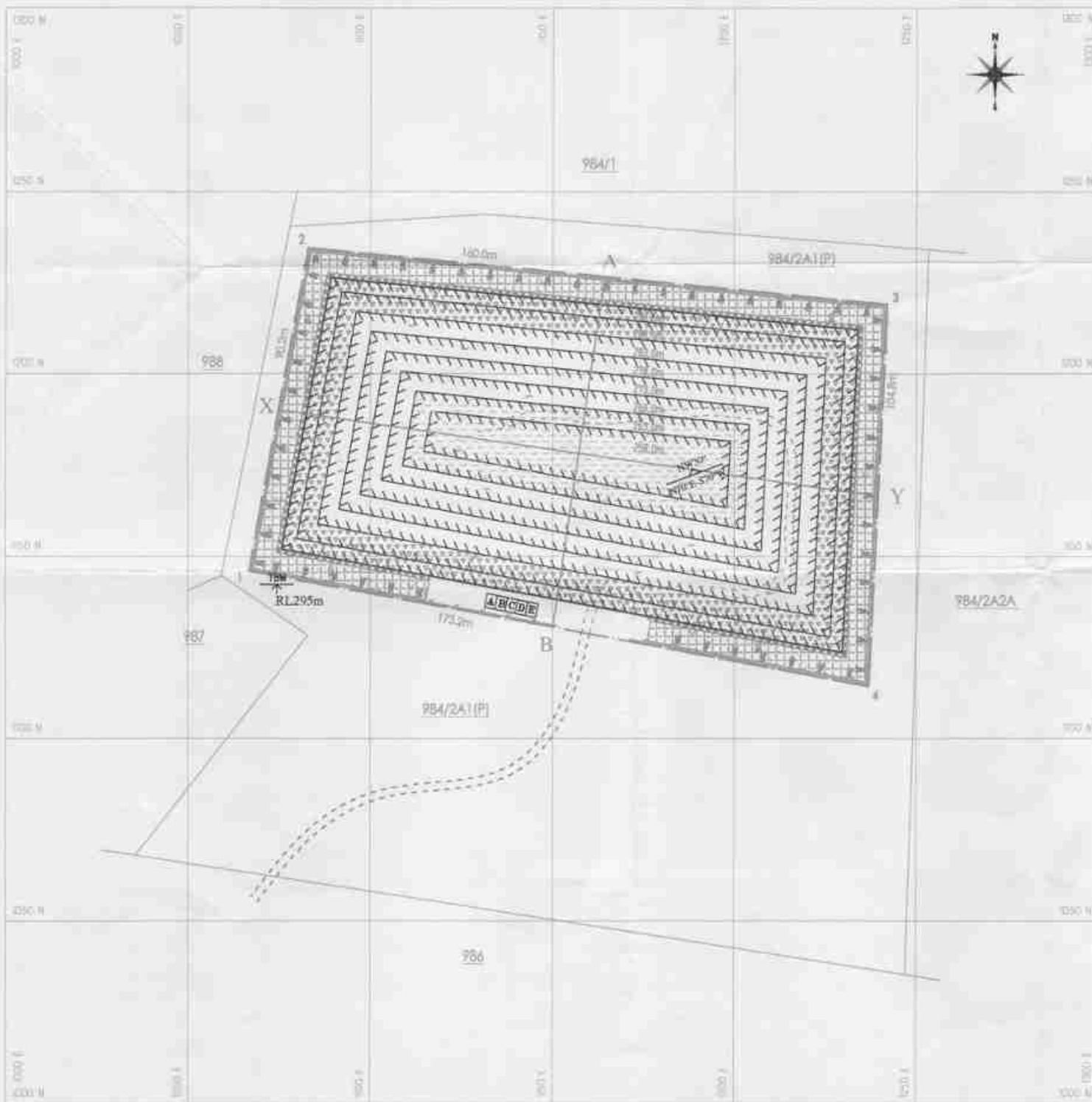


- I - yr Proposed area to be Planted
- II - yr Proposed area to be Planted
- III - yr Proposed area to be Planted
- IV - yr Proposed area to be Planted
- V - yr Proposed area to be Planted

**SITE SERVICES (Proposed)**

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





**BOUNDARY CO-ORDINATES**

S.N.	LATITUDE	LONGITUDE
1	10° 52' 30.58"N	77° 31' 10.88"E
2	10° 52' 33.27"N	77° 31' 10.64"E
3	10° 52' 32.72"N	77° 31' 13.88"E
4	10° 52' 29.32"N	77° 31' 13.88"E

DATUM : UTM-WGS84, ZONE 43 NORTH

**SITE SERVICES**

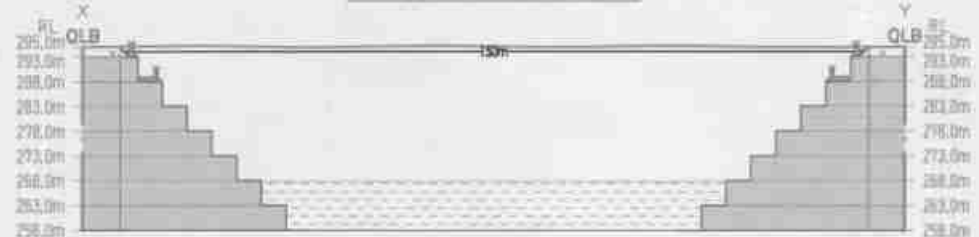
- A - OFFICE
- B - STORE ROOM
- C - FIRST AID ROOM
- D - REST SHELTER
- E - TOILET

**INDEX**

- Q.L. APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- ROUGHSTONE
- STRIKE & DIP
- QUARRY PIT
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- I-V Yr PLANTATION
- BARBED WIRE FENCING
- PROPOSED GARLAND BOUNDARY
- EXISTING LAND FORM
- SOIL LAYER
- REHABILITATED LAND FORM
- OLD SURFACE LEVEL
- FINISHED SURFACE LEVEL
- RAIN WATER STORAGE



**SECTION ALONG X-Y**

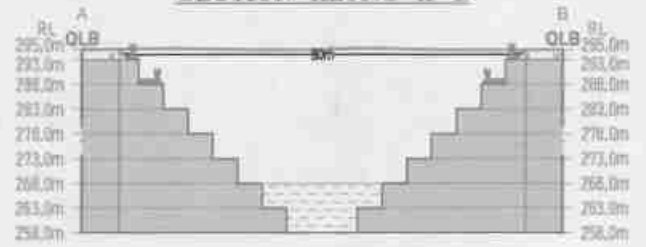


Proposed Pit Dimension (max)  
= 150mX80mX37m(d)

**LAND USE PATTERN**

DESCRIPTION	PRESENT AREA IN (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
QUARRYING PIT	Nil	1.23.30
INFRASTRUCTURE	Nil	0.01.00
ROADS	Nil	0.02.00
GREEN BELT	Nil	0.24.00
UN-UTILIZED AREA	1.61.95	0.11.85
TOTAL	1.61.95	1.61.05

**SECTION ALONG A-B**



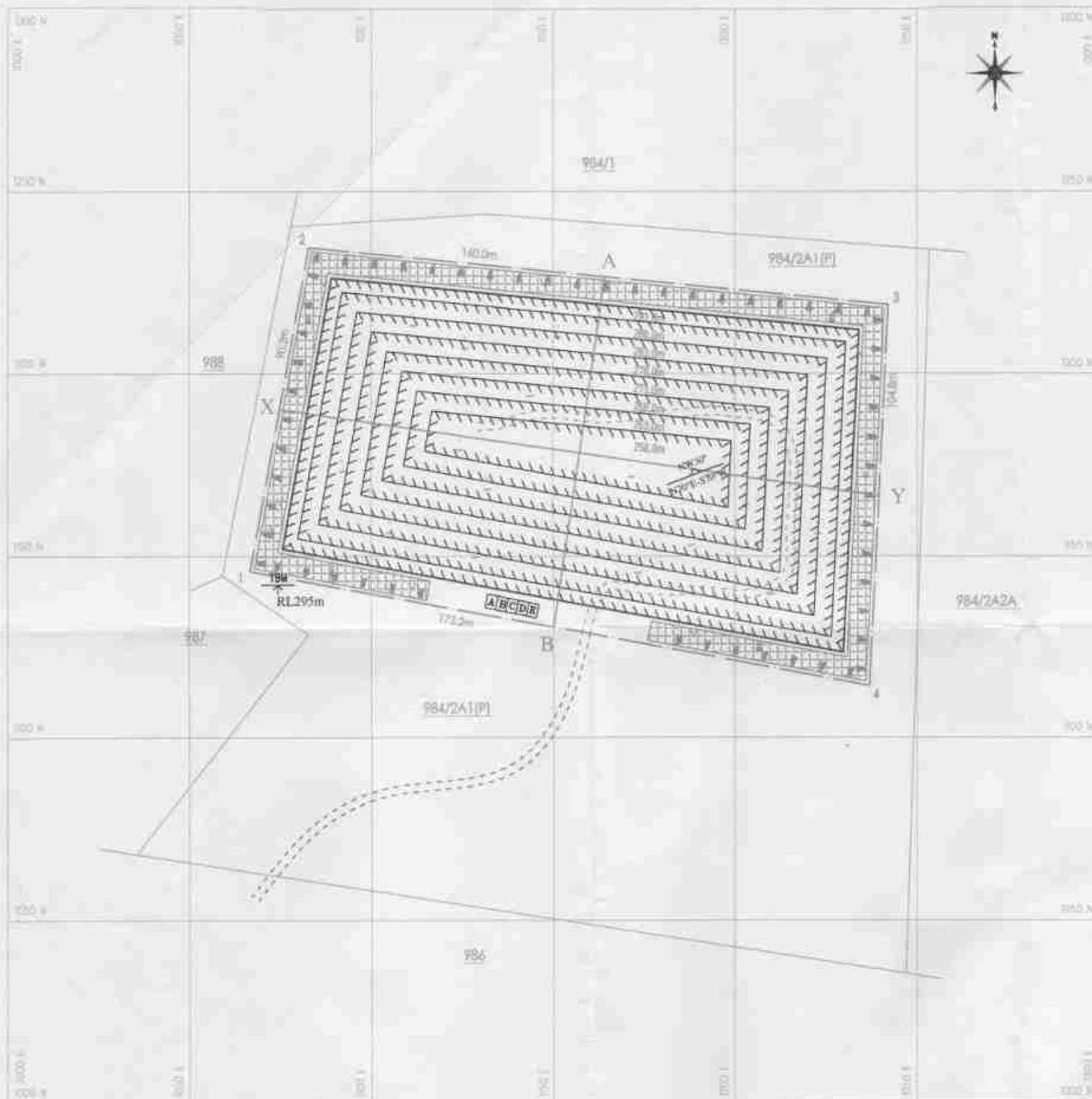
**APPLICANT :**  
 Thiru. R. KARTHICK,  
 S/O. RAJENDRAN,  
 No.72, KAVILPALAYAMPUTHUR,  
 VELAMPALAYAM,  
 TIRUPPUR DISTRICT.

**LOCATION OF Q.L.A. AREA:**  
 S.F.No. : 984/ 2A1 (P)  
 EXTENT : 1.61.95 Ha.  
 VILLAGE : MUDALIPALAYAM,  
 TALUK : KANGAYAM,  
 DISTRICT : TIRUPPUR,  
 STATE : TAMIL NADU.

**PLATE NO - IV**  
 DATE OF SURVEY : 29.01.2024

**PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS**  
 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  
  
 S. JAYARAMAN, M.Sc.,  
 QUALIFIED PERSON



**BOUNDARY CO-ORDINATE**

S.N	LATITUDE	LONGITUDE
1	10° 52' 30.37"N	77° 31' 10.08"E
2	10° 52' 33.37"N	77° 31' 10.64"E
3	10° 52' 32.79"N	77° 31' 15.88"E
4	10° 52' 29.32"N	77° 31' 15.68"E

DATUM : UTM-WGS84, ZONE 43 NORTH

**SITE SERVICES**

- A - OFFICE
- B - STORE ROOM
- C - FIRST AID ROOM
- D - REST SHED/TOILET
- E - TABLET

**INDEX**

- Q.L. APPLIED AREA BOUNDARY
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- ROUGHSTONE
- STRIKE & DIP
- QUARRY PIT
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- I-V Y PLANTATION



**APPLICANT :**  
 THIRU. R. KARTHICK,  
 S/O, RAJENDRAN,  
 No.72, KAVILIPALAYAMPUTHUR,  
 VELAMPALAYAM,  
 TIRUPPUR DISTRICT.

**LOCATION OF Q.L.A AREA:**  
 S.F.No. : 984/ 2A1 (P)  
 EXTENT : 1.61.95 Ha,  
 VILLAGE : MUDALIPALAYAM,  
 TALUK : KANGAYAM,  
 DISTRICT : TIRUPPUR,  
 STATE : TAMIL NADU.

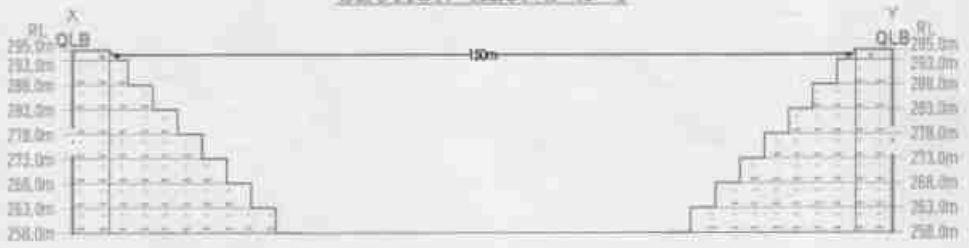
**PLATE NO - V**  
 DATE OF SURVEY : 29.01.2024

**CONCEPTUAL PLAN & SECTIONS**  
 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 LEAST MAP AUTHENTICATED BY STATE GOVERNMENT

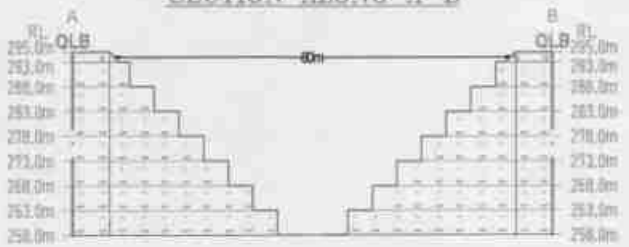
*S. Ilavarasan*  
 S.ILAVARASAN, M.Sc.  
 QUALIFIED PERSON

**SECTION ALONG X-Y**



Ultimate Pit Dimension (max)  
 = 150mX80mX7m(d)

**SECTION ALONG A-B**



**HYDROGEOLOGICAL REPORT FOR**

## HYDROGEOLOGICAL REPORT FOR MUDALIPALAYAM

### ROUGH STONE AND GRAVEL QUARRY

#### 1. INTRODUCTION

##### NAME OF THE APPLICANT WITH ADDRESS-

**Name of the applicant** : **R. Karthick,**  
**Address** : S/o. Rajendran,  
No.72, Kavilipalayampudhur,  
Velampalayam,  
Tiruppur District – 641 652  
**State** : Tamilnadu.  
**Mobile** : +91 98430 17407 & 98654 21654

##### DETAILS OF THE AREA-

**Land Classification** : Patta land  
**Survey No** : 984/2A1(Part)  
**Extent** : 1.61.95 Hectares  
**Village** : Mudalipalayam  
**Taluk** : Kangayam,  
**District** : Tiruppur

The Client requires detailed information on ground water occurrences at proposed project site of Mudalipalayam Rough stone and Gravel quarry. The objective of the present study is to assess the availability of groundwater and comment on aspects of depth to potential aquifers, aquifer availability and type, possible yields and water quality. For this purpose all available hydrogeological information of the areas has been analyzed, and a geophysical survey was done.

The investigations involved hydrogeological, geophysical field investigations and a detailed study in which the available relevant geological and hydrogeological data were collected, analyzed, collated and evaluated within the context of the Client's requirements.

The data sources consulted were mainly:

- a) Central Ground Water Board (CGWB) Data
- b) State & District Geological and Hydrogeological Reports and Maps.
- c) Technical reports of the area by various organizations.

## **2. SCOPE OF THE WORKS –**

The scope of works includes:

- ❖ Site visits to familiarize with the project areas. Identify any issues that might impact the Ground Water Scenario due to proposed mining activities.
- ❖ To obtain, study and synthesize background information including the geology, hydrogeology and existing borehole data, for the purpose of improving the quality of assessment and preparing comprehensive hydrogeological reports,
- ❖ To carry out hydrogeological evaluation and geophysical investigations in the selected sites in order to determine potential for groundwater at project site.
- ❖ To prepare hydrogeological survey reports in conformity with the provisions of the rules and procedure outlined by the Central Ground Water Board (CGWB), by Assessment of water quality and potential infringement of National standards, Assessment of availability of groundwater and Impact of proposed activity on aquifer, water quality and other abstractors.

## **3. BACKGROUND INFORMATION**

### **Geographical information of the study area-**

The investigated site falls in the Toposheet No: **58 F/09** Latitude between **10°52'29.32"N to 10°52'33.27"N** and Longitude between **77°31'10.08"E to 77°31'15.88"E** on WGS datum-1984.

### **Geomorphology and Land Use**

The geomorphologic characteristics of Tirupur are broadly classified into Padi plain, Habitation mask and Water body mask. The land use categories are classified as Built up, Agriculture, Water bodies and Waste land. Soil types in Tirupur block can be divided into Fine, Fine loamy, Loamy skeletal, and Clayey loamy.

### **Climate**

The climate in the plains of Noyyal river basin is "semiarid subtropical monsoonic". The hot months are March, April and May with a maximum temperatures ranging from 35.5°C to 36.8°C and the cool months are November, December and January with minimum temperatures ranging from 23.9°C to 24.1 °C. The mean annual temperature is 29.4°C.

## **Rainfall**

Rainfall in the basin is highly variable due to the orographic effects of the Western Ghats. The western and upper reaches usually receive more than 3000 mm annually during the southwest monsoon whereas the eastern part of the basin receives an annual rainfall of 600 mm, which mostly occurs during the northeast monsoon and most of it is received during the months of April and May.

## **Soil**

The type of soil that occur in Noyyal basin are many and varied, ranging from shallow red non-calcareous soils to very deep grey calcareous ones. A standard reconnaissance soils survey of Coimbatore district reveals the occurrence of 14 different soil series and their associations. These 14 series can be broadly classified in to five categories: red soil, grey soil, alluvial soil, colluvial soil and forest soil

### **1. GEOLOGY**

#### **Regional Geology of Tiruppur District-**

Tiruppur district of Tamil Nadu forms a part of southern Granulitic terrain and is predominantly occupied by crystalline rocks of Archaean to late Proterozoic age. Regionally, the rocks can be grouped under five categories namely i) Charnockite Group represented by Charnockite, Pyroxene Granulite and Magnetite Quartzite, ii) Peninsular Gneissic Complex (II) comprising hornblende-biotite gneiss, iii) Basic intrusive include Pyroxinite/Dunite iv) Younger intrusive comprising, Nepheline-Syenite, Pink Granite, Pegmatite and Quartz veins and v) Quaternary sediments of Kankar and soil.

#### **Stratigraphy of the Area**

Tiruppur District is predominantly occupied by hornblende Biotite gneisses of PGC (II) with enclaves of Magnetite Quartzite, Pyroxene Granulite and Charnockite. The area exposes several bands of Pyroxene Granulite which is medium grained, medium to dark grey in color and stand out prominently in the gneissic country generally parallel to regional foliation. Charnockite is coarse grained, massive, many places it is foliated, grey colored and greasy and exposed as boulder outcrops and small knolls. It is well exposed in Central, Western and Southern parts of the Tiruppur District. The general strike of foliation varies from ENE-WSW, E-W with dipping towards NW and N respectively.

Hornblende-Biotite gneiss is well foliated, medium to coarse grained, pale grey and exposed as sheets and small knolls. Pink Granite gneiss occurs as thin bands and lensoidal bodies. It is a medium grained rock composed of alternating bands of mafic (mainly of biotite

and hornblende) and felsic (Feldspar and Quartz) minerals. It is well recognized in Avinashi area.

### Stratigraphy succession of Tiruppur District

Age	Group	Lithology
Holocene		Block Cotton Soil/Clay ± Gypsum
Cenozoic		Kankar/calc-tufa
Neoproterozoic	Acid intrusive	Quartz veins Pegmatite Pink Granite
	Sivamalai syenite Complex	Nepheline-syenite
	Chalk Hills (Basic Intrusive)	Pyroxenite/Dunite
Archaean- Palaeoproterozoic	Peninsular Gneissic Complex (II) PGC (II)	Pink Granite Gneiss  Hornblende Biotite gneiss
Archaean	Charnockite Group	Charnockite (Unclassified) Pyroxene Granulite Banded Magnetite Quartzite

Basic intrusives such as pyroxenite/dunite occurs as bouldery outcrop and lensoidal bodies in the country rock and mostly concordant to the regional foliation. Many basic intrusives are reported in south and south-east of Tiruppur town. The trend of these bodies is east-west.

Nepheline syenite is a leucocratic, coarse grained rock and composed mainly of Feldspar with Nepheline and shows pitted appearance due to removal of Nepheline. This alkaline rock is available in and around Sivanmalai area only.

Acid intrusive are overlain by sediments of Quaternary age, represented by Kankar and black cotton soil with Gypsum. Most of the area is covered by brown and red brown soil. Some part of the area covered with black cotton soil contains Gypsum as lumps. Black cotton soil covers south-western part of the district.

## **2. GEOPHYSICAL INVESTIGATION METHODS**

A variety of methods are available to assist in the assessment of geological sub-surface conditions. The main emphasis of the fieldwork undertaken was to determine the thickness and composition of the sub-surface formations and to identify water-bearing zones. This information was principally obtained in the field using, and vertical electrical soundings (VES). The VES probes the resistivity layering below the site of measurement. This method is described below.

### **Resistivity Method**

Vertical electrical soundings (VES) were carried out to probe the condition of the sub-surface and to confirm the existence of deep groundwater. The VES investigates the resistivity layering below the site of measurement.

### **Basic Principles**

The electrical properties of rocks in the upper part of the earth's crust are dependent upon the lithology, porosity, and the degree of pore space saturation and the salinity of the pore water. Saturated rocks have lower resistivity than unsaturated and dry rocks. The higher the porosity of the saturated rock, or the higher the salinity of the saturating fluids, the lower is the resistivity. The presence of clays and conductive minerals also reduces the resistivity of the rock.

The resistivity of earth materials can be studied by measuring the electrical potential distribution produced at the earth's surface by an electric current that is passed through the earth. Current is moved through the subsurface from one current electrode to the other and the potential difference is recorded as the current passes. From this information, resistivity values of various layers are acquired and layer thickness can be identified.

The apparent resistivity values determined are plotted as a log function versus the log of the spacing between the electrodes. These plotted curves identify thickness of layers. If there are multiple layers (more than 2), the acquired data is compared to a master curve to determine layer thickness.

This method is least influenced by lateral in-homogeneities and capable of providing higher depth of investigation.

The resistance R of a certain material is directly proportional to its length L and cross-sectional area A, expressed as:

$$R = R_s * L/A \text{ (in Ohm)}$$



Where  $R_s$  is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

$$R = dV/I \text{ (Ohm)}$$

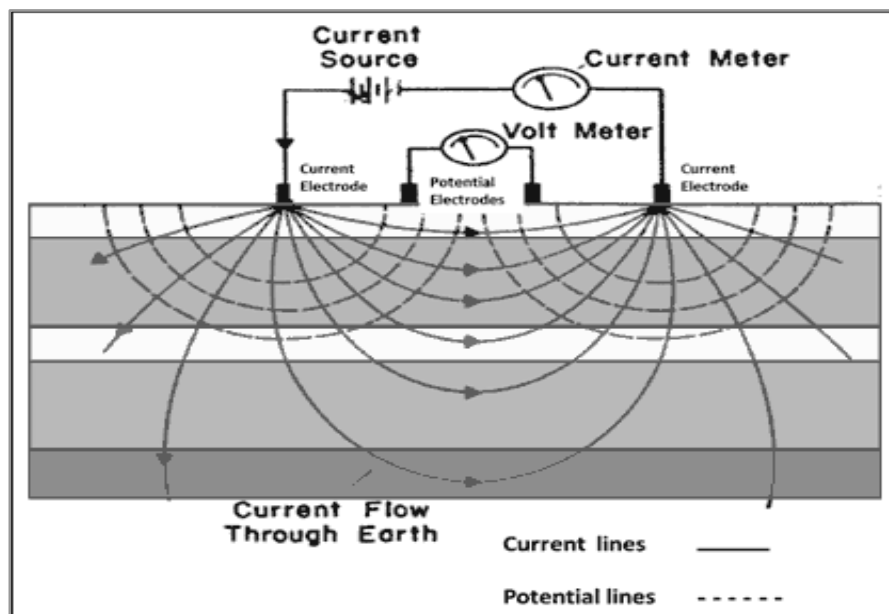
Where  $dV$  is the potential difference across the resistor and  $I$  is the electric current through the resistor. The specific resistivity may be determined by:

$$R_s = (A/L) * (dV/I) \text{ (in Ohm m)}$$

### Vertical Electrical Sounding (VES)

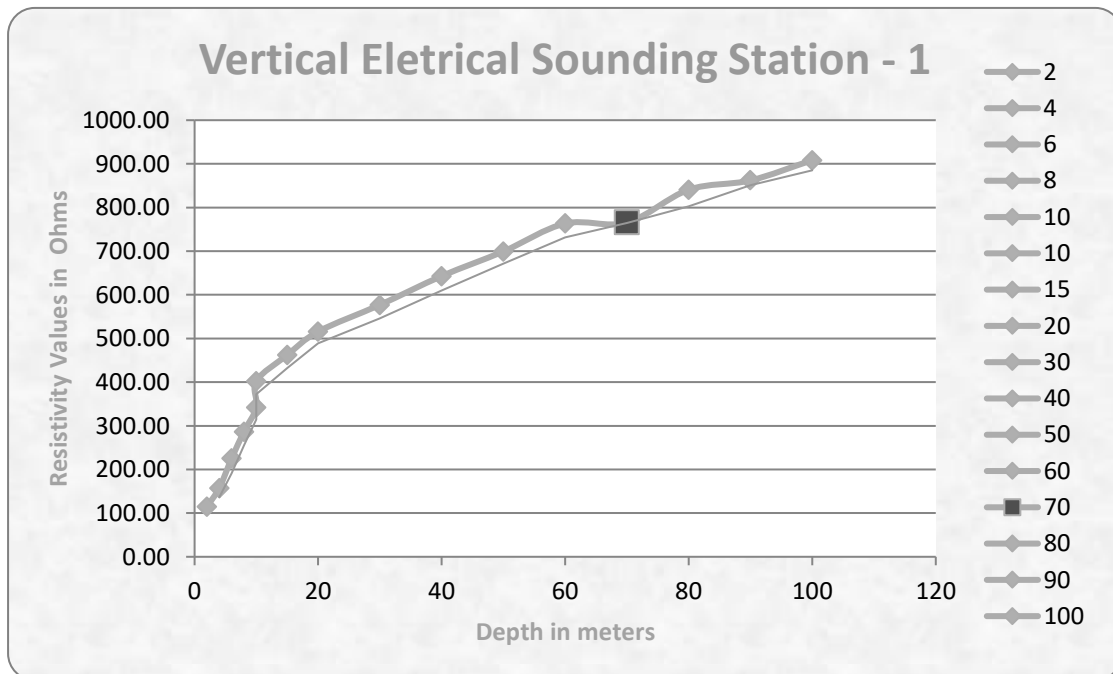
When carrying out a resistivity sounding, current is led into the ground by means of two electrodes. With two other electrodes, situated near the center of the array, the potential field generated by the current is measured. From the observations of the current strength and the potential difference, and taking into account the electrode separations, the ground resistivity can be determined. During a resistivity sounding, the separation between the electrodes is step-wise increased (known as a Schlumberger Array), thus causing the flow of current to penetrate greater depths. When plotting the observed resistivity values against depth on double logarithmic paper, a resistivity graph is formed, which depicts the variation of resistivity with depth. This graph can be interpreted with the aid of a computer, and the actual resistivity layering of the subsoil is obtained. The depths and resistivity values provide the hydro geologist with information on the geological layering and thus the occurrence of groundwater.

### Vertical Electrical Sounding Method



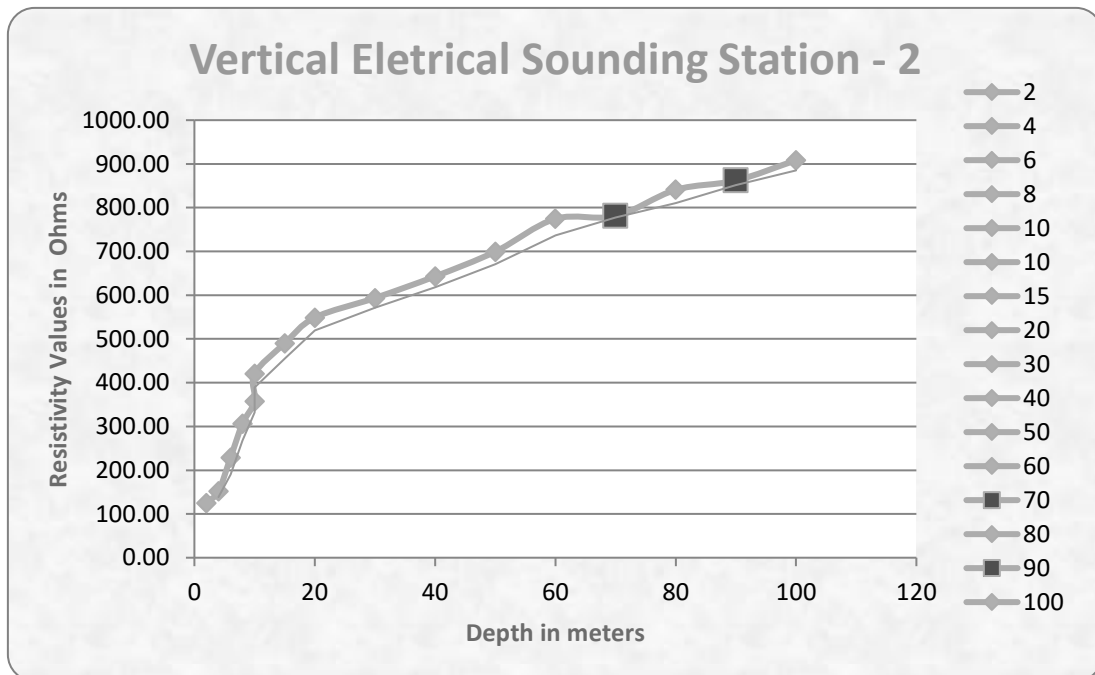
## Geophysical Data's and Graphs Fracture Zone Levels

Vertical Electrical Sounding Station - 1					
GPS Coordinates - 10°52'30.39"N 77°31'10.08"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical Factor (G)	Resistance Value in Ohms [R]	Apparent Resistance in Ohms
1	2	1	4.71	24.36	114.74
2	4	1	23.55	6.70	157.79
3	6	1	54.95	4.10	225.30
4	8	1	98.91	2.90	286.84
5	10	1	155.45	2.20	341.99
6	10	5	23.55	17.10	402.71
7	15	5	62.80	7.36	462.21
8	20	5	117.75	4.38	515.75
9	30	5	274.75	2.10	576.98
10	40	5	494.55	1.30	642.92
11	50	5	777.15	0.90	699.44
12	60	5	1122.55	0.68	763.33
13	70	5	1530.75	0.50	765.38
14	80	5	2001.75	0.42	840.74
15	90	5	2535.55	0.34	862.09
16	100	5	3132.15	0.29	908.32



Based on the vertical electrical sounding graphs purple color is fracture zone.

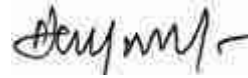
Vertical Electrical Sounding Station - 2					
GPS Coordinates - 10°52'29.32"N 77°31'15.68"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical Factor (G)	Resistance Value in Ohms [R]	Apparent Resistance in Ohms
1	2	1	4.71	26.53	124.96
2	4	1	23.55	6.46	152.13
3	6	1	54.95	4.16	228.59
4	8	1	98.91	3.10	306.62
5	10	1	155.45	2.30	357.54
6	10	5	23.55	17.86	420.60
7	15	5	62.80	7.80	489.84
8	20	5	117.75	4.66	548.72
9	30	5	274.75	2.16	593.46
10	40	5	494.55	1.30	642.92
11	50	5	777.15	0.90	699.44
12	60	5	1122.55	0.69	774.56
13	70	5	1530.75	0.51	780.68
14	80	5	2001.75	0.42	840.74
15	90	5	2535.55	0.34	862.09
16	100	5	3132.15	0.29	908.32



● This vertical electrical sounding graphs purple color is fracture zone.

### **3. Conclusion –**

Based on the available information and the geophysical investigations it is concluded that the project area is considered to have medium groundwater potential. Productive aquifers are expected at depth of 75m to 80m where minor fractures are observed and shallow aquifers are expected above 58m-62m BGL. The ultimate pit limit as per the approved mining plan depth is 37m (2m Gravel + 35m Rough Stone) below ground level which will have no impact on the Ground Water.



**Dr. P. Thangaraju, M.Sc., Ph.D.,**

Govt. Approved Hydro Geologist

M/s. Geo Exploration and Mining Solutions,

Regd. Office: No. 17, Advaita Ashram Road,

Alagapuram, Salem – 636 004, Tamil Nadu

Mobile: +91 - 94433 56539

E-Mail: [infogeoexploration@gmail.com](mailto:infogeoexploration@gmail.com)

அனுப்புநர்  
இரா.குமரேசன், எம்.ஏ.எம்.பில், எம்.எட்.,  
வருவாய் கோட்டாட்சியர்,  
தாராபுரம்.

பெறுநர்  
மாவட்ட ஆட்சியர்,  
திருப்பூர்.

நக. எண். 896 /2023/இ

நாள்: 16.05.2023

ஐயா,

பொருள் கனிமம் - காங்கயம் வட்டம் - முதலிபாளையம்  
கிராமம் புல எண். 986/2A1-ல் 3.64.53 ஹெ -  
யட்டா நிலப்பரப்பில் சாதாரண கற்கள்/கிராவல்  
மண் வெட்டி எடுக்க 10 வருடங்களுக்கு குவாரி  
குத்தகை உரிமம் கோரி திரு.ஆர்கார்த்திக்,  
த/பெராஜேந்திரன் என்பவர் மனு செய்துள்ளது.  
விசாரணை அறிக்கை சமர்ப்பித்தல் - தொடர்பாக  
பார்வை 1 துணை இயக்குநர் புவியியல் மற்றும் கனிமம்,  
திருப்பூர் அவர்களின் கடிதம்  
நக.எண்.110/2023/கனிமம், நாள் 21.03.2023  
2 வட்டாட்சியர்,காங்கயம்-ன் கடிதம், நக.எண்.  
14665/2023/அ2, நாள் : 09.05.2023

\*\*\*\*\*

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், ஊதியூர் உள்வட்டம், முதலிபாளையம்  
கிராமம், ரீ.ச.எண்.984/2A1- நெ.காலையில் பு.ஹெக். 3.64.53 பரப்பளவு கொண்ட பட்டா பூமியில்  
சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம்  
வழங்கக் கோரி திரு.ஆர்கார்த்திக், த/பெ. ராஜேந்திரன், 72 காவிலிபாளையம் புதூர்,  
வேலம்பாளையம், திருப்பூர் என்பவர்: மனு செய்துள்ளது தொடர்பாக புலத்தணிக்கை மற்றும்  
விசாரணை செய்து எனதறிக்கையினை பின்வருமாறு சமர்ப்பித்துக் கொள்கிறேன்.

காங்கயம் வட்டம், முதலிபாளையம் கிராமம், ரீ.ச.எண்.984/2A1- நெ. காலையில்  
பு.ஹெக். 3.64.53 விஸ்தீரணமுள்ள பூமியானது காங்கயம் சார்பதிவக கிரைய பத்திர எண். 4471/2018  
நாள். 19.09.2018-ன்படி பாலசுப்பிரமணியம் மகன் மகேஸ்குமார் என்பவருக்கு பாத்தியப்பட்டு,  
கிராமக் கணக்குகளில் பட்டா எண். 1035-ல் மகேஸ்குமார் பெயரில் தனிப்பட்டவாக  
தாக்கலாகியுள்ளது. நில உரிமையாளர் திரு. மகேஸ்குமார் என்பவரிடம் மனுதாரர் திருமதி. ஆர்கார்த்திக்  
த/பெராஜேந்திரன் என்பவர் 10 வருட காலத்திற்கு குவாரிப்பணி செய்து கொள்ள நோட்டரி பப்ளிக் முன்பு  
எடுத்த உறுதிமொழி ஆவணம் சமர்ப்பித்துள்ளார். இதனுடன் மேற்படி புலங்களில் குவாரிப்பணி  
செய்து கொள்ள தங்களுக்கு ஆட்சேபணையில்லை என நில உரிமையாளர் அளித்துள்ள  
உறுதிமொழிப் ஆவணம் (சம்மதக் கடிதம்) சமர்ப்பிக்கப்பட்டுள்ளது.

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Karthik

மேற்படி குத்தகை கோரும் புலத்தைச் சுற்றி எல்லைகள் வரையறுக்கப்பட்டு எல்லைக்கற்கள் நடப்பட்டுள்ளன. மேற்படி புலங்களின் வழியாக உயர் மற்றும் தாழ்வழுத்த மின் கம்பித் தொடர் ஏதும் செல்லவில்லை. மேற்படி புலத்தில் விலையுயர்ந்த மரங்கள் ஏதும் இல்லை. புல விசாரணையின் போது பொதுமக்கள் எவரும் ஆட்சேபணை செய்யவில்லை. மேலும் அரசு நடவடிக்கைகளான நில ஆர்ஜிதம், பூமிதானம், நில உச்சவரம்பு, நிலமெடுப்பு ஆகிய நடவடிக்கைகள் ஏதும் மேற்படி புலத்தின் மீது இல்லை. மேலும் அனுமதி வழங்கவுள்ள புலத்திலிருந்து 300 மீ சுற்றளவில் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்புகள், மயானம், கோவில், புராதான சின்னங்கள் மற்றும் வனக்காடுகள் ஏதுமில்லை என்பது புலத்தணிக்கையில் தெரியவருகிறது.

கிராமம் முது  
புல எண்.

மேற்படி பூமிகளில் சாதாரண கற்கள் / கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரியதன் பொருட்டு சீனியரேஜ் தொகை ரூ.1500/- பாரத ஸ்டேட் வங்கி சலான் எண். 20230320003876, நாள். 20.03.2023-ன்படி செலுத்தியுள்ளனர். மனுதாரர் திரு.ஆர்கார்த்திக், த/பெராஜேந்திரன் என்பவருக்கு சாதாரண கற்கள் / கிராவல் மண் வெட்டியெடுக்க அனுமதி வழங்குவது தொடர்பாக முதலிபாளையம் கிராமத்தில் 13.04.2023 அன்று 'அ1' விளம்பரம் செய்யப்பட்டுள்ளது. நாளது வரை ஆட்சேபணை ஏதும் வரப்பெறவில்லை. மனுதாரர் மேற்படி பூமியில் சாதாரண கற்கள் வெட்டியெடுக்க தங்களுக்கு, எவ்வித ஆட்சேபணையும் இல்லை என்று பொதுமக்கள் அளித்த வாக்குமூலம் பெறப்பட்டு இணைக்கப்பட்டுள்ளது.

மனுதாரர் திருகார்த்திக், த/பெராஜேந்திரன் என்பவர் அரசுக்கு செலுத்து வேண்டிய வருமானவரி, கனிம வரி மற்றும் இதர வரியினங்கள் எதுவும் நிலுவை இல்லை என தெரிவித்து நோட்டரி அபிடவிட் வாக்குமூலம் அளித்துள்ளார். மேலும் மனுதாரருக்கு மேற்படி குத்தகை உரிமம் வழங்கும் பட்சத்தில் தமிழ்நாடு சிறுவகை கனிமச்சலுகை விதிகள் 1959-ல் 19(1)-ன்படி கட்டுப்பட்டு நடப்பதாக வாக்குமூலம் அளித்துள்ளார்.

எனவே, மனுதாரர் திருகார்த்தி, த/பெராஜேந்திரன் என்பவருக்கு காங்கயம் வட்டம், முதலிபாளையம் கிராமம், ரீ.ச.எண்.984/2யு1 நெ.காலையில் பு.ஹெக்.3.64.53 பரப்பளவு கொண்ட பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க பரிந்துரை செய்யலாம் என்பதையும், இத்துடன் இத்துடன் காங்கயம் வட்டாட்சியர் -ன் கடிதம் மற்றும் தொடர்புடைய கிராம ஆவணங்களை இணைத்து அனுப்பியுள்ளேன் என்பதையும் பணிவுடன் தெரிவித்துக் கொள்கிறேன்.  
இணைப்பு மேற்கண்டவாறு.

தங்கள் உண்மையுள்ள,

வருவாய் கோட்டாட்சியர்

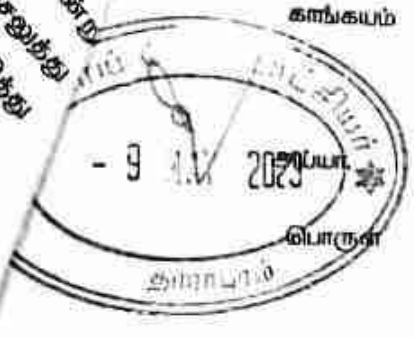
தாராபுரம்.

9/10/23

செலுத்த  
செலுத்த  
செலுத்த

அனுப்புநர்  
திருமதி. வே.சு.புவனேஸ்வரி,  
வருவாய் வட்டாட்சியர்,  
காங்கயம்

பெறுநர்  
வருவாய் கோட்டாட்சியர்,  
தாராபுரம்



ந.க.14665/2023/அ2  
9897  
2686  
நாள்.09-05-2023

கனிமம் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - முதலிபாளையம் கிராமம் புல எண். 986/2A1-ல் 3.64.53 ஹெக்டேர் பட்டா நிலப்பரப்பில் சாதாரண கற்கள்/கிராவல் மண் வெட்டி எடுக்க 10 வருடங்களுக்கு குவாரி குத்தகை உரிமம் கோரி திரு.ஆர். கார்த்திக், த/பெ.ராஜேந்திரன் என்பவர் மனு செய்துள்ளது- விசாரணை அறிக்கை கோருதல் - தொடர்பாக

- பார்வை 1 துணை இயக்குநர் புவியியல் மற்றும் கனிமம், திருப்பூர் அவர்களின் கடிதம் ந.க.எண்.110/2023/கனிமம், நாள் 21.03.2023
- 2 வருவாய் கோட்டாட்சியர் அலுவலக ந.க.1676/2023/இ, நாள் 03.04.2023
- 3 ஊதியூர் உள்வட்ட நிலவருவாய் ஆய்வாளர் அவர்களின் அறிக்கை நாள் 02.05.2023

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திருப்பூர் மாவட்டம், காங்கயம் வட்டம், ஊதியூர் உள்வட்டம், முதலிபாளையம் கிராமம், ரீ.ச.எண்.984/2A1- நெ.காலையில் பு.ஹெக். 3.64.53 பரப்பளவு கொண்ட பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக் கோரி திரு.ஆர்.கார்த்திக், த/பெ. ராஜேந்திரன், 72 காவிலிபாளையம் புதூர், வேலம்பாளையம், திருப்பூர் என்பவர் மனு செய்துள்ளது தொடர்பாக புலத்தணிக்கை மற்றும் விசாரணை செய்து எனதறிக்கையினை பின்வருமாறு சமர்ப்பித்துக் கொள்கிறேன்.

காங்கயம் வட்டம், முதலிபாளையம் கிராமம், ரீ.ச.எண்.984/2A1- நெ. காலையில் பு.ஹெக். 3.64.53 விஸ்தீரணமுள்ள பூமியானது காங்கயம் சார்பதிவக கிராம பத்திர எண். 4471/2018 நாள். 19.09.2018-ன்படி பாலசுப்பிரமணியம் மகன் மகேஸ்குமார் என்பவருக்கு பாத்தியப்பட்டு, கிராமக் கணக்குகளில் பட்டா எண். 1035-ல் மகேஸ்குமார் பெயரில் தனிப்பட்டவாக தடக்கலாகியுள்ளது. நில உரிமையாளர் திரு.மகேஷ்குமார் என்பவரிடம் 10 வருட காலத்திற்கு குவாரிப்பணி செய்து கொள்ள ஒப்பந்தம் செய்து கொண்ட குத்தகை பத்திரம் மனுதாரரால் சமர்ப்பிக்கப்பட்டுள்ளது. இதனுடன் மேற்படி புலங்களில் குவாரிப்பணி செய்து கொள்ள தங்களுக்கு ஆட்சேபணையில்லை என நில உரிமையாளர் அளித்துள்ள உறுதிமொழிப் பத்திரமும்(சம்மதக் கடிதம்) சமர்ப்பிக்கப்பட்டுள்ளது.

மேற்படி குத்தகை கோரும் புலத்தைச் சுற்றி எல்லைகள் வரையறுக்கப்பட்டு, எல்லைக்கற்கள் நடப்பட்டுள்ளன. மேற்படி புலங்களின் வறியாக உபர் மற்றும் தாழ்வழுத்த மின் கம்பித் தொடர் ஏதும் செல்லவில்லை. மேற்படி புலத்தில் விசையுயர்ந்த மரங்கள் ஏதும் இல்லை. புல விசாரணையின் போது பொதுமக்கள் எவரும் ஆட்சேபணை செய்யவில்லை. மேலும் அரசு நடவடிக்கைகளான நில ஆர்ஜீதம், பூமிதானம், நில உச்சவரம்பு, நிலமெடுப்பு ஆகிய நடவடிக்கைகள் ஏதும் மேற்படி புலத்தின் வீது இல்லை. மேலும் அனுமதி வழங்கவுள்ள புலத்திலிருந்து 300 மீ சுற்றளவில் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்புகள், மயானம், கோவில், புராதான சின்னங்கள் மற்றும் வனக்காடுகள் ஏதுமில்லை என்பது புலத்தணிக்கையில் தெரியவருகிறது.

மேற்படி பூமிகளில் சாதாரண கற்கள் / கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரியதன் பொருட்டு சீனியரேஜ் தொகை ரூ.1500/- பராத ஸ்டேட்-10ஆங்கி சலான் எண். 20230320003876, நாள்.

20.03.2023-ன்படி செலுத்தியுள்ளனர். மனுதாரர் திரு.ஆர்.கார்த்திக், த/பெ.ராஜேந்திரன் என்பவருக்கு சாதாரண கற்கள் / கிராவல் மண் வெட்டியெடுக்க அனுமதி வழங்குவது தொடர்பாக முதலிபாளையம் கிராமத்தில் 13.04.2023 அன்று 'அ1' விளம்பரம் செய்யப்பட்டுள்ளது. நாளது வரை ஆட்சேபணை ஏதும் வரப்பெறவில்லை. மனுதாரர் மேற்படி பூமியில் சாதாரண கற்கள் வெட்டியெடுக்க தங்களுக்கு, எவ்வித ஆட்சேபணையும் இல்லை என்று பொதுமக்கள் அளித்த வாக்குமூலம் பெறப்பட்டு இணைக்கப்பட்டுள்ளது.

மனுதாரர் திரு.கார்த்திக், த/பெ.ராஜேந்திரன் என்பவர் அரசுக்கு செலுத்து வேண்டிய வருமானவரி, கனிம வரி மற்றும் இதர வரியினங்கள் எதுவும் நிலுவை இல்லை என தெரிவித்து நோட்டரி அபிடவிட் வாக்குமூலம் அளித்துள்ளார். மேலும் மனுதாரருக்கு மேற்படி குத்தகை உரிமம் வழங்கும் பட்சத்தில் தமிழ்நாடு சிறுவகை கனிமச்சலுகை விதிகள் 1959-ல் 19(1)-ன்படி கட்டுப்பட்டு நடப்பதாக வாக்குமூலம் அளித்துள்ளார்.

எனவே, மனுதாரர் திரு.கார்த்தி, த/பெ.ராஜேந்திரன் என்பவருக்கு காங்கயம் வட்டம், முதலிபாளையம் கிராமம், ரீ.ச.எண்.984/2யு1 நெ.காலையில் பு.ஹெக்.3.64.53 பரப்பளவு கொண்ட பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க பரிந்துரை செய்யலாம் என்பதையும், இத்துடன் கிராம நிர்வாக அலுவலர் வாக்குமூலம், அ1 விளம்பரம், மனுதாரர் வாக்குமூலம், பொதுமக்கள் வாக்குமூலம் மற்றும் தொடர்புடைய கிராம ஆவணங்களை இணைத்து அனுப்பியுள்ளேன் என்பதையும் பணிவுடன் தெரிவித்துக் கொள்கிறேன்.

தங்கள் உண்மையுள்ள,

BHUVANESHWARI

TAHSILDAR

நகல்.

திருப்பூர் மாவட்ட ஆட்சியர் அவர்களுக்கு பணிந்து சமர்ப்பிக்கப்படுகிறது.



நிலவருவாய் ஆய்வாளர் அலுவலகம்  
ஊதியூர்.

ப.மு.73/2023

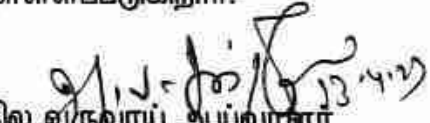
நாள்: 13.04.2023.

### அ1 விளம்பரம்

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், ரீ.ச.எண்.984/2A1 நெ.காலையில் பு.ஹெக்.3.64.53 பரப்பளவு கொண்ட பூமியில் திரு.ஆர்.கார்த்திக், த/பெ. ராஜேந்திரன் என்பவர் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்குவது தொடர்பாக பொதுமக்கள் எவருக்கேனும் ஆட்சேபனை ஏதுமிருப்பின் 15 தினங்களுக்குள் ஆட்சேபனையை ஊதியூர் நிலவருவாய் ஆய்வாளருக்கோ, காங்கயம் வட்டாட்சியர் அவர்களுக்கோ நேரிலோ, எழுத்துப்பூர்வமாகவோ தெரிவிக்குமாறும், தவறும் பட்சத்தில் ஆட்சேபனை ஏதுமில்லை எனக்கருதி குத்தகை உரிமம் வழங்கிட நடவடிக்கை மேற்கொள்ளப்படும் என இதன் மூலம் தெரிவித்துக் கொள்ளப்படுகிறது.

  
நிலவருவாய் ஆய்வாளர்,  
ஊதியூர் உள்வட்டம்,  
காங்கயம் வட்டம்.

முதலிபாளையம் கிராமத்தில் அ1 விளம்பரம் செய்து பொதுமக்கள் கையொப்பம் பெற்ற மீள சமர்ப்பிக்குமாறு முதலிபாளையம் கிராம நிர்வாக அலுவலர் கேட்டுக் கொள்ளப்படுகிறார்.

  
நிலவருவாய் ஆய்வாளர்,  
ஊதியூர் உள்வட்டம்,  
காங்கயம் வட்டம்.

பெறுநர்

கிராம நிர்வாக அலுவலர்,  
முதலிபாளையம்.

1 S. சூத்துசாமி

2 D. Ramli

3 பாரதி

4 N. Bharathi



அனுப்புநர்

திரு.நா.சுரேஷ்குமார்,  
வட்டார வளர்ச்சி அலுவலர்,  
(வட்டார ஊராட்சி),  
குண்டடம் 638 702.

பெறுநர்

துணை இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை  
திருப்பூர்.

ந.க.எண்: 4372/2022/அ2

நாள் : 23.01.2024


அய்யா,

பொருள் : கனிமங்களும் சுரங்கங்களும் - சிறுகனிமம் - சாதாரண கற்கள் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - முதலிபாளையம் கிராமம் - புல எண்கள். 984/2A1-ல் 3.64.53 ஹெக்டர் பட்டா நிலப்பரப்பில் சாதாரண கற்கள்/கிராவல் மண் மண் வெட்டி எடுக்க குவாரி குத்தகை உரிமம் கோரி ஆர்.கார்த்திக், த/பெ ராஜேந்திரன், 72, காவிபாளையம் புதூர், வேலம்பாளையம், திருப்பூர் என்பவர் மனு செய்துள்ளதற்கு சான்று அறிக்கை கோரியது - அறிக்கை அனுப்புதல் - தொடர்பாக

பார்வை : துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, திருப்பூர் அவர்களின் ந.க.எண். 110/2023/கனிமம் நாள் 08.01.2024

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பார்வையில் காணும் கடிதத்தில் தெரிவித்துள்ளவாறு திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண்கள் 984/2A1-ல் 3.64.53 ஹெக்டர் பரப்பளவு உள்ள பட்டா பூமியிலிருந்து 300 மீட்டர் சுற்றளவிற்குள் அங்கீகரிக்கப்பட்ட குடியிருப்பு மனைகள் (Layout) மற்றும் அங்கீகரிக்கப்பட்ட கட்டுமானங்கள் ஏதுமில்லை என்ற விபரத்தை பணிவுடன் தெரிவித்துக்கொள்கிறேன்.

  
வட்டார வளர்ச்சி அலுவலர் (வ.ஊ)  
குண்டடம்

௨௨௫  
23.1.24

அறிவிப்பு:

8 ஆண்டுகள்  
காலமாக அகிய  
அந்த நிலத்தில்  
கட்டிடம் கட்டவேண்டும்

N. கார்த்திகேயன்  
எழுப்பினார்  
அந்த நிலத்தை கட்டவேண்டும்  
(6.5)  
கட்டவேண்டும்

அறிவிப்பு:-

8 ஆண்டுகள் காலமாக  
கட்டிடம் கட்டவேண்டும்  
அறிவிப்பு.

கட்டிடம் கட்டவேண்டும்

அறிவிப்பு: கட்டிடம் கட்டவேண்டும்

அந்த நிலத்தை கட்டவேண்டும் அந்த நிலத்தை

(Compound Wall) அமைக்க 55 மீட்டர்கள்  
என்று.

அமைக்க. தற்போது கட்டிடம் கட்டவேண்டும்  
அல்லது கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும்

-கட்டிடம் கட்டவேண்டும் 40 மீட்டர் 984/241

பாத அமைக்க அல்லது கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும்

அமைக்க கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும்  
கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும் [Compound Wall]

கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும்

கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும்

கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும்

கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும்

கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும் கட்டிடம் கட்டவேண்டும்

திகதி: 15/02/2024

15/02/24  
கார்த்திகேயன்  
அரசுப் பள்ளி மாணவர் விடுதி (பி.ந)  
கார்த்திகேயன்

15/2/24  
தலைமை ஆசிரியர்  
அ. ச. நகுலசெல்வம் பள்ளி,  
கார்த்திகேயன்-638703,  
திருப்பூர் (மாவட்டம்)

Findings

தலைநி கார்ப்புள்ளி, கார்ப்புள்ளி அல்லி,  
44 கார்ப்புள்ளி கார்ப்புள்ளி 400 மணி 984/2A1,  
மேலும் 4.9223 3.64.53 மணி அல்லி மணி 1035  
கார்ப்புள்ளி கார்ப்புள்ளி கார்ப்புள்ளி கார்ப்புள்ளி கார்ப்புள்ளி.  
கார்ப்புள்ளி 400 மணி 984/2A1, 4.9223 3.64.53 மணி  
கார்ப்புள்ளி கார்ப்புள்ளி 300 மணி கார்ப்புள்ளி கார்ப்புள்ளி,  
கார்ப்புள்ளி, கார்ப்புள்ளி கார்ப்புள்ளி கார்ப்புள்ளி கார்ப்புள்ளி  
கார்ப்புள்ளி கார்ப்புள்ளி கார்ப்புள்ளி.

  
19/02/2024  
கார்ப்புள்ளி கார்ப்புள்ளி கார்ப்புள்ளி  
கார்ப்புள்ளி கார்ப்புள்ளி கார்ப்புள்ளி  
கார்ப்புள்ளி கார்ப்புள்ளி கார்ப்புள்ளி

**TOPOGRAPHICAL VIEW OF MUDALIPALAYAM**  
**ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA**




Name of the Applicant : **Thiru. R. Karthick,**  
S/o. Rajendran,  
Address : No. 72, Kavilipalayampudhur,  
Velampalayam,  
Tiruppur District,  
Tamil Nadu – 641 652.  
Mobile No. : 98430 17407 and 98654 21654.

**Location:**

S.F.No. : 984/2A1 (Part)  
Extent : 1.61.95Ha  
Village : Mudalipalayam  
Taluk : Kangayam  
District : Tiruppur

Signature of the applicant

  
(R. Karthick)

  
சிறுமது நடுவிலை அலுவலர்  
44, முதுவிலை அலுவலர் சிறுமது  
(Village Administrative Officer)  
சிறுமது அலுவலர்  
Attestation



# SRI ANJANEYA EXPLOSIVES

EXPLOSIVES BLASTING CONTRACTORS

LICENCE No : E/SC/TN/22/200 (E10559)

Prof : A. THANGARAJ

C/o. Raja Medicals, Main Road,  
Koduvai Post, Tirupur District.

Phone : 0421-2312610

Mobile : 98422 76627

Date... 13/02/2024

To

Thiru.R.KARTHIK S/o P.Rajendran,

72- Kavilipalayampudur,

Velampalayam,

Tirupur District.

Respected Sir,

Sub:- Regarding blasting work using Explosives in your proposed quarry.

We are having explosives licence No. in Form 22 holding DOC No: E10559, situated magazine in S.F.No:1355/1 Nilali village, Kangayam Taluk, Tirupur Dist. Our office functioning at RAJA COMPLEX , 4/356-Velliyampalayam, Koduvai Post, Tirupur South Taluk, Tirupur District.

We are having two Explosive vans for transporting Detonators and Explosives separately from our magazine to work sites and we have well experienced and licenced blasters and shot firers for safety blasting works for the last FIVE Years without any untoward incidents.

We are willing to undertake blasting work on contract basis at Tirupur District, Kangayam Taluk, Mudhalipalayam Village – over an extent of patta lands in S.F.No.984/2A1(Part).

Thanking you Sir,

For Sri Anjaneya Explosives  
For SRI ANJANEYA EXPLOSIVES & CO

  
Authorized Person  
A.Thangaraj

(Authorized Signatory)



भारत सरकार | Government of India

व्यक्ति और उद्योग मंत्रालय | Ministry of Commerce & Industry

पेट्रोलियम तथा विस्फोटक सुरक्षा संगठन (पैसो) | Petroleum & Explosives Safety Organisation (PESO)

पूर्व नाम, विस्फोटक विभाग | Formerly- Department of Explosives

A और D - विंग, ब्लॉक 1-8, दूसरा तल, शास्त्री भवन | A & D- Wing, Block 1-8, IIrd Floor, Shastri Bhavan

26 हड्डोडस रोड, नुंगम्बक्कम चेन्नै | 26 Haddous Road, Nungambakkam Chennai 600006

फोन (Phone):- 28281023 | फैक्स (Fax):- 28284848

ई-मेल Email: jcc@chemennai@explosives.gov.in

संख्या (No.): E/SC/TN/22/200(E10559)

दिनांक (Date): 08/01/2024

सेवा में | To,

Sri ANJANEYA EXPLOSIVES & CO.  
MAFN ROAD, KODUVAI-post, Town-Village - KODUVAI  
District-THIRUPUR, State-Tamil Nadu, Pincode - 638666

विषय: Survey No(s).1355/1, ग्राम NELALI,KANGAYAM तालुक, जिला THIRUPUR, राज्य Tamil Nadu में विस्फोटक के मैगजीन में उपयोग के लिए कब्जा हेतु विस्फोटक नियम, 2008 के अंतर्गत LE-3 में जारी अनुज्ञप्ति सं E/SC/TN/22/200(E10559) के नवीनीकरण संदर्भ में।

Subject: Possession for Use of of Explosives from magazine situated at Survey No(s).1355/1, NELALI,KANGAYAM taluk, Dist. THIRUPUR, Tamil Nadu -Licence No.: E/SC/TN/22/200(E10559) granted in Form LE-3 of Explosives Rules, 2008 - Renewal regarding

महोदय | Sir,

आपका उपर्युक्त विषय पर पत्र संख्या 104866 दिनांक 08/01/2024 का संदर्भ ग्रहण करें। विस्फोटक नियम, 2008 के अंतर्गत प्ररूप LE-3 में जारी अनुज्ञप्ति दिनांक 31/3/2029 तक नवीनीकृत कर इस पत्र के साथ भेजी जा रही है।

Reference to your letter No.: 104866 dated: 08/01/2024, the subject licence duly renewed upto 31/3/2029 and issued in Form LE-3 of Explosives Rules, 2008 is forwarded herewith.

अनुज्ञप्ति के आगामी नवीकरण हेतु कृपया निम्नलिखित दस्तावेज दिनांक 31/03/ 2029 से पहले इस कार्यालय को भेजे जाएं।

For further renewal of licence, please submit the following documents so as to reach this office on or before 31/3/2029.

- प्ररूप आरई-1 में विधिवत पूर्ण एवं हस्ताक्षरित आवेदन।  
Application in Form RE-1 duly filled in and signed.
- एक से पाँच वर्ष के अनुज्ञप्ति शुल्को का, विस्फोटक नियम, 2008 के तहत ऑनलाइन आवेदन पोर्टल पर उपलब्ध ई-भुगतान सुविधा के माध्यम से लाइसेंस शुल्क ऑनलाइन जमा किया जाना है।  
Licence fees renewable for one to five years, to be submitted online through e-payment facility available on online application portal under the Explosives Rules, 2008.
- अनुमोदित प्लान के साथ मूल अनुज्ञप्ति।  
Original licence with approved plan.
- कृपया इस संबंध में विस्फोटक नियम, 2008 के नियम 112 का भी संदर्भ ग्रहण करें।  
In this connection, please also refer to Rule 112 of Explosives Rules, 2008.
- विस्फोटकों के क्रय हेतु आरई-1 में मांगपत्र (इंडेंट) आपूर्तिकर्ता को दिया जाए और उसी का एक प्रति इस कार्यालय को भेजी जाए (आतिशबाजी गोदाम के लिए लागू नहीं)।  
Indent for purchase of explosives shall be placed in RE-1 with the supplier and copy of the same shall be sent to this office.(Not applicable for fireworks store house)
- कृपया विस्फोटकों की त्रैमासिक विवरणी हर तिमाही के अंत में आरई-7 में प्रस्तुत की जाए। विवरणी इस कार्यालय के कार्यालय में आगामी तिमाही के 10 तारीख से पहले पहुंच जानी चाहिए (आतिशबाजी गोदाम के लिए लागू नहीं)। Please submit quarterly returns of explosives in RE-7 at the end of every quarter so as to reach this office by 10th of the succeeding quarter (Not applicable for fireworks store house)
- सभी ब्लास्टिंग ऑपरेशन एक सक्षम द्वारा की जाएगी जो उपरोक्त नियमों के तहत एक वैध शॉट फायर प्रमाणपत्र धारक हो। हालांकि, खान अधिनियम 1952 के अधीन आने वाले खानों में ब्लास्टिंग ऑपरेशन करने वाले ब्लास्टर की योग्यता उसी अधिनियम से निर्धारित हो।  
All blasting operations shall be carried out by a competent person holding a valid shot firer's permit granted under above rules. However, blasting operations in mines coming under the purview of the Mines Act 1952, the blaster shall have qualifications prescribed in the regulations framed under the said Act.

भवदीय | Your's faithfully

(डा.टी.एल.थनुलिंगम | Dr. T. L. THANULINGAM)

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives

दक्षिणांचल, चेन्नै | South Circle, Chennai

प्रतिहिपि प्रेषित | Copy Forwarded to:

1. जिला मजिस्ट्रेट (District Magistrate), THIRUPUR (Tamil Nadu)- सूचना के लिए (for information.)

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosive

दक्षिणांचल, चेन्नै | South Circle, Chennai

(अधिक जानकारी जैसे आवेदन की स्थिति, शुल्क आदि के लिए हमारी वेबसाइट <http://peso.gov.in> देखें।)

(For more information regarding status, fees and other details please visit our website <http://peso.gov.in>)

**Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.**



अनुज्ञापि प्ररूप एल. ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (घ) देखिए।)  
(See article 3(a) to (d) of Part 1 of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1,2,3,4,5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रखने के लिए अनुज्ञापि  
Licence to possess : (c) for use,explosives of class 1, 2,3,4,5,6 or 7 in a magazine

ज्ञापि सं. (Licence No.) : E/SC/TN/22/200(E10559)

क फीस रूपए (Annual Fee Rs): 5600/-

licence is hereby granted to

ri ANJANEYA EXPLOSIVES & CO. (अधिभोगी / Occupier : Shri A. Thangaraj), MAIN ROAD, KODUVAI-post, Town/Village -  
.ODUVAI, District-TIRUPUR, State-Tamil Nadu, Pincode - 638660



ने अनुज्ञापि अनुदत्त की जाती है।

नुज्ञापिधारी की प्रास्थिति | Status of licensee : Partnership Firm

नुज्ञापि निम्नलिखित प्रयोजनों के लिए विधिमान्य है।

licence is valid only for the following purpose.

नुज्ञापि विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमान्य है।

licence is valid for the following kinds and quantity of explosives: - (क) (a)

possess for use of Nitrate Mixture, Detonators, Detonating Fuse, Safety Fuse, - के उपयोग के लिए

क्र Sr. No.	नाम और विवरण Name and Description	वर्ग और प्रभाग Class & Division	उप-प्रभाग Sub-division	मात्रा किसी एक समय में Quantity at any one time
1.	Nitrate Mixture	2,0	0	1175 Kg.
2.	Detonators	6,3	0	4400 Nos.
3.	Detonating Fuse	6,2	0	5000 Mtrs
4.	Safety Fuse	6,1	0	2196 Mtrs

ब) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा (अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञापि के लिए)

Quantity of explosives to be purchased in a calendar month[applicable for licence under article 3(b) and (c)]:

निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञापि परिसर की पुष्टि होती है।

The licensed premises shall conform to the following drawing(s):

रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/200(E10559)

दिनांक (Dated) 09/12/2002

25 times  
as above.

नुज्ञापि परिसर निम्नलिखित पते पर स्थित हैं। The licensed premises are situated at following address:

urvey No(s). 1355/1, ग्राम (Town/Village): NELALI,KANGEYA Taluk

पुलिस थाना (Police Station): KODUVAI

जिला (District)

TIRUPUR

राज्य (State)

Tamil Nadu

पिनकोड (Pincode)

संख्या (Phone)

9842276627

ई. मेल (E-Mail)

फैक्स (Fax)

नुज्ञापि परिसर में निम्नलिखित सुविधाएं अंतर्निहित हैं।

The licensed premises consist of following facilities.

MAIN ROOM LOBBY AND DETONATORS( since detonating fuse also to be accounted and accommodated and accordingly the high explosives quantity is restricted to 1000kg)

नुज्ञापि समय - समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपाबंधों के अधीन रहते हुए अनुदत्त की जाती है।

The licence is granted subject to the provision of Explosives Act, 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions, Additional conditions and the following Annexures.

1. उपर्युक्त क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, सन्निरमाण संबंधी और अन्य विवरण दर्शाते हुए)।

Drawings (showing site, constructional and other details) as stated in serial No. 5 above.

2. अनुज्ञापि प्राधिकारी द्वारा हस्ता.क्षरित इस अनुज्ञापि की शर्तों और अतिरिक्त शर्तों।

Conditions and Additional Conditions of this licence signed by the licensing authority.

3. दूरी प्ररूप DE-2 | Distance Form DE-2.

ह अनुज्ञापि तारीख 31 मार्च 2004 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 2004.

ह अनुज्ञापि, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपवर्णित इस अनुज्ञापि की शर्तों का अधिकमण करने या यदि नुज्ञापि परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिसंहत की जा सकती है, जहां वह लागू हो।

This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

तारीख | The Date - 09/12/2002

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

संशोधन:

Change in Authorized Signatory/Occupier/Partners/Directors dated : 28/12/2011

Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 29/05/2012

Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 22/05/2014

Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 04/12/2014

Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 22/05/2023

नवीनीकरण के पृष्ठांकन के लिए स्थान  
Space for Endorsement of Renewal

नवीकरण की तारीख  
Date of Renewal

समाप्ति की तारीख  
Date of Expiry

अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प  
Signature of licensing authority and stamp

08/01/2024

31/03/2029

Jt. Chief Controller of Explosives, South Circle, Chennai

कानूनी चेतावनी : विस्फोटकों को गलत ढंग से चलाने या उनका दुरुपयोग विधि के अधीन गंभीर दंडित अपराध होगा।

Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

Digitally signed by Dr T. L. THANULINGAM  
Reason: Licence No. E/SC/TN/22/200  
Licence No. E/SC/TN/22/200



Other Abnormalities Nothing

7. Circulatory system:

Pulse 77 per minute

Blood Pressure 130/60 mm of Hg

Heart Sound- S1 (+)

S2 (-)

Murmur - present ✓/absent

Any other Abnormalities - NO -

8. Abdomen ;

Tenderness - NO -

Liver } Not palpable

Spleen } Not palpable

Tumour } Not palpable

Other Abnormalities - NO -

9. Nervous System:

History of fits or epilepsy - NO -

Sensory function } Normal

Motor function } Normal

Planter } Normal

Mental Health } Normal

Any other Abnormalities - NO -

10. Genito - Urinary System: Normal

11. Locomotor System } Normal

12. Skin : Normal

13. Hydrocele : Present / Absent

14. Hernia : Present / Absent

15. Any other abnormality: Nothing

16. Investigation

A. Chest Radiograph (PA view) -> within normal limit

B. Electro cardiogram (ECG) - within normal limit.

C. Urine routine

C.M. 698

Reaction :  $\rightarrow$  Normal  
Albumin :  $\rightarrow$  Normal  
Sugar :  $\rightarrow$  Normal

D. Blood Bio chemistry

i) Blood Sugar: Fasting 94 mg / Postprandial 142 mg  
ii) Blood Urea 27 mg Serum Creatinine 0.99 mg  
iii) Lipid Profile Normal

19. Any other investigation or opinion of specialist considered necessary by the Examining Authority:

None

20. Remark if any: None

21. Opinion of the Examining Authority:

- a. I consider that he / She is fit to perform his/her statutory duties in mines for a period of one year. upto 6-2-2025
- b. I consider him/her unfit to perform statutory duties in mines because of \_\_\_\_\_ (mentioned disability).
- c. He / She is suffering from \_\_\_\_\_ and is unfit to perform statutory duties in underground mines but may continue to perform statutory duties on the surface/open cast mines only.

Signature of the Examining Authority with date

*[Handwritten Signature]*  
6/2/24

Name (in Block Letter).

Dr. S. Saravana Kumar, M.B.B.S., D.M.D.  
Chief Civil Surgeon—Chief Medical Officer,  
Orthopaedic Surgeon Regd. No. 54181

Designation:

Govt. Hospital, Sankari,  
Salem DL 637 301.

Registration No.

(Seal)

Place : Sankari  
Date : 6/2/24

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



*Handwritten signature of the applicant.*

संख्या | No.: FSC/EN/30/480/1/2002

प्रमाणित किया जाता है कि श्री A GURUSAMY,  
 निम्नका जन्म, 01/01/1968 को हुआ था, जो A GURUSAMY S/O AMMASAI SHALATHIVINAYAGAPURAM KODI VAI ERODE,  
 ERODE, Tamil Nadu - 641660 के निवासी है जो, चेन्नै द्वारा तारीख को आयोजित शॉट फायर की परीक्षा तारीख को उत्तीर्ण कर चुकी है और  
 वह विस्फोटक अधिनियम, 1884 और उसके अधीन विरचित नियमों के उपबंधों के अधीन रहते हुए खान अधिनियम, 1952 की धारा 107 के अन्तर्गत  
 उल्लिखित खानों से अलग-अलग क्षेत्र में नीचे दिया उल्लिखित विस्फोटकों का उपयोग करते हुए विस्फोट प्रभावित करने के लिए प्राधिकृत है।

This is to certify that **Shri A GURUSAMY**,  
 born on 01/01/1968, resident of A GURUSAMY S/O AMMASAI SHALATHIVINAYAGAPURAM KODI VAI ERODE, ERODE, Tamil  
 Nadu - 641660 passed the shotfiring's examination held on conducted by Chennai and is authorised to conduct blasting operations as  
 mentioned below using explosives in areas other than mines coming under the purview of the Mines Act, 1952, subject to the provisions of the  
 Explosives Act, 1884 and the rules framed thereunder.

विस्फोट करने के प्राधिकृत वर्ग, प्रकार और प्रकार :  
 वर्ग: (ब), श्रेणी: सामान्य जमीन के ऊपर, जमीन के ऊपर ब्लास्टिंग उपपरेक्षण

Authorised class, category and type of blasting :  
 Class : (B), Category : General aboveground, All phases of aboveground blasting operation  
 [नियम 107 का उप-नियम (5) का स्पष्टीकरण देखें | See explanation of sub-rule (5) of rule 107]

यह प्रमाणपत्र 31/03/2004 (जारी करने की तारीख से पांच वर्ष) तक विधिमान्य होगा।  
 This certificate shall remain valid till 31/03/2004 (five years from the date of issue)

यह प्रमाणपत्र अधिनियम या उसके अधीन विरचित नियमों अथवा इस प्रमाण-पत्र की शर्तों या कोई अधिव्यवस्था करते हुए या यदि  
 अधिकार द्वारा आवेदन प्रारूप में दी गई सूचना में कोई फर्क या विचलन होता है तो निलम्बित या अनिश्चित कर दिया जाएगा।

This certificate is liable to be suspended or revoked for any violation of the Act or rules framed thereunder or the conditions of this  
 certificate or if there is any discrepancy or deviation in the information or suppression of facts furnished by the applicant in his application  
 form.

स्थान | Place: चेन्नै | Chennai  
 दिनांक | Date: 27/12/2002

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives  
 दक्षिणार्चल, चेन्नै | South Circle, Chennai

पुनर्विधिमान्यकरण के लिए पुष्टीकरण | Endorsement for revalidation

पुनर्विधिमान्यकरण की तारीख Date of Revalidation	समाप्ति की तिथि Date of Expiry	अनुमति प्राधिकारी के हस्ताक्षर Signature of licensing authority
06/07/2023	31/03/2027	<i>[Signature]</i> Jt. Chief Controller of Explosives, South Circle, Chennai

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

**Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.**

अनुज्ञप्ति प्रारूप एलई-7 (LICENSE FORM LE-7)  
(विस्फोटक नियम 2008 की अनुसूची 4 के भाग 1 का अनुच्छेद 7 देखें।)  
(See article no 7 of Part 1 of Schedule IV of Explosives Rules, 2008)

अनुज्ञप्ति : सड़क वैन में विस्फोटकों के परिवहन के लिए  
Licence to : transport explosives in a road van



अनुज्ञप्ति संख्या / Licence No. : E/SC/IN/25/745/E/1911  
आवक क्रमांक / Serial No. : 2023

1. अनुज्ञप्ति प्राप्तकर्ता जारी की जाती है  
Licence is hereby granted to :

A Thangaraj (Occupier : A. Thangaraj)  
MS, Sri Anjaneya Explosives, Raja Complex, Koduval (Post), Tiruppur,  
District-TIRUPUR, State-Tamil Nadu, Pincode-0

2. अनुज्ञप्तिधारी की प्रारिथि / Status of licensee - **Individual**  
3. सड़क वैन की विशेषताएँ / Particulars of the road van:

पंजीकरण संख्या / Registration No.	TS-42 H-4253
वाहन का मॉडल एवं मॉडल नं. / Make and model of vehicle	071 MAHINDRA AND MAHINDRA LTD
उदाहृत वजन / Unladen weight	1875 Kg(s)
उदाहृत सहित अधिकतम वजन / Maximum laden weight	3450 Kg(s)
परिवहन के लिए अनुमति विस्फोटकों की अधिकतम मात्रा / Maximum quantity of explosives permitted for transport	575 Kg(s)
इंजिन संख्या / Engine No.	GJCTM88147
चैसिस संख्या / Chassis No.	MAJZP2GKID1A11076
अन्य फीचर्स का विवरण / Description of Other fittings	Fire Extinguisher, Spunk-Arrester
वाहन के लिए अनुमति विस्फोटकों की मात्रा / Quantity of Explosives permitted to carry	575 Kg(s)

4. अनुज्ञप्त परिवार निम्नलिखित अवस्थाओं में अंतर्भूत होना चाहिए / The licensed premises shall conform to the following drawings:  
अवस्था संख्या / Drawing No. : E/SC/IN/25/745/E/1911 दिनांक / dated : 05/06/2023

5. समय समय पर यथा संशोधित विस्फोटक अधिनियम, 1884 और उसके अधीन बनाए गए विस्फोटक नियम, 2008 के उपबन्धों और शर्तों एवं निम्नलिखित अनुसूचियों के अधीन अनुज्ञप्ति प्रदान की जाती है।  
The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed thereunder and the condition and the following annexures...

(क) उपरोक्त क्रम संख्या 4 में संशोधित सड़क वैन का आरेखण / (a) Drawings of the road van as stated in serial no. 4 above.  
(ख) अनुज्ञप्त प्राधिकारी द्वारा हस्ताक्षरित शर्तें / (b) Conditions signed by the licensing authority.

6. यह अनुज्ञप्ति तारीख 31 मार्च 2018 तक विधिमान्य रहेगी / This licence shall remain valid till 31st day of March 2018

यह अनुज्ञप्ति, अधिनियम या उसके अधीन विरचित नियमों या इस अनुज्ञप्ति की शर्तों के उल्लंघन, अनुसूची 5 के भाग 4 में उल्लिखित, जहाँ भी लागू हो, या यदि अनुज्ञप्त परिवार अवस्थाओं या खसरी संलग्न उपबन्धों में दूरीयता का उल्लंघन करने के लिए नहीं पाए जाने पर निलम्बित या प्रतिबंधित की जा सकती है।  
This licence is liable to be suspended or revoked for any violation of the Act or rules framed there under or the conditions of this licence as set forth under Conditions, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and annexure attached hereto.

दिनांक / Date: 05/06/2023

संयुक्त मुख्य विस्फोटक नियंत्रक / Joint Chief Controller of Explosives  
दक्षिण क्षेत्र / South Circle, Chennai

अनुज्ञप्ति के जारीकरण हेतु प्रमाणित / Intended for the issue of licence

सर्वोत्तमता की तिथि / Date of Renewal	वैधता समाप्ति की तिथि / Date of Expiry	अनुज्ञप्त प्राधिकारी का हस्ताक्षर / Signature of licensing authority
28/02/2023	31/03/2028	J. Chief Controller of Explosives, South Circle, Chennai

वैधानिक चेतावनी : विस्फोटकों का सावधानी से प्रयोग या दुरुपयोग, विधि के अधीन गम्भीर दण्डित अपराध होगा।  
Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.

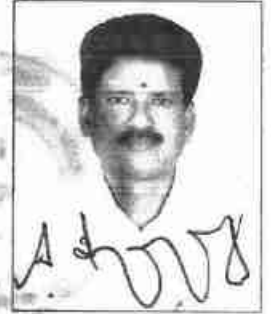
Note :- This is system generated document does not require physical signature. Applicant may take printout of their records.

Explosives (Endorsed under Rule 107) of Explosives Rules 2008  
 and the Explosives (Endorsement of Licences) Rules 2008

अनुज्ञप्ति प्रारूप एलई - 7 | LICENCE FORM I.E-7  
 (विस्फोटक नियम 2008 की अनुसूची 7 के भाग 1 का अनुच्छेद 7 देखें)  
 (See article no 7 of Part 1 of Schedule IV of Explosives Rules, 2008)

अनुज्ञप्ति : सड़क वैन में विस्फोटकों के परिवहन के लिए  
 Licence to : transport explosives in a road van

अनुज्ञप्ति संख्या / Licence No. : E/SC/TN/25/595(E56115)  
 वार्षिक फीस रूपए / Annual Fee Rs - 2500/-



1. अनुज्ञप्ति एतद्वारा जारी की जाती है  
 Licence is hereby granted to: **Sri.A.Thangaraj (Occupier : A.Thangaraj)**  
**Sri Anjaneya Explosives & Co., C/o. Raja Medicals, Koduvai (Post), Tiruppur District, Tamilnadu,**  
**District-TIRUPUR, State-Tamil Nadu, Pincode-638660**

2. अनुज्ञप्तिधारी की प्राप्ति / Status of licensee **Individual**  
 3. सड़क वैन की विशेषियाँ / Particulars of the road van:

पंजीकरण संख्या / Registration No.	TN42 C 3839
यान का मेक एवं मॉडल / Make and model of vehicle	Mahindra Mahindra Ltd
लदान रहित वजन / Unladen weight	1830 Kg(s)
लदान सहित अधिकतम वजन / Maximum laden weight	2450 Kg(s)
परिवहन के लिए अनुज्ञेय विस्फोटकों की अधिकतम मात्रा Maximum quantity of explosives permitted for transport	620 Kg(s)
इंजिन संख्या / Engine No.	GKA 1 F 39797
चैसिस संख्या / Chassis No.	MAIZP 2GKAA 1F43598
अन्य फिटिंग्स का विवरण / Description of Other Fittings	Fire extinguishers, Spark Arrestor, Battery, cutoff switch
वाहन के लिए अनुमत्य विस्फोटकों की मात्रा / Quantity of Explosives permitted to carry	620 Kg(s)

4. अनुज्ञप्त परिसर निम्नलिखित आरेखण (आरेखणों) के अनुरूप होना चाहिए / The licensed premises shall conform to the following drawing(s):  
 आरेखण संख्या / Drawing No : E/SC/TN/25/595(E56115) दिनांक / dated : 26/11/2010
5. समय समय पर यथा संशोधित विस्फोटक अधिनियम, 1884 और उसके अधीन बनाए गए विस्फोटक नियम, 2008 के उपबन्धों और शर्तों एवं निम्नलिखित अनुलग्नकों के अधीन अनुज्ञप्ति प्रदान की जाती है।  
 The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed thereunder and the conditions and the following annexures...
- (क) उपर्युक्त क्रम संख्या 4 में यथाकथित सड़क वैन का आरेखण / (a) Drawings of the road van as stated in serial no 4 above.  
 (ख) अनुज्ञापन प्राधिकारी द्वारा हस्ताक्षरित शर्तें / (b) Conditions signed by the licensing authority.
6. यह अनुज्ञप्ति तारीख 31 मार्च 2015 तक विधिमान्य रहेगी / This licence shall remain valid till 31st day of March 2015

यह अनुज्ञप्ति, अधिनियम या उसके अधीन विरचित नियमों या इस अनुज्ञप्ति की शर्तों के उल्लंघन, अनुसूची 5 के भाग 4 में सन्दर्भित, जहाँ भी लागू हो, या यदि अनुज्ञप्त परिसर आरेखण या उससे संलग्न उपाबद्धों में दर्शाए गए विवरण के अनुरूप नहीं पाए जाने पर निलम्बित या प्रतिसंहत की जा सकती है।  
 This licence is liable to be suspended or revoked for any violation of the Act or rules framed there under or the conditions of this licence as set forth under, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and annexure attached hereto.

दिनांक / Date: 26/11/2010

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives  
 दक्षिणांचल, चेन्नै | South Circle, Chennai

अनुज्ञप्ति के नवीनीकरण हेतु पत्रांकन / Endorsement for renewal of licence:

नवीनीकरण की तिथि Date of Renewal	वैधता समाप्ति की तिथि Date of Expiry	अनुज्ञापन प्राधिकारी के हस्ताक्षर Signature of licensing authority
16/03/2020	31/03/2025	A Chief Controller of Explosives, South Circle, Chennai

**वैधानिक चेतावनी : विस्फोटकों का लापरवाही से प्रयोग या दुरुपयोग, विधि के अधीन गम्भीर दण्डित अपराध होगा।**  
**Statutory Warning : Mishandling and misuse of explosives shall constitute serious criminal offence under the law.**



सत्यमेव जयते

**File No: 10834**  
**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**(Issued by the State Environment Impact Assessment**  
**Authority(SEIAA), TAMIL NADU)**

\*\*\*



Dated 07/06/2024



To,

susila  
susila  
1/241, Milk Society opposite, Kuppusamy naidu puram, Palladam, semmipalayam, TIRUPPUR,  
TAMIL NADU, 641662  
sritirupathybluemetals@gmail.com

**Subject:** Grant of Terms of Reference with public hearing under the provision of the EIA Notification 2006 as amended - regarding.

**Sir/Madam,**

This is in reference to your application for Grant of Terms of Reference with public hearing under the provision of the EIA Notification 2006-regarding in respect of project Tmt. G. Susila, Rough stone and Gravel Quarry Project at over an Extent of 1.21.46Ha of Patta land S.F.No. 986/B1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State. submitted to SEIAA vide proposal number SIA/TN/MIN/469431/2024 dated 16/05/2024.

**REFERENCE:**

1. Online proposal No. SIA/TN/MIN/469431/2024, dt: 16/04/2024.
2. Your application submitted for Terms of Reference dated: 30.04.2024.

2. The particulars of the proposal are as below :

<b>(i) TOR Identification No.</b>	TO24B0108TN5642030N
<b>(ii) File No.</b>	10834
<b>(iii) Clearance Type</b>	TOR
<b>(iv) Category</b>	B1
<b>(v) Project/Activity Included Schedule No.</b>	1(a) Mining of minerals Tmt. G. Susila, Rough stone and Gravel Quarry Project at over an Extent of 1.21.46Ha of Patta land S.F.No. 986/B1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State.
<b>(vii) Name of Project</b>	
<b>(viii) Name of Company/Organization</b>	susila



<b>(ix) Location of Project (District, State)</b>	TIRUPPUR, TAMIL NADU
<b>(x) Issuing Authority</b>	SEIAA
<b>(xii) Applicability of General Conditions</b>	no
<b>(xiii) Applicability of Specific Conditions</b>	no

3. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1(Part A and B) were submitted to SEIAA for an appraisal by the SEAC in the Ministry under the provision of EIA notification 2006 and its subsequent amendments.
4. The above-mentioned proposal has been considered by SEAC of SEIAA in the meeting held on 03/06/2024. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B)] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
5. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Terms of Reference under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
6. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEA hereby decided to grant Terms of Reference for instant proposal of M/s. susila under the provisions of EIA Notification, 2006 and as amended thereof.
7. The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.
8. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
9. This issues with the approval of the Competent Authority.
10. **The TORs with public hearing prescribed shall be valid for a period of three years from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.**

#### **Copy To**

1. The Additional Chief Secretary to Government, Environment, Climate Change and Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
3. The Chair Person, 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 - 110 003.
6. The District Collector, Tiruppur District.
7. Stock File

**Annexure 1**

#### **Specific Terms of Reference for (Mining Of Minerals)**

##### **1. Seac Conditions - Site Specific**

S. No	Terms of Reference
1.1	<p>1. The project proponent shall submit a Certified Compliance Report obtained from the office of the concerned DEE/TNPCB (or) IRO, MoEF &amp; CC, Chennai as per the MoEF&amp;CC O.M dated.08.06.2022 for the previous EC and appropriate mitigating measures for the non-compliance items, if any.</p> <p>2. For the existing quarry, the PP shall obtain a letter from the concerned AD (Mines) which shall stipulate the following information:</p> <ol style="list-style-type: none"> <li>i. Original pit dimension of the existing quarry</li> <li>ii. Quantity achieved Vs EC Approved Quantity</li> <li>iii. Balance Quantity as per Mineable Reserve calculated.</li> <li>iv. Mined out Depth as on date Vs EC Permitted depth</li> <li>v. Details of illegal/illicit mining carried out, if any</li> <li>vi. Quantity of material mined out outside the mine lease area (or) in the adjacent quarry/land.</li> <li>vii. Existing condition of Safety zone/benches</li> <li>viii. Details of any penalties levied on the PP for any violation in the quarry operation</li> </ol> <p>3. PP shall furnish a letter from AD/DD mines stating that the project will not fall under violation category.</p> <p>4. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m &amp; upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc.</p> <p>5. The Proponent shall develop greenbelt and garland drain around the boundary of the proposed quarry and the photographs indicating the same shall be shown during the EIA appraisal.</p> <p>6. The study on impact of the proposed quarrying operations on the surrounding environment which includes reserve forest, water bodies, etc.</p> <p>7. The Project Proponent shall furnish the revised EMP based on the study carried out on impact of the dust &amp; other environmental impacts due to proposed quarrying operations on the nearby agricultural lands for remaining life of the mine in the format prescribed by the SEAC considering the cluster situation.</p>

**2. Seiaa Specific Conditions:**

S. No	Terms of Reference
2.1	<p>After detailed discussions, the Authority accepted the recommendation of SEAC and decided to grant Terms of Reference (ToR) with Public Hearing based on studies, assessments and records to be produced as sought by the SEAC and SEIAA, for undertaking the Environment Impact Assessment Study and preparation of Environment Management Plan for the quantity of 94511 m<sup>3</sup> of Rough stone &amp; 4176m<sup>3</sup> of Gravel upto the depth of 42m BGL and the annual peak production of 19526 m<sup>3</sup> of Rough stone &amp; 4176 m<sup>3</sup> of Gravel as per the approved mining plan. subject to the following conditions and that recommended by SEAC &amp; SEIAA.</p> <ol style="list-style-type: none"> <li>1) The PP shall carry out the scientific studies to design the controlled blast parameters for reducing the blast-induced ground/air- vibrations and eliminating the fly rock from the blasting operations carried out in the quarry, by involving anyone of these reputed Research and Academic Institution such as CSIR-Central Institute of Mining &amp; Fuel Research / Dhanbad, NIRM/Bangalore, IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. A copy of such scientific study report shall be submitted to the SEIAA along with EIA report.</li> <li>2) The PP shall annually carry out the scientific studies to assess the hydrogeological condition of the quarry for ensuring the safety of the persons working in the mine and to determine impacts of the mining operation on the ground water conditions in the waterbodies, by involving any one of the reputed Research and Academic Institution - CSIR-Central Institute of Mining &amp; Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, University of Madras – Centre for Environmental Studies, and Anna</li> </ol>

S. No	Terms of Reference
	<p>University Chennai-Dept of Geology, CEG Campus. A copy of such scientific study report shall be submitted to the SEIAA along with EIA report.</p> <p>3) For the safety of the persons employed in the quarry, the PP shall carry out the scientific studies to assess the slope stability of the working benches and existing quarry wall by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining &amp; Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. A copy of such scientific study report shall be submitted to the SEIAA along with EIA report.</p>

### 3. Seac Standard Conditions

S. No	Terms of Reference
3.1	<ol style="list-style-type: none"> <li>1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: <ol style="list-style-type: none"> <li>(i) Original pit dimension</li> <li>(ii) Quantity achieved Vs EC Approved Quantity</li> <li>(iii) Balance Quantity as per Mineable Reserve calculated.</li> <li>(iv) Mined out Depth as on date Vs EC Permitted depth</li> <li>(v) Details of illegal/illicit mining</li> <li>(vi) Violation in the quarry during the past working.</li> <li>(vii) Quantity of material mined out outside the mine lease area</li> <li>(viii) Condition of Safety zone/benches</li> <li>(ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.</li> </ol> </li> <li>2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.</li> <li>3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.</li> <li>4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.</li> <li>5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.</li> <li>6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.</li> <li>7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining &amp; Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.</li> <li>8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth</li> </ol>

S. No	Terms of Reference
	<p>of the working is extended beyond 30 m below ground level.</p> <p>9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.</p> <p>10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.</p> <p>11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.</p> <p>12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,</p> <p>13. 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>14. Quantity of minerals mined out.</p> <ul style="list-style-type: none"> <li>● Highest production achieved in any one year</li> <li>● Detail of approved depth of mining.</li> <li>● Actual depth of the mining achieved earlier.</li> <li>● Name of the person already mined in that leases area.</li> <li>● If EC and CTO already obtained, the copy of the same shall be submitted.</li> <li>● Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.</li> </ul> <p>15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).</p> <p>16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,</p> <p>17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees &amp; safety distance between the adjacent quarries &amp; water bodies nearby provided as per the approved mining plan.</p> <p>18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.</p> <p>19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.</p> <p>20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping &amp; open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.</p> <p>21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality &amp; flora/fauna including traffic/vehicular movement study.</p> <p>22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control &amp; health impacts.</p>

S. No	Terms of Reference
	<p>Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.</p> <p>23. Rain water harvesting management with recharging details along with water balance (both monsoon &amp; non-monsoon) be submitted.</p> <p>24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.</p> <p>25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&amp;R issues, if any, should be provided.</p> <p>26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.</p> <p>27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.</p> <p>28. Impact on local transport infrastructure due to the Project should be indicated.</p> <p>29. 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.</p> <p>30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.</p> <p>31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.</p> <p>32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.</p> <p>33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner</p> <p>34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.</p> <p>35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.</p> <p>36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.</p> <p>37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.</p> <p>38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to</p>

S. No	Terms of Reference
	<p>be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.</p> <p>39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.</p> <p>40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.</p> <p>41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&amp;CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.</p> <p>42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine</p> <p>43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.</p>

**Standard Terms of Reference for (Mining of minerals)**

1.

S. No	Terms of Reference
1.1	An EIA-EMP Report shall be prepared for peak capacity (.....MTPA)operation in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.
1.2	An EIA-EMP Report would be prepared for peak capacity operation to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of mineral production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
1.3	Propoer KML file with pin drop and coordinate of mine at 500-1000 m interval be provided
1.4	A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries, mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given. The above details to be furnished in tabular form also
1.5	Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
1.6	A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.

S. No	Terms of Reference																																													
1.7	Catchment area with its drainage map of 25 km area within and outside the mine shall be provided with names, details of rivers/ riverlet system and its respective order. The map should clearly indicate drainage pattern of the catchment area with basin of major rivers. Diversion of drains/ river need elaboration in form of length, quantity and quality of water to be diverted																																													
1.8	(Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.																																													
1.9	Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.																																													
1.10	Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.																																													
1.11	A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.																																													
1.12	<p>Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations should be analyzed. Extent of area under surface rights and under mining rights should be specified. Area under Surface Rights</p> <table border="1"> <thead> <tr> <th>S.N</th> <th>ML/Project Land use</th> <th>Area under Surface Rights(ha)</th> <th>Area Under Mining Rights(ha)</th> <th>Area under Both (ha)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Agricultural land</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>Forest Land</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>Grazing Land</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Settlements</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>Others (specify)</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>S.N.</th> <th>Details</th> <th>Area (ha)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Buildings</td> <td></td> </tr> <tr> <td>2</td> <td>Infrastructure</td> <td></td> </tr> <tr> <td>3</td> <td>Roads</td> <td></td> </tr> <tr> <td>4</td> <td>Others (specify)</td> <td></td> </tr> </tbody> </table>	S.N	ML/Project Land use	Area under Surface Rights(ha)	Area Under Mining Rights(ha)	Area under Both (ha)	1	Agricultural land				2	Forest Land				3	Grazing Land				4	Settlements				5	Others (specify)				S.N.	Details	Area (ha)	1	Buildings		2	Infrastructure		3	Roads		4	Others (specify)	
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S. No	Terms of Reference
	Total
1.13	Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
1.14	One-season (other than monsoon) primary baseline data on environmental quality - air (PM10, PM2.5, SO <sub>x</sub> , NO <sub>x</sub> and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided. The detail of NABL/ MoEF&CC certification of the respective laboratory and NABET accreditation of the consultant to be provided.
1.15	Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.
1.16	For proper baseline air quality assessment, Wind rose pattern in the area should be reviewed and accordingly location of AAMSQ shall be planned by the collection of air quality data by adequate monitoring stations in the downwind areas. Monitoring location for collecting baseline data should cover overall the 10 km buffer zone i.e. dispersed in 10 km buffer area. In case of expansion, the displayed data of CAAQMS and its comparison with the monitoring data to be provided
1.17	A detailed traffic study along with presence of habitation in 100 mts distance from both side of road, the impact on the air quality with its proper measures and plan of action with timeline for widening of road. The project will increase the no. of vehicle along the road which will indirectly contribute to carbon emission so what will be the compensatory action plan should be clearly spell out in EIA/ EMP report.
1.18	The socio-economic study to conducted with actual survey report and a comparative assessment to be provided from the census data should be provided in EIA/ EMP report also occupational status & economic status of the study area and what economically project will contribute should be clearly mention. The study should also include the status of infrastructural facilities and amenities present in the study area and a comparative assessment with census data to be provided and to link it with the initialization and quantification of need based survey for CSR activities to be followed.
1.19	The Ecology and biodiversity study should also indicate the likely impact of change in forest area for surface infrastructural development or mining activity in relation to the climate change of that



S. No	Terms of Reference
	area and what will be the compensatory measure to be adopted by PP to minimize the impact of forest diversion.
1.20	Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be submitted.
1.21	Impact of proposed project/activity on hydrological regime of the area shall be assessed and report be submitted. Hydrological studies as per GEC 2015 guidelines to be prepared and submitted
1.22	Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
1.23	Study on land subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
1.24	Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
1.25	PP shall submit design details of all Air Pollution control equipment (APCEs) to be implemented as part of Environment Management Plan vis-à-vis reduction in concentration of emission for each APCEs
1.26	PP shall propose to use LNG/CNG based mining machineries and trucks for mining operation and transportation of mineral. The measures adopted to conserve energy or use of renewable sources shall be explored
1.27	PP to evaluate the green house emission gases from the mine operation/ washery plant and corresponding carbon absorption plan.
1.28	Site specific Impact assessment with its mitigation measures, Risk Assessment and Disaster Preparedness and Management Plan should be provided.
1.29	Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.
1.30	Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
1.31	Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.

S. No	Terms of Reference
1.32	The number and efficiency of mobile/static water jet, Fog cannon sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.
1.33	Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
1.34	Adequate greenbelt nearby areas, mineral stock yard and transportation area of mineral shall be provided with details of species selected and survival rate Greenbelt development should be undertaken particularly around the transport route and CHP.
1.35	Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
1.36	Details of R&R. Detailed project specific R&R Plan with data on the existing socio- economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.
1.37	CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.
1.38	Corporate Environment Responsibility:
1.39	a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
1.40	b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
1.41	c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
1.42	d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
1.43	e) Environment Management Cell and its responsibilities to be clearly spelled out in EIA/ EMP report
1.44	f) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
1.45	Status of any litigations/ court cases filed/pending on the project should be provided.

S. No	Terms of Reference																								
1.46	PP shall submit clarification from DFO that mine does not falls under corridors of any National Park and Wildlife Sanctuary with certified map showing distance of nearest sanctuary.																								
1.47	Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.																								
1.48	<p>Details on the Forest Clearance should be given as per the format given:</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%;">Total ML Total</td> <td style="width: 15%;">Date</td> <td style="width: 15%;">Extent of</td> <td style="width: 15%;">Balance area for which</td> <td style="width: 15%;">Status of appl For</td> </tr> <tr> <td>Project Area</td> <td>Forest</td> <td>of FC</td> <td>Forest Land</td> <td>FC is yet to be</td> <td>diversion of forest</td> </tr> <tr> <td>(ha)</td> <td>land (ha)</td> <td></td> <td></td> <td>obtained</td> <td>land</td> </tr> <tr> <td></td> <td colspan="5">If more than one provide details of each FC</td> </tr> </table>		Total ML Total	Date	Extent of	Balance area for which	Status of appl For	Project Area	Forest	of FC	Forest Land	FC is yet to be	diversion of forest	(ha)	land (ha)			obtained	land		If more than one provide details of each FC				
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(ha)	land (ha)			obtained	land																				
	If more than one provide details of each FC																								
1.49	In case of expansion of the proposal, the status of the work done as per mining plan and approved mine closure plan shall be detailed in EIA/ EMP report																								
1.50	Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the time bound action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.																								
1.51	PP shall carry out survey through drone highlighting the ground reality for atleast 10 minutes																								
1.52	Detailed Chronology of the project starting from the first lease deed allotted/Block allotment/ Land acquired to its No. of renewals, CTO /CTE with details of no. renewals, previous EC(s) granted details and its compliance details, NOC details from various Govt bodies like Forest NOC(s), CGWA permissions, Power permissions, etc as per the requisites respectively to be furnished in tabular form.																								
1.53	The first page of the EIA/ EMP report must mention the peak capacity production, area, detail of PP, Consultant (NABET accreditation) and Laboratory (NABL / MoEF & CC certification)																								
1.54	The compliances of ToR must be properly cited with respective chapter section and page no in tabular form and also mention sequence of the respective ToR complied within the EIA-EMP report in all the chapter,s section.																								

## **SEIAA SPECIFIC CONDITIONS:**

### **Cluster Management Committee**

1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.
2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,
3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.
4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.
7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.
8. The committee shall furnish the Emergency Management plan within the cluster.
9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.
10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.

### **Impact study of mining**

12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following

- a) Soil health & soil biological, physical land chemical features .
- b) Climate change leading to Droughts, Floods etc.
- c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
- d) Possibilities of water contamination and impact on aquatic ecosystem health.
- e) Agriculture, Forestry & Traditional practices.
- f) Hydrothermal/Geothermal effect due to destruction in the Environment.
- g) Bio-geochemical processes and its foot prints including environmental stress.
- h) Sediment geochemistry in the surface streams.

### **Agriculture & Agro-Biodiversity**

- 13. Impact on surrounding agricultural fields around the proposed mining Area.
- 14. Impact on soil flora & vegetation around the project site.
- 15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplanted of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.
- 16. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.
- 17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
- 18. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.

### **Forests**

- 19. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
- 20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
- 21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
- 22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.

### **Water Environment**

23. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.
24. Erosion Control measures.
25. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.
26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.
28. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
30. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.

#### **Energy**

31. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.

#### **Climate Change**

32. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.
33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.

#### **Mine Closure Plan**

34. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.

**EMP**

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

36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.

**Risk Assessment**

37. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.

**Disaster Management Plan**

38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.

**Others**

39. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.

40. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.

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.

**Signature Not Verified**

Digitally Signed by : A R Rahul Nadh IAS  
Member Secretary, SEIAA

Date: 07/06/2024

From

Thiru.A.Perumal, M.Sc., M.Phil  
Deputy Director,  
Geology and Mining,  
Tiruppur

To

Tmt.G.Susila,  
W/o.Gunasekaran,  
No.1/241, Milk Society Opposit,  
Kuppusamy naidupuram,  
Semmipalayam,  
Palladam.

**R.c. No.112/ Mines / 2023 dated: 14.02.2024**

Sub: Mines and Minerals - Minor Mineral - Rough Stone and Gravel- Tiruppur District - Kangeyam Taluk - Mudalipalayam Village- S.F.Nos. 986/B1(Part) - Over an Extent of 1.21.46 Hectares of patta land- Quarry lease for Rough Stone and Gravel - Application preferred by Tmt.G.Susila - Precise area communicated for the proposed grant of quarry lease - Mining Plan Submitted for approval - Approved - further details requested - furnished regarding.

- Ref: 1. Application for grant of Rough Stone and Gravel quarry lease preferred by Tmt.G.Susila dated: 21.03.2023.  
2. G.O. Ms. No. 79 / Industries (MMC I) Department dated 06.04.2015.  
3. The Deputy Director, Geology and Mining, Tiruppur letter R.C. No. 112/Mines/2023 dated 12.02.2024.  
4. Tmt.G.Susila letter dated:nil received on 12.03.2024.  
5. This office letter even no. dated.14.03.2023 (Mining Plan approved)

\*\*\*\*\*

In the reference 5<sup>th</sup> cited above, the applicant Tmt.G.Susila has requested to furnish details of other quarry leases of expired, existing and proposed within 500mtr radius from the proposed rough stone and gravel lease over an extent of 1.21.46 Hect in S.F.No.986/B1(Part) of Mudalipalayam Village of Kangeyam Taluk, Tiruppur District.

As requested by the applicant, the details of existing, proposed and expired quarries situated within the radius of 500 meters from the subject area are furnished as follows:-



1. Existing quarries:

SNo	Name of the Applicant	S.F.Nos	Extent(Hect)	Lease Period
1.	Sri Muthukumar Blue Metals	986/B2A (P)	2.45.0	22.01.2024 to 21.01.2034

2. Proposed quarries :

Sl.No	Name of the Applicant	S.F.Nos	Extent (Hect)	Remarks
1.	R.Karthick	984/2A1 (Part)	1.61.95	Quarry lease application is under process
2.	G.Suseela	986/B1 (Part)	1.21.46	Quarry lease application is under process

3. Lease expired and abandoned quarries:

SNo	Name of the Applicant	S.F.Nos	Extent(Hect)	Lease Period
1	B.Rajamani	984/2A2 (Part), 984/2B (Part)	1.21.40	05.10.2018 to 04.10.2023

*[Handwritten Signature]*  
Deputy Director  
Geology and Mining,  
Tiruppur

Copy to : State Level Environment Impact Assessment Authority-Tamil Nadu, 3<sup>rd</sup> Floor, Panagal Maaligai, No.1 Jeenis Road, Saidapet, Chennai-15

*[Handwritten Signature]*  
H34

*[Handwritten Signature]*

From

Thiru. A.Perumal, M.Sc., M.Phil.,  
Deputy Director,  
Geology and Mining,  
Tiruppur

To

Tmt.G.Susila,  
W/o.Gunasekaran,  
No.1/241, Milk Society Opposit,  
Kuppusamy naidupuram,  
Semmipalayam,  
Palladam.

**R.c. No. 112/ Mines / 2023 dated: 14.03.2024**

Sub: Mines and Minerals - Minor Mineral - Rough Stone and Gravel- Tiruppur District - Kangeyam Taluk - Mudalipalayam Village- S.F.Nos. 986/B1(Part) - Over an Extent of 1.21.46 Hectares of patta land- Quarry lease for Rough Stone and Gravel - Application preferred by Tmt.G.Susila - Precise area communicated for the proposed grant of quarry lease - Mining Plan Submitted for approval - Approved - regarding.

- Ref: 1. Application for grant of Rough Stone and Gravel quarry lease preferred by Tmt.G.Susila dated: 21.03.2023.  
2. G.O. Ms. No. 79 / Industries (MMC 1) Department dated 06.04.2015.  
3. The Deputy Director, Geology and Mining, Tiruppur letter R.C. No. 112/Mines/2023 dated 12.02.2024.  
4. Tmt.G.Susila letter dated:nil received on 12.03.2024.

\*\*\*\*\*


Tmt.G.Susila preferred an application for the grant of Rough Stone and Gravel quarry lease over an extent of 1.21.46 Hectares of Patta land in S.F.No.986/B1 (Part) of Mudalipalayam Village, Kangeyam Taluk, Tiruppur District vide the reference 1<sup>st</sup> cited and the precise area was communicated to the applicant vide the reference 3<sup>rd</sup> cited with a direction to submit the approved mining plan and Environmental Clearance.

As directed, the applicant submitted three copies of mining plan for approval vide the reference 4<sup>th</sup> cited. The Mining Plan has been verified in detail and found that it was prepared in accordance with the guidelines / instructions issued by the Commissioner of Geology and Mining in letter RC. No. 3868 / LC / 2012 dated 19.11.2012.

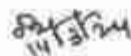
Therefore in exercise of the powers conferred under Rule 41(2) of Tamil Nadu Minor Mineral Concession Rules, 1959, read with G.O. (Ms). No.79 / Industries (MMC 1) Department dated 06.04.2015, the mining plan is hereby approved, subject to the following conditions:

- (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) This approval of the mining plan does not in any way convey the approval of the Government in terms or any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives Act, 1884 (Central Act IV of 1884) Minor Mineral Concession and Development Rules, 2010 and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- (iii) The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- (iv) The validity of the mining plan is co-terminus with the lease period.
- (v) Quarrying shall be done in accordance with the approved Mining Plan and that 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.
- (vi) If anything is found to be concealed as required by the Mines Act in the contents of the Mining Plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
- (vii) A safety distance of 7.5 meters shall be provided for the patta lands situated adjacent to the applied area.
- (viii) A safety distance of 10 meters shall be provided for the Village road passing on the Western side of the applied area.

Encl.: Approved Mining Plan.

  
Deputy Director,  
Geology and Mining,  
Tiruppur

  
H/13/14

  
14/13/14



**MINING PLAN ALONG WITH PROGRESSIVE QUARRY  
CLOSURE PLAN FOR MUDALIPALAYM  
ROUGH STONE AND GRAVEL QUARRY**

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL  
CONCESSION RULES, 1959)

**Government Land/ Lease period = Five years**

*IN*

**LOCATION OF THE QUARRY LEASE APPLIED AREA**

EXTENT : 1.21.46 Ha  
S.F.NO. : 986/B1 (PART)  
VILLAGE : MUALIPALAYAM  
TALUK : KANGAYAM  
DISTRICT : TIRUPPUR  
STATE : TAMIL NADU

*FOR*

**APPLICANT**

**Tmt. G. SUSILA,**

W/o. Gunasekaran

No.1/241, Milk society opposite,

Kuppusarnyaidupuram,

Semmipalayam, Palladam,

Tiruppur District,

Tamil Nadu – 641 662.

Mobile No. 8508677996.

**PREPARED BY**

**M.SANTHOSHKUMAR, M.Sc.,**

Qualified Person

(Under Rule 15(I)(a) and (I)(b) of MCR, 2016)

Plot No.3, Kattuvattam, Kothukara Samathi Via

Kannakurichi, Salem – 636 008

Cell: +97914 41745

E-Mail: santoshgeo2004@gmail.com



## ABBREVIATIONS

- EC - Environmental Clearance.
- EIA - Environment Impact Assessment.
- EMP - Environment Management Plan.
- ToR - Terms of Reference.
- NGT - National Green Tribunal.
- SEAC - State Expert Appraisal Committee.
- SEIAA - State Level Environment Impact Assessment Authority.
- DEAC - District Expert Appraisal Committee.
- DEIAA - District Level Environment Impact Assessment Authority.
- MoEF&CC - Ministry of Environment, Forest and Climate changes.
- CPCB - Central Pollution control board.
- TNPCB - Tamil Nadu Pollution control board.
- DMS - Director of Mines Safety.
- DGMS - Director of General Mines Safety.
- CRZ - Coastal Regulatory Zone.
- HACA - Hill Area Conservation Authority.
- S.F.No. - Survey Field Number.
- MMR - Metalliferous Mines Regulations.
- MCR - Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules.
  
- TNMMCR - Tamil Nadu Minor Mineral Concession Rules.
- NONEL - Non Electric.
- PPV - Peak Particle Velocity.
- DGPS - Differential Global Positioning System.
- QP - Qualified Person.
- MSL - Mean Sea Level
- AGL - Above Ground Level
- BGL - Below Ground Level



**G. SUSILA,**

W/o. Gunasekaran  
No.1/241, Milk society opposite,  
Kuppusamynaidupuram,  
Semmipalayam, Palladam  
Tiruppur District,  
Tamil Nadu – 641 662.  
Mobile No. 8508677996.

**CONSENT LETTER FROM THE APPLICANT**

The Mining Plan and Progressive Quarry Closure Plan in Respect of Mudalipalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.21.46 Hectares Patta land in S.F.No. 986/B1 (Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared by

**M.SANTHOSHKUMAR, M.Sc.,**

Qualified Person

(Under Rule 15(I)(a) and (I)(b) of MCR, 2016)

I have entrusted the works to prepare the Mining Plan based upon the production requirements to me as per the Mines Acts, Rules, Regulations and Amendments as on date. I request to the Deputy Director, Department of Geology and Mining, Tiruppur District, Tamil Nadu State to make further correspondence regarding the modification of the Mining Plan with the said Qualified Person at his following address.

**M.SANTHOSHKUMAR, M.Sc.,**

Plot No.3, Kattuvattam,  
Kothukara Samathi Via,  
Kannakurichi, Salem – 636 008.  
Cell: +91 97914 41745

I hereby undertake that all the responsibilities of contents in the Mining Plan and if any corrections 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 binding on me in all respects. If there is any substantial change during operation I will carry out a Modified Mining plan and seek its approval from concerned Authorities.

Signature of the Applicant

  
(G. Susila)

Place: Tiruppur

Date: 13.02.2024



**G. SUSILA,**

W/o. Gunasekaran

No.1/241, Milk society opposite,

Kuppusamynaidupuram,

Semmipalayam, Palladam,

Tiruppur District,

Tamil Nadu – 641 662.

Mobile No. 8508677996.

**DECLARATION OF THE APPLICANT**

The Mining Plan and Progressive Quarry Closure Plan in Respect of Mudalipalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.21.46 Hectares Patta land in S.F.No. 986/B1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared in full consultation with me.

I have understood its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to quarry from time to time as per Tamil Nadu Minor Mineral Concession Rules, 1959.

Signature of the Applicant

*G. Susila*  
(G. Susila)

Place: Tiruppur

Date: 19.02.2024



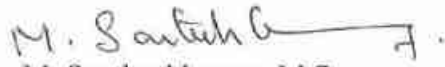
## CERTIFICATE

Certified that I am, **M. SANTHOSHKUMAR, M.Sc.**, residing at Plot No:3, Kattuvattam, Kothukara Samathi Via, Kannakurichi, Salem District- 636 008, holding a Post Graduate Degree in Geology (M.Sc., Applied Geology) from Annamalai University, Chidambaram and I worked in the field of Geology in a role of Geologist.

Rule 15(I)(a) and (b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 stipulates the eligibility for preparing Mining plans as “(I)(a) a degree in mining engineering or a post-graduate degree in geology granted by a university established” and (I)(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 (I)(a) and (I)(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 and Progressive Quarry Closure Plan in Respect of Mudalipalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.21.46 Hectares Patta land in S.F.No. 986/B1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District for **Tmt. G. Susila**, W/o. Gunasekaran residing at No.1/241, Milk society opposite, Kuppasamynaidupuram, Semmipalayam, Palladam, Tiruppur District, Tamil Nadu – 641 662. Since the Mining Plan is prepared as per the provisions contained in Rule 15(I)(a) and (I)(b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person

  
M. Santhoshkumar, M.Sc.,

Place: Salem

Date: 19.02.2024





**M.SANTHOSHKUMAR, M.Sc.,**

Plot No.3, Kattuvattam,

Kothukara Samathi Via,

Kannakurichi, Salem – 636 008.

Cell: +91 97914 41745.

**CERTIFICATE FROM THE QUALIFIED PERSON**

This is to certify that the Provisions of Prepared under Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959. The preparation of Mining Plan and Progressive Quarry Closure Plan for Mudalipalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.21.46 Hectares Patta land in S.F.No. 986/B1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared for

**Tmt. G. SUSILA,**

W/o. Gunasekaran

No.1/241, Milk society opposite,

Kuppusamynaidupuram,

Semmipalayam, Palladam,

Tiruppur District,

Tamil Nadu – 641 662.

Mobile No. 8508677996.

Whenever specific permissions / exemptions / relaxations and approvals are required, the applicant will approach the concerned authorities of the Deputy Director, Department of Geology and Mining, Tiruppur District, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the above Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

*M. Santhosh Kumar*  
M.Santhoshkumar, M.Sc.,

Place: Salem

Date: 19.02.2024



**M.SANTHOSHKUMAR, M.Sc.,**

Plot No.3, Kattuvattam,  
Kothukara Samathi Via,  
Kannakurichi, Salem – 636 008.  
Cell: +91 97914 41745

**CERTIFICATE FROM THE QUALIFIED PERSON**

Certified that the Provisions of Mines Act, Rules and Regulations or Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Mudalipalayam Rough Stone and Gravel Quarry lease applied area over an extent of 1.21.46 Hectares Patta land in S.F.No. 986/B1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared for

**Tmt. G. SUSILA,**

W/o. Gunasekaran  
No.1/241, Milk society opposite,  
Kuppusamynaidupuram,  
Semmpalayam, Palladam,  
Tiruppur District,  
Tamil Nadu – 641 662.  
Mobile No. 8508677996.

Whenever specific permissions / exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of Director of Mines Safety (DMS), No.5, II Street, Block-AA, Anna Nagar, Chennai-40, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

*M. Santhosh Kumar*  
M.Santhoshkumar, M.Sc.,

Place: Salem

Date: 19.02.2024



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### LIST OF ANNEXURES

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## MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR MUDALIPALAYAM ROUGH STONE AND GRAVEL.

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDMENT OF TAMIL NADU MINOR MINERAL  
CONCESSION RULES, 1959)

### 1.0 INTRODUCTION AND EXECUTIVE SUMMARY

The applicant **Tmt. G. Susila**, W/o. Gunasekaran, residing at No. 1/241, Milk society opposite, Kuppasamynaidupuram, Semmipalayam, Palladam, Tiruppur District, Tamil Nadu – 641 662 has entrust and given consent to preparation of Mining plan and Progressive Mine Closure Plan as per the provisions of Mines Act, Rules, Regulations and as amended till date.

The applicant has applied quarry lease for quarrying of Rough Stone and Gravel for over an extent of 1.21.46 hectares patta lands in S.F.No. 986/B1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State for a period of five years under Rules 19 and 20 of Tamil Nadu Minor Mineral Concession Rules, 1959. The following are the statutory requirements with respect to Rough Stone and Gravel quarry.

1. Tmt.G.Susila, W/o Gunasekaran No. 1/241, Milk society opposite, Kuppasamynaidupuram, Semmipalayam, Palladam application dated: 21.03.2023.
2. Deputy Director, Department of Geology and Mining, Tiruppur, letter Rc.No. 112/Mines/2023 dated: 12.02.2024.
3. The Tashildar, Kangayam letter R.C.No.14666/2023/A2 dated: 09.05.2023
4. The District Collector, Tharapuram letter R.C.No.1775/2023/C dated: 16.05.2023
5. Assistant Director and Revenue Inspector, Department of Geology and Mining, Tiruppur, inspection report dated: 09.01.2024
6. The Block Development Officer, Kundadam Letter R.C.No.4372/2022/A2 dated: 01.02.2024.
7. Government Order No. 169 Industries (M.M.C.1) Department Dated: 04.08.2020.

The application was examined, Scrutinized, Inspected and processed by the Deputy Director, Department of Geology and Mining, Tiruppur and issued a Precise Area Communication letter vide letter **R.C. No. 112/Mines/2023, dated 12.02.2024** for preparation of Mining plan as per the Rule 41 & 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 within 90 days and getting approval from the Department of Geology and Mining, Tiruppur to obtain Environmental Clearance from the State Level Environment Impact Assessment Authority (SEIAA), Tamil Nadu, with the following conditions to provide (Refer Annexure No. I):

**General Conditions:**

1. The applicant should submit approved mining plan and Environmental Clearance obtained from Environment Impact Assessment Authority to the area applied for Rough stone and Gravel quarry lease for over an extent 1.21.46 hectares of patta lands in S.F.No. 986/B1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District.
2. A safety distance of 7.5 meters should be provided to the adjacent patta lands from the boundary of the area applied for quarry lease.
3. The applicant should submit the DGPS survey report for the area applied for lease.

**Special Condition:**

1. Excavation should be carried out by leaving a 10m safety distance to the village road going west to Southern-north adjacent to the Lease area.

This Mining Plan along with Progressive Mine closure Plan is prepared in full consultation with **Tmt. G. Susila**, W/o. Gunasekaran, residing at No. 1/241, Milk society opposite, Kuppusamynaidupuram, Semmipalayam, Palladam, Tiruppur District, Tamil Nadu – 641 662 for Rough stone and Gravel quarry over an extent 1.21.46 hectares of patta lands in S.F.No. 986/B1(Part) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State under Rules 19 and 20 of Tamil Nadu Minor Mineral Concession Rules, 1959 with obtained full consent as per the application and Production schedule in preparation of Mining plan as per the provisions of Mines Act, Rules, Regulations as on date.

The Mining plan has been prepared after carrying the field survey, collection of Primary & secondary data, environmental setting, geological features and tentatively estimated the Resources & Reserves, depth of mining as identified in the field with best our knowledge and experience. This mining plan is prepared by considering the Rule 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendments.

In order to ensure compliance of the order of the Honourable Supreme Court Dated: 27.02.2012 in I.A.No.12-13 of 2011 in Special Leave Petition(SLP) (C) No 19628-19629/2009, it has been now decided that all mining projects of minor minerals including their renewal is require prior environmental clearance. As per amendment in EIA Notification 2006 vide S.O. 1886(E), Dated:20.04.2022 "All mining lease area in respect of minor mineral mining leases and  $\leq$  250 ha mining lease area in respect of major mineral mining lease other than coal" would be treated as category B and will be considered by the state notified by Ministry of Environment, Forest and Climate Change as prescribed procedure under EIA notification 2006.

The field survey carried out by the Qualified Person and Team as on 15.02.2024.

**Short Notes of Mining plan:**

- a. Village Panchayat - Mudalipalayam
- b. Panchayat Union - Tiruppur
- c. Total extent of the lease applied area is 1.21.46Ha.
- d. Topography of the area - The area exhibits plain topography.
- e. The Estimated Geological Resources are **3,68,926m<sup>3</sup>** of Rough stone and **8,396m<sup>3</sup>** of Gravel in the entire area.
- f. Tentative total Mineable Reserves are **94,511m<sup>3</sup>** of Rough stone and **4,176m<sup>3</sup>** of Gravel in the entire area.
- g. The proposed quantity of reserves/ (level of production) to be mined are **94,511m<sup>3</sup>** of Rough stone for five years and **4,176m<sup>3</sup>** of Gravel for first year in the entire area.
- h. Proposed Depth of mining = 42m below ground level.
- i. Lease Period = Five years
- j. It is a fresh lease application but, the applied area has been considered quarrying operation earlier. The quarry lease was previously granted for quarrying Rough stone and Gravel with two spells and the lease granted details are given table below. (Refer Annexure No. IA & IC)

Table – 1

Spell	Name of the Lessee	District Collector's Proceeding Number and Date	Lease Period
1	Thiru. T. Gunasekaran	Rc.No. 207/Mines/2011, Dated:14.09.2011	14.09.2011 – 13.09.2016
2	Thiru. T. Gunasekaran	Rc.No. 384/Mines/2016, Dated:16.04.2018	16.04.2018 – 15.04.2023

The lessee (Thiru. T. Gunasekaran) was obtained Environmental Clearance from the SEIAA, Tiruppur District vide **Lr. No. SEIAA – TN/F.No.5898/1(a)/EC.No:3900/2016, Dated:18.11.2016** (Refer Annexure No. IB). At present there is an existing pit situated within the lease applied area, the maximum dimension of existing quarry pit is given table below (Refer Plate No.II)

TABLE-1A

Length (m)	Width (m)	Depth (m)
128	84	18m below ground level



- k. Method of mining / level of mechanization.  
Opencast mechanized method, the quarry operation involves shallow jack hammer drilling, slurry blasting with NONEL initiation.
- l. Type of machineries proposed in the quarrying operation is given below.  
Excavators attached with bucket and rock breaker.  
Hand Jack hammer, Compressor (Diesel drive) (4 Jack Hammer capacity).
- m. No trees will be uprooted due to this quarry operation.
- n. The approach road from the main road to quarry is already existence; the same will be maintained in good condition for the haulage of quarry materials and machineries.
- o. There is No Export of this Rough stone and Gravel.
- p. Topo sketch covering 10km and 1km radius around the proposed area with markings of habitations, water bodies including streams, rivers, roads, major structure like bridges, wells, archaeological importance and places of worships is marked and enclosed as Plate Nos. IA & IB.
- q. The lease applied area is about 1.61.95Ha bounded by four corners; the corners are designated as 1-4 clockwise from the Southwestern corner and the Co – ordinates for all the corners are clearly marked in the Quarry Lease Plan and Surface Plan enclosed as Plate No. II.
- r. The plans of proposed quarrying area showing the dimensions of the pit, their proposed depth and maximum area of proposed quarrying are enclosed as Plate Nos. III, and IV.
- s. General conditions will not applicable for the proposed area. The area applied for lease is 10Km away from the,
- i) *Interstate Boundary,*
  - ii) *Protected area under wild life protection ACT, 1972,*
  - iii) *Critically polluted areas as identified by CPCB,*
  - iv) *Notified Eco sensitive areas.*
- t. There is no waste anticipated during this quarry operation, hence waste dump is not proposed in the lease applied area.
- u. Around 20 employees are proposed to deploying the quarrying operation.
- v. Total Cost of the project is about **Rs. 41,79,000/-**.



**2.0 GENERAL INFORMATION**

**2.1 a) Name of the Applicant :** Tmt. G. Susila,  
: W/o. Gunasekaran,

**b) Address of the Applicant (With Phone No and Aadhaar No.)**

Address : No. 1/241, Milk society opposite,  
Kuppusamynaidupuram,  
Semmpalayam, Palladam  
Tiruppur District,  
State with Pin Code : Tamil Nadu – 641 662.  
Mobile No : +85086 77996 and 99429 77991  
Aadhaar No : 3050 9968 6610 (Refer Annexure No. VII)  
E-mail : sritirupathybluemetals@gmail.com

**c) Status of the Applicant (Individual / Company / Firm):**

The applicant is an individual.

**2.2 a) Mineral which the Applicant intends to mine:**

The Applicant intends to quarry Rough Stone and Gravel only.

**b) Precise area communication letter details received from the Competent Authority of the Government:**

The precise area communication letter was received from the Deputy Director, Department of Geology and Mining, Tiruppur District vide **RC. No. 112/Mines/2023 dated 12.02.2024** (Refer Annexure No. I) and was given to us for the preparation of mining plan to meet out the applicant production schedule.

**c) Period of permission / lease to be granted:**

Five Years as mentioned in Precise area Communication letter.

**d) Name and address of the Qualified Person who preparing the Mining Plan:**

Name : **M. SANTHOSHKUMAR, M.Sc.,**  
Qualified Person (Under Rule 15(I)(a) and (I)(b) of MCR, 2016)  
Address : Plot No.3, Kattuvattam,  
Kothukara Samathi Via,  
Kannakurichi,  
Salem – 636 008.  
Mobile : +91 97914 41745  
Email : [santoshgeo2004@gmail.com](mailto:santoshgeo2004@gmail.com)

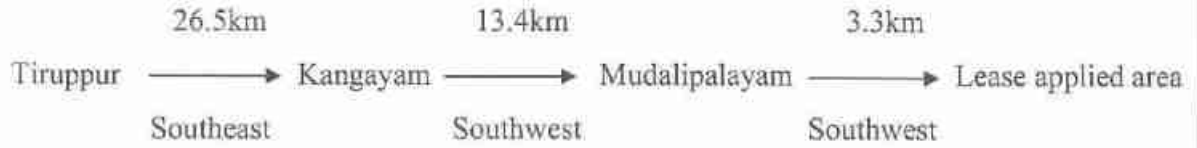
(Please Refer Annexure Nos. VIII and VIII -A).



**3.0 LOCATION**

**a) Details of the area with location map:**

The lease applied area is located about 32.2km Southeast side of Tiruppur town, 15.2km Southwest side of Kangayam town and 3.3km Southwest side of Mudalipalayam Village.



Location Map of the Lease Applied area

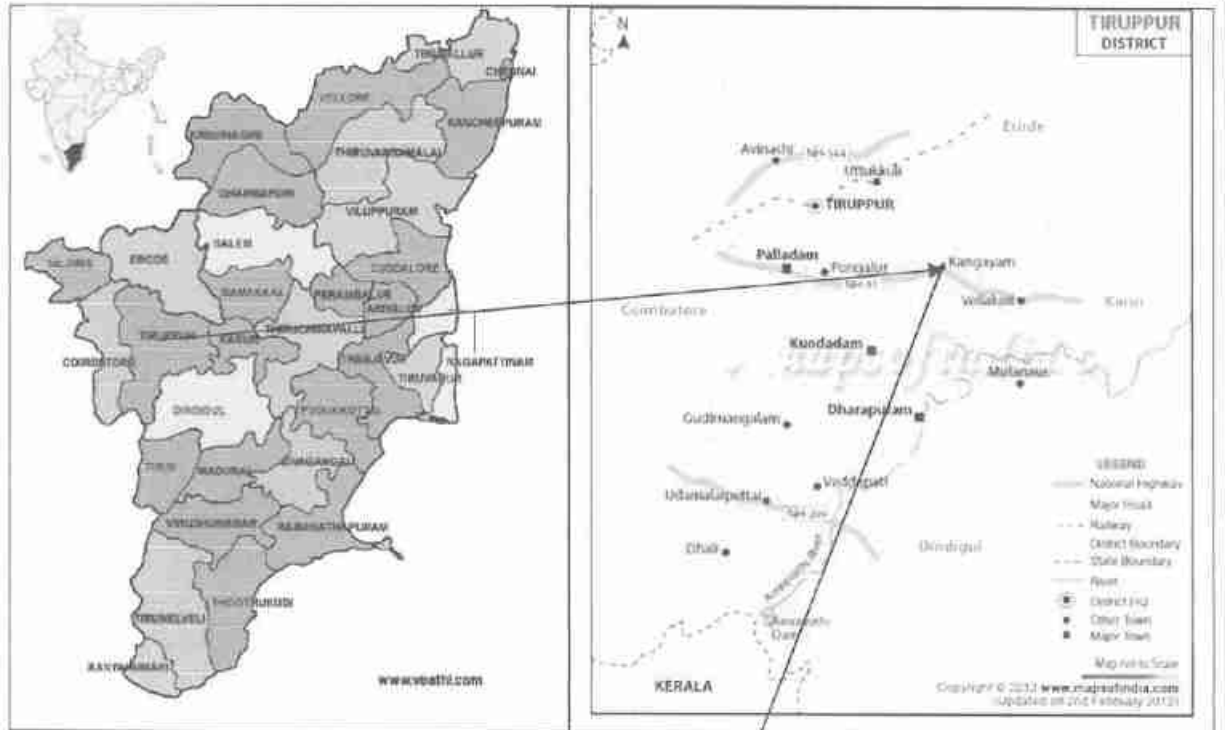




TABLE-2

District	Taluk	Village	S.F. No.	Area (Ha.)	Patta No.
Tiruppur	Kangayam	Mudalipalayam	986/B1(Part)	1.21.46	1026
Total Extent				1.21.46	

Source: As per the FMB and 'A' register record furnished by the applicant.

**b) Classification of the area (Ryotwari/ Poramboke / others):**

It is Patta lands, classified as Punsei.

**c) Ownership / Occupancy of the applied area (surface right):**

It is Patta land, registered in the name of applicant (Tmt. G. Susila) vide patta No. 1026

(Refer Annexure Nos. IV-VI).

**d) Toposheet No. with latitude and longitude:**

The lease applied area falls in the Toposheet No: 58 F/09 Latitude between: 10°52'23.36"N to 10°52'27.95"N and Longitude between: 77°31'03.24"E to 77°31'06.43"E on WGS datum-1984.

Please refer the Plate Nos. I to II as per the GSI Toposheet.

**e) Existence of public road / Railway line, if any nearby and approximate distance:**

The approach road is situated on the Southern side, which is connects to the Village Road is located at 180m on the southwestern side of the lease applied area.

Road access is available from the quarry to state highways and National Highway, no towns are enrooted hence the traffic density is not much more due to the transportation of Rough stone and Gravel.

The approach road from the quarry will be constructed and the same has been utilized for haulage and maintained during the entire lease period.

The Nearest Railway line is Coimbatore – Erode which is located about 31.6km on the Northwestern side of the area as per the GSI Toposheet and Google Map.

**PART - A****4.0 GEOLOGY AND MINERAL RESERVES****4.1 Brief description of the Topography and general Geology of the area (with plans):**

The lease applied area exhibits plain topography. The area has gentle sloping towards Southeast side and altitude of the area is 279m above from Mean Sea Level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the existing quarry pit. The Water table is found at a depth of 58m - 62m. Average annual rainfall is about 607mm.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N30°E- S30°W with dipping towards SE80°.

The general geological sequences of the rocks in this area are given below:

↑ AGE	FORMATION
Recent	- Quaternary formation (Gravel)
-----Unconformity-----	
Archaean	- Charnockite
	Peninsular Gneissic complex

**4.2 Details of exploration already carried out if any:**

State Geology and Mining Dept, Govt. of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed mapping in Tiruppur District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. The Rough stone formation is clearly inferred from the existing quarry pit.

**4.3 Estimation of Reserves:****a) Geological Resources with geological sections on a scale of 1:1000 / 1:2000**

As far as Rough stone (Charnockite) is concerned, the only practical method is the systematic geological mapping and delineation of Rough stone within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.,

Totally four sections have been drawn, one section is drawn along the strike direction as (X-Y) Length wise and other three cross sections are drawn perpendicular to strike as (A-B), (C-D) and (E-F) Width wise to cover the maximum area considered for lease upto 42m depth.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough Stone (Charnockite) deposit has been prepared in the scale of 1:1000 (please refer the Geological plan and sections Plate No. III). As the sale of Rough stone are in terms of cubic metres (Volume) only and not in terms of tonnage. No Exploration has been carried out.

**Estimation of Geological Resources (Plate No. III):**

The Geological Resources of Rough Stone and Gravel are calculated upto a depth of 42m [2m Gravel + 40m Rough stone] below ground level. The total geological resources are estimated after depleting the existing pit and the inferred resources are given table below:

TABLE - 3

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Geological Resources in Rough stone (m <sup>3</sup> )	Gravel (m <sup>3</sup> )
XY-AB	i	38	89	2	-	6764
	ii	38	89	5	16910	-
	iii	38	89	5	16910	-
	iv	38	89	5	16910	-
	v	38	89	5	16910	-
	vi	38	89	5	16910	-
	vii	38	89	5	16910	-
	viii	38	89	5	16910	-
	ix	38	89	5	16910	-
<b>Total</b>					<b>135280</b>	<b>6764</b>
XY-CD	i	61	13	2	-	1586
	ii	61	13	5	3965	-
	iii	61	13	5	3965	-
	iv	61	13	4	3172	-
		61	89	1	5429	-
	v	61	89	5	27145	-
	vi	61	89	5	27145	-
	vii	61	89	5	27145	-
	viii	61	89	5	27145	-
ix	61	89	5	27145	-	
<b>Total</b>					<b>152256</b>	<b>1586</b>
XY-EF	i	38	6	2	-	46
	ii	38	6	5	49	-
	iii	38	6	5	49	-
	iv	38	21	5	64	-
		38	21	1	60	-
	v	38	89	4	13528	-
		38	89	5	16910	-
	vi	38	89	5	16910	-
	vii	38	89	5	16910	-
viii	38	89	5	16910	-	
ix	38	89	5	16910	-	
<b>Total</b>					<b>81390</b>	<b>46</b>
<b>Grand Total</b>					<b>368926</b>	<b>8396</b>

The Geological Resources of Gravel : 8,396m<sup>3</sup>

The Geological Resources of Rough Stone : 3,68,926m<sup>3</sup>

Geological Resources has been computed based on the physical investigation and filed survey data.

**Estimation of Mineable Reserves:**

The mineable reserves are calculated after leaving the safety distance and Bench loss.

TABLE - 4

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Mineable Reserves of Rough stone (m <sup>3</sup> )	Gravel (m <sup>3</sup> )
XY-AB	i	29	72	2	-	4176
	ii	26	66	5	8580	-
	iii	21	56	5	5880	-
	iv	16	46	5	3680	-
	v	11	36	5	1980	-
	vi	6	26	5	780	-
	vii	1	16	5	80	-
<b>Total</b>					<b>20980</b>	<b>4176</b>
XY-CD	iv	61	55	1	3355	-
	v	61	55	5	16775	-
	vi	61	45	5	13725	-
	vii	61	35	5	10675	-
	viii	57	25	5	7125	-
	ix	52	15	5	3900	-
<b>Total</b>					<b>55555</b>	-
XY-EF	v	28	58	4	6496	-
	vi	23	48	5	5520	-
	vii	18	38	5	3420	-
	viii	13	28	5	1820	-
	ix	8	18	5	720	-
<b>Total</b>					<b>17976</b>	-
<b>Grand Total</b>					<b>94511</b>	<b>4176</b>

The mineable reserves have been computed as **94,511m<sup>3</sup>** of Rough Stone at the rate of 100% recovery and **4,176m<sup>3</sup>** of Gravel for a period of five years upto a depth of 42m below ground level.

**5.0 MINING****5.1. Method of mining (opencast / underground):**

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height.

However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 106 (2) (b) is available with Director General of Mines Safety. If the applicant/lessee intends to modify the dimensions of benches, relaxation and permission are available with Director General of Mines Safety under 106 (2) (b) of Metalliferous Mines Regulations, 1961. In such a scenario if there is any drastic change in the Resources and Reserves a modified plan will be submitted to the concerned authority for necessary relaxation, clearance and permission. The relaxation will be applied and obtained after the execution of lease deed / commencement of quarry operation.

**5.2. Mode of working (mechanized/ manual):**

The Rough Stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves shallow jack hammer drilling, slurry explosives in blasting, excavation, Loading and transportation of Rough stone to the needy crusher.

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 shallow jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

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 mechanized method of mining.

**5.3. Proposed Bench Height and Width:**

The bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height. After obtaining relaxation as per 106 2(b) of Metalliferous Mines Regulations, 1961 from the DMS, the realignment of benches will be carried out.

**5.4. Indicate the overburden / mineral production expected pit wise as detailed below (composite plan and section showing pit layout, dumps, disposal of waste if any etc.):**

The overburden in the form of Gravel, the Gravel will be directly loaded into Tippers for the filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fee to the Government. The excavated rough stone will be directly loaded into Tippers to the needy customers. The Composite year wise Development and production plan and sections indicating the pit lay out and green belt development are shown in Plate No. III.

**Year wise Development and Production**

TABLE - 5

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Recoverable Reserves in Rough stone (m <sup>3</sup> )	Gravel (m <sup>3</sup> )
I	XY-AB	i	29	72	2	-	4176
		ii	26	66	5	8580	-
		iii	21	56	5	5880	-
		iv	16	46	5	3680	-
	<b>Total</b>						<b>18140</b>
II	XY-AB	v	11	36	5	1980	-
		vi	6	26	5	780	-
	XY-CD	iv	35	55	1	1925	-
		v	30	55	5	8250	-
		vi	25	45	5	5625	-
	<b>Total</b>						<b>18560</b>



III	XY-CD	iv	26	55	1	1430	
		v	31	55	5	8525	
		vi	36	45	5	8100	-
	XY-EF	v	5	58	4	1160	-
	<b>Total</b>						<b>19215</b>
IV	XY-EF	v	23	58	4	5336	-
		vi	23	48	5	5520	-
		vii	18	38	5	3420	-
	XY-CD	vii	30	35	5	5250	-
	<b>Total</b>						<b>19526</b>
V	XY-CD	vii	31	35	5	5425	-
		viii	57	25	5	7125	-
		ix	52	15	5	3900	-
	XY-AB	vii	1	16	5	80	-
	XY-EF	viii	13	28	5	1820	-
		ix	8	18	5	720	-
	<b>Total</b>						<b>19070</b>
<b>Grand Total</b>						<b>94511</b>	<b>4176</b>

The Recoverable reserves have been computed as **94,511m<sup>3</sup>** of Rough stone at 100% recovery for five years and **4,176m<sup>3</sup>** of Gravel for first year upto a depth of 42m below ground level (R.L.279m to R.L.237m) (Refer Plate No. III). The peak production capacity in the quarry is 19,526m<sup>3</sup> of Rough stone on 4<sup>th</sup> year and the proposed production schedule is arrived as per applicant's requirement.

The applicant ensures the total quantity proposed in the benches will not exceed during the quarrying operation. Besides the rough stone locked up in benches will be exploited after obtaining necessary permission from the office of Director of Mine Safety, Chennai region by submitting relevant documents, appropriate safety plans and its Mitigation measures.

One lorry load	=	6m <sup>3</sup> (approx.)
Total No of Working days	=	300 Days per year
Total quantity to be removed during the five years plan period	=	94,511m <sup>3</sup>
Peak production capacity during the 4 <sup>th</sup> year	=	19,526m <sup>3</sup>
Hence total Lorry loads per day	=	19,526m <sup>3</sup> /6m <sup>3</sup>
	=	3,254 Lorry loads
	=	3,254/300 days
Rough Stone	=	<b>11 Lorry loads per day</b>
Total Gravel to be removed during the first year	=	4,176m <sup>3</sup>
Peak production capacity during the 1 <sup>st</sup> year	=	4,176m <sup>3</sup>





Hence total Lorry loads per day	=	4,176m <sup>3</sup> /6m <sup>3</sup>
	=	696 Lorry loads
	=	696 /300 days
Gravel	=	<b>2 Lorry loads per day</b>

Working hours = 9.00 am to 6.00 pm (with 1.00-2.00 P.M. lunch break)

### 5.5. Machineries to be used:

#### For Mining:

The following machineries are utilized on rental basis for the development and production work at this quarry.

TABLE – 6

#### I. DRILLING MACHINE:

S. No.	Type	Nos	Dia Hole mm	Size Capacity	Motive power
1	Jack-Hammer	3	32	1.2m to 2.0m	Compressed air
2	Compressor	1	-	400 psi	Diesel Drive

#### II. EXCAVATION & LOADING EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Excavator with Bucket and Rock Breaker	1	300	Diesel Drive

#### III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Tippers	2	20 tonnes	Diesel Drive
2	Water Sprinkler	1	4000 ltrs	Diesel Drive

### 5.6. Disposal of Overburden/Waste:

There is no Waste anticipated during this plan period hence, disposal of waste does not arise. The overburden in the form of Gravel, the Gravel will be directly loaded into Tippers for the filling and levelling of low-lying areas. The excavated rough stone (100%) will be directly loaded into Tippers to the needy customers.

### 5.7. Use of the Mineral:

The excavated rough stone (100%) will be directly loaded into Tippers as raw form to the needy nearby crushing unit to making Road metals and construction materials.



**5.8. Brief note on conceptual mining plan for the entire lease period based on the geological, mining and environmental considerations:**

Conceptual mining plan is prepared with an object of long-term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc.,

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.,

As the applicant has applied quarry lease for five years, the ultimate pit limit (dimension) at the end of this mining plan period is given below:

TABLE - 7

Length (m) (Max.)	Width (m) (Avg.)	Depth (m) (Max.)
128	84	42m below ground level (R.L. 279m – R.L. 237m)

All the base line information studies like Air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out every year as per the MoEF & CC Norms. Please refer Plate Nos. III & IV. As per the NGT orders the applicant is directed to plant 500 trees per hectares along the quarry site and in the haul road either at the regular or the phased manner by planting native species.

There is no waste anticipated during the entire life of quarry. Hence, backfilling is not possible in this Rough stone quarry. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for Green belt development purpose. The quarry area will be fenced with barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle (Refer Plate No. IV and V).

**6.0 BLASTING**

**6.1 Blasting pattern:**

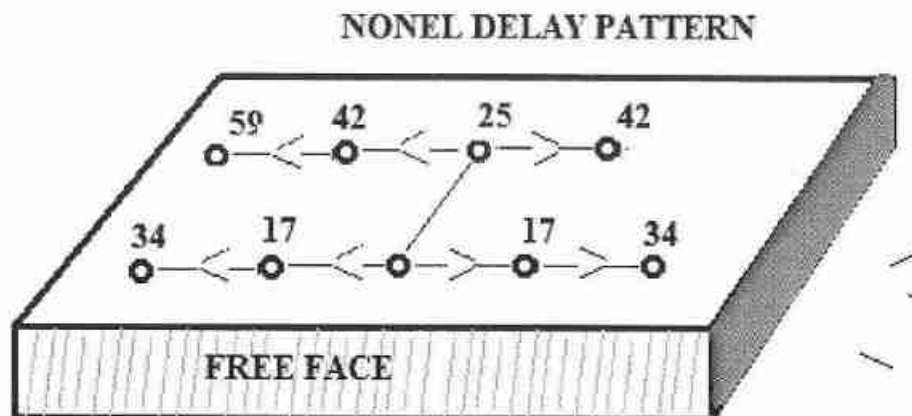
The quarrying operation is proposed to be carried out by Mechanized Opencast Method in conjunction with conventional method of mining using shallow Jack hammer drilling and mild blasting with NONEL initiation of shattering effect for loosening the Rough stone. Nonel initiation provides a reasonably good solution to the fly rock problem. The main objectives of Nonel Blasting are to reduce the ground vibration, noise, fly rocks generated due to blasting operations. The overall cost of blasting in NONEL is very less compared to electrical blasting and hence it optimizes the cost of blasting.



Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.6m
Spacing between holes	:	1.2m
Burden for hole	:	1.0m
Diameter of hole	:	32mm
Pattern of hole	:	Staggered pattern
Inclination of holes	:	80° from horizontal
Use of delay detonators	:	NONEL
Hole to Hole	:	17 milli second delay
Row to Row	:	25 milli second delay

**BLASTING PATTERN DRAWING**



Spacing	=	1.2m
Burden	=	1.0m
Depth of the hole	=	1.6m
No of holes proposed per day (Peak Production)	=	68 Holes

**6.2 Type of explosives to be used:**

Small Dia. 25mm Slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or secondary blasting is proposed. NONEL blasting and muffle blasting may be adopted after permission from DGMS.



### 6.3 Measures proposed to minimize ground vibration due to blasting:

The quarry is situated more than 300m away from the nearby villages. Controlled blasting measures of NONEL initiation is being adopted for minimizing ground vibration and fly rock.

Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give heaving effect in rough stone for easy excavation and to control fly rock.

#### NONEL Delay detonators:

Delay blasting (millisecond delays) permits to divide the shot into smaller charges, which are detonated in a predetermined millisecond sequence at specific time intervals.

The major advantages of delay blasting are:

- Reduction of ground vibration.
- Reduction in air blast.
- Reduction in over break.
- Improved fragmentation.
- Better control of fly-rock.

#### Blasting program for the production per day (As per Peak production capacity):

Peak production (4 <sup>th</sup> Year)	= 19,526m <sup>3</sup> x 2.6(Bulk Density) = 50,768 Tons
No. of Holes Blasted per day	= 68 Holes
Yield	= 170 Tons
Powder factor	= 5 Tons/Kg of explosives
Total explosive required	= 34 Kg-Slurry explosives
Charge/ hole	= 0.5 Kg
Blasting at day time only	= 1.00 – 1.30 P.M. (whenever required)

#### Anticipated theoretical calculation of PPV

The empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K [R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

**TABLE 8: PREDICTED PPV VALUES DUE TO BLASTING**

Maximum Charge per day (kg)	Number of Round Blast per day	Number of holes blasted per round	Number of holes blasted per day	Nearest Infrastructure (m)	PPV (mm/s)
34	1	68	68	380	0.626

If the blasting would be carried out by 68 holes in a single round the PPV is 0.626. From the above table, the charge per blast of 34kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. Anyhow, the applicant ensures that carry out the blasting thrice a day under the supervision of competent qualified statutory personnel employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

#### 6.4 Storage and safety measures to be taken while blasting:

The applicant will engage authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/Permit Mines Manager. The explosives agencies should be having the valid Blaster certificate. He will blast holes in the quarry site. After the completion of Blasting the explosives Agencies will take it out back the remaining quantity of Explosives. The Competent Qualified Statutory personnel appointed by the applicant will maintain the records of Explosives as per the Indian Explosives Act.

#### 7.0 MINE DRAINAGE

##### 7.1 Depth of water table (based on nearby wells and water bodies):

The area is a plain topography; since the lease applied area consists the most common type of dendritic drainage pattern. The water table in the area is about 58-62m which is observed from the existing private boreholes. The lease area is fully covered by Massive Charnockite formation. The quarry operation confined to well above the water table hence, the Ground Water problem will not arise. If water seepage may occur due to the fracture, the same will be used for Greenbelt. Anyhow, Garland drain will be constructed all along the boundary to prevent surface run-off water entering into the quarry.

**TABLE - 9**

Type	Distance & Direction	Location
Bore Well	150m Southwest side	10°52'18.72"N 77°31'02.62"E

##### 7.2 Arrangements and places where the mine water is finally proposed to be discharged:

The quarry operations are confined to well above the water table during the entire lease period. If water is encountered at quarry due to rain water and seepage, the same will be pumped out by 5HP water pump and discharge to the Green belt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

**8.0 OTHER PERMANENT STRUCTURES (also shown in the map)**

TABLE – 10

S.No.	Description	Particulars	Aerial Distance & Direction															
1	Nearest National Highway	(NH-381) Tiruppur – Oddanchatram	5.8km – Southwest															
2	State Highways	(SH-83A) Kangayam - Dharapuram	1.0km – Northeast															
3	Railway station	Uttukuli Railway station	31.9km – Northwest															
4	Airport	Coimbatore Airport	55.0km – Northwest															
5	Nearest Habitation	780m - South																
6	Town	Kangayam	15.2 km – Northeast															
7	Nearest Government School	Mudalipalayam - Govt. Middle School	3.3km – Northeast															
8	Nearest Dispensary	Kangayam	15.2 km – Northeast															
9	Government Hospital	Kangayam	15.2 km – Northeast															
10	Reserved Forest	No Reserve Forest within 60m Radius. Nearest Reserve Forest is Udaiyur R.F. – 890m NW																
11	Defense Installation/Historical Monuments/ Archaeological	Nil within 500m radius.																
12	Nearby Water Bodies	Varattukarai Odai – 740m Southwest																
13	Interstate Boundary	Around 65.3 km – SW (Kerala State Boundary)																
14	Critically Polluted areas identified by the CPCB	Around 63.8 km – NW (Coimbatore – SIDCO)																
15	Protected areas Notified under wildlife (Protection) Act,1972	Around 43.5 km – NE (Vellode Birds Sanctuary)																
16	Applicability of CRZ, Notification 2011 as amended.	Not Applicable																
17	Applicability of Hill Area Conservation Authority (HACA) Clearance.	Not Applicable																
18	Housing area, EB line (HT & LT Line)	None of the above situated within 50m radius.																
19	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North - S.F.Nos. 986/B1(P) East - S.F.No. 986/B1(P) South - S.F.No. 986/B1(P) West - S.F.No. 986/B1(P)																
20	Adjacent Patta lands / Govt. Land	<table border="1"> <thead> <tr> <th>Direction</th> <th>Classification</th> <th>Safety Distance</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Patta land</td> <td>7.5m</td> </tr> <tr> <td>East</td> <td>Patta. land</td> <td>7.5m</td> </tr> <tr> <td>South</td> <td>Patta. land</td> <td>7.5m</td> </tr> <tr> <td>West</td> <td>Patta. land</td> <td>7.5m</td> </tr> </tbody> </table> (Refer Plate No. II):		Direction	Classification	Safety Distance	North	Patta land	7.5m	East	Patta. land	7.5m	South	Patta. land	7.5m	West	Patta. land	7.5m
Direction	Classification	Safety Distance																
North	Patta land	7.5m																
East	Patta. land	7.5m																
South	Patta. land	7.5m																
West	Patta. land	7.5m																



## STRUCTURE WITHIN 100m

Number of Structures - 2.

TABLE - 11

Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry/ residential/ farm house/ Govt. building	Occupants of Building/ Structure	Remarks
1	Thar plant	To Road project	Non residential	Nil	No resident
2	Wind Mill (1 Nos.)	Power Generation	Commercial	Nil	Nil

## STRUCTURE WITHIN 100 -200m

Number of Structures - 10

Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry/ residential / farm house / Govt. building	Occupants of Building/ Structure	Remarks
1	Shed (8Nos)	Labour shed and office	Non residential	No resident	Nil
2	Crusher Plant	Stone crusher	Industry	No resident	Nil
3	House(1Nos)	Farm House	Farm House	No resident	Nil

## STRUCTURE WITHIN 200 -300m

Number of Structures - Nil

Structure Numbers	Type of Structure	Usage Purpose	Commercial / industry/ residential / farm house / Govt. building	Occupants of Building/ Structure	Remarks
Nil					

## 9.0 EMPLOYMENT POTENTIAL &amp; WELFARE MEASURES

## 9.1 Employment potential (skilled, semi-skilled, un skilled):

TABLE - 12

Designation	Present Employment position	Employees Requirement	Total
<b>a) Supervisory category</b>			
Geologist	-	1	1
<b>b) Skilled Laboure</b>			
Mine Foreman	-	1	1
Blaster/Mate	-	1	1
Excavator - Operator	-	1	1
Tipper Drive	-	2	2
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	6	6
<b>c) Unskilled</b>			
Security	-	1	1
Laboure & Helper	-	2	2
Co-operator and Cleaner	-	4	4
<b>Total</b>	<b>-</b>	<b>20</b>	<b>20</b>



The proposed output per man shift:

TABLE – 13

Expected annual Production of ROM as per Peak Production	19,526m <sup>3</sup>
No. of days likely to be worked	300 days
Average ROM production per day	65m <sup>3</sup>
OMS = Average Production per day / Average employment per day	65m <sup>3</sup> /20 = 3.2m <sup>3</sup>

The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations. It is been ensured that the labour will not be employed less than 18 years, **No child labour** will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the quarry lease period.

## 9.2 Welfare Measures:

### a) Drinking Water:

Packaged drinking water is available from the nearby water vendors in Kundadam which is located about 8.1km on the Southwest side of the lease applied area.

### b) Sanitary Facilities:

Hygienic modern Sanitary Facilities will be constructed in the safety area as semi-permanent structure and it will be maintained periodically.

### c) First aid facility:

First aid kits are kept in Mines office room, in case of such eventuality is the victim will be given first aid immediately at the site by the competent and statutory foreman/permit manager/mate will be in charge of first aid and injured person will be taken to the hospital by the applicant's vehicle. Hospital is available in Kangayam located at a distance of 15.2km on the Northeast side.

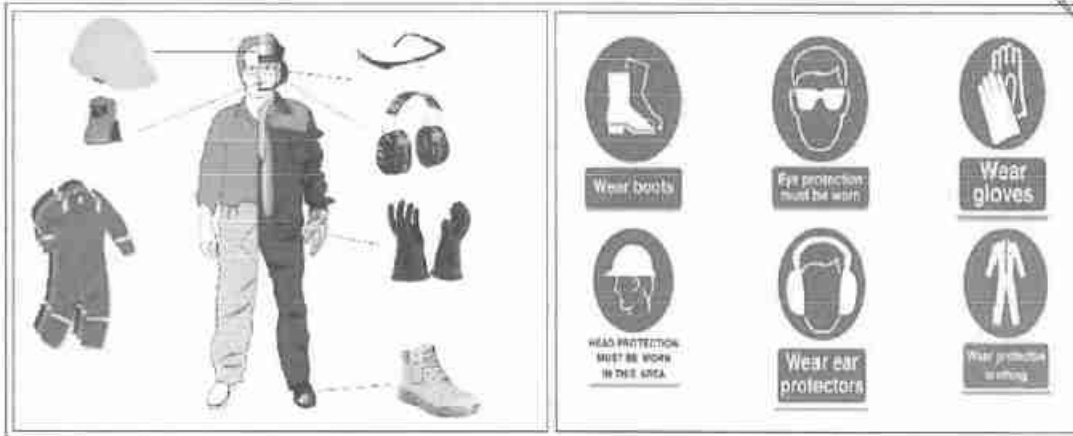
### d) Labour Health:

Periodically medical check-up related to occupational health safety will be conducted to all the workers in applicant own cost.





e) Precautionary safety measures to the labourers:



- Helmets,
- Reflector Jackets
- Dust mask
- Mine Goggles,
- Ear plugs,
- Ear muffs
- Safety Shoes

All personnel protective equipment as per the DGMS standard will be provided as per the specification approved by Director of mines safety. Periodically medical check-up will be conducted for all workers for any mine health related problems. Proper training and vocational education will be given by qualified and experienced safety officer to all the employees about the safety and systematic Rough stone quarrying operations. The drillers and workers will be sent for vocational training periodically, to carry out the quarrying operations scientifically and to safe guard the men and machinery and to create awareness about conventional opencast quarrying operations.

**PART – B****10.0 ENVIRONMENT MANAGEMENT PLAN**

The EMP is prepared based on the Mines act, Rules & amendment from by state & central government. If the SEIAA/SEAC instructed the modification and alter the EMP the outcome of their recon would be final and the applicant is instructed to follow the EIA / EMP for its compliance as per the CPCB / TNPCB Norms.

<b>Environment</b>	<b>Anticipated impact</b>	<b>Mitigation measure</b>
<b>Land Environment</b>	<p>i. Topography of the area will change due to mining activity. Around 1.00.6 Ha. area will be proposed to quarry operation.</p>	<p>i. No waste will be anticipated during entire life of quarry. Hence, backfilling is not proposed in this quarry operation. Anyhow, barbed wire fencing and safety bund will be constructed around the quarry to prevent inadvertent entry of public and cattle.</p> <p>ii. The excavated benches shall be developed for plantation with grasses, herbs and shrubs of local species to improve aesthetic of the area and to prevent any soil erosion and landslide.</p> <p>iii. Mining benches will not exceed beyond the approved height and width.</p> <p>iv. Leftover foreign material like polythene bag, jute bag and useless articles will not be allowed to litter and no ill managed dumping will be used for filling the excavated pits</p>
	<p>ii. Soil quality and it's fertility of adjacent lands will affected due to fugitive dust and Vehicular emissions during drilling, blasting, loading, unloading and haulage of men and machineries.</p>	<p>This is discussed in following Air Environment due to avoid repetition.</p>



<p><b>Water Environment</b></p>	<p>Surface Mining can have direct impact on physico-chemical characteristics of the local drainage and groundwater resources. The detrimental effects, if any, to water resources resulting from surface mining are caused by following:</p> <ol style="list-style-type: none"> <li>Alteration of natural drainage pattern resulting from modification of topography.</li> <li>Abnormal increase in the turbidity of the nearby water bodies.</li> <li>Damage to riparian vegetation and in-stream habitat.</li> <li>The activities can also disrupt the ecological diversity in many ways.</li> <li>Contamination of groundwater if mining intersects with the water table.</li> </ol>	<ol style="list-style-type: none"> <li>Construction of Garland drain with check dam and settling tank will be constructed around the quarry to collect the surface run off rain water and which will be discharge in to the natural drainage system and water bodies in manure as prescribed by TNPCB standards.</li> <li>Further mining will be completely stopped during the monsoon for free flow of surface run off and allowing natural recharge of groundwater.</li> <li>No wastewater shall be generated from the quarry activity. Proper drainage will be Maintained to eliminate inundation of working pits during rains from run-off water.</li> <li>The mine pit water collected due to rains will be utilized for water spraying on the haul Roads and watering for plantations.</li> <li>Septic tanks and soak pits will be provided for the disposal of domestic/washroom effluents.</li> <li>The deposit will be worked from the top surface up to a depth of 42m below ground level and shall not in any case intersect and contaminate the ground water as the depth of the water table in the area is 58 - 62meters.</li> </ol>
<p><b>Air Environment</b></p>	<p>In surface mining operations, the source of air pollution may cause deterioration of air quality due to the fugitive dust emissions from drilling/blasting, scooping, loading-unloading operation of extracted mineral and its transportation. Drilling/blasting and loading of quarry material would be associated with the fugitive dust emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to the road side.</p>	<ol style="list-style-type: none"> <li>Green belt will be developed in the safety zone with thick long leaves plant to arrest the fugitive dust and vehicular emissions on the surrounding environments.</li> <li>Wet drilling with dust extractor unit will be carried out to minimize the dust generation.</li> <li>Controlled blasting with Proper blasting pattern will be followed for effective rock fragmentation and generation of minimal fine dust to the atmosphere.</li> <li>Quarry material will be handled under wet condition during loading and unloading to minimize the dust generation of proposition, besides loaded materials are covered by Tarpaulin until to reach the destination during transportation.</li> </ol>



	Another source of air pollution would be emission from the drilling machinery and excavators/tippers vehicles to be used for loading.	<p>v. Regular water sprinkling to the haul road to arrest the dust generation.</p> <p>vi. Provision of dust filters/ mask to workers working at dust prone and affected areas.</p> <p>vii. Vehicular emission as a result of combustion of diesel generates small particulate matter (PM<sub>10</sub> &amp; PM<sub>2.5</sub>), Nitrogen oxides and Sulphur dioxide (NO<sub>2</sub> &amp; SO<sub>2</sub>). High quality diesel will be used in the motor vehicles to control these pollutants.</p> <p>viii. PUC (Pollution under control) certified vehicles will be used for transportation.</p> <p>ix. CPCB Prescribed emission standards for the vehicles would be followed.</p> <p>x. All vehicles and their exhausts would be well maintained and regularly tested for pollutant concentrations.</p>
<p><b>Noise Environment</b></p>	<p>In the present mining activity for building material, noise will be generated from drilling machinery, blasting and vehicular movement. Noise level in the working environment is compared with the standards prescribed by Central Pollution Control Board as adopted and enforced by the Govt. of India through Noise Pollution (Regulation and Control) Rules, 2000.</p>	<p>i. Selection of new low – noise equipments for the quarry operation.</p> <p>ii. The noise levels shall be maintained within the permissible levels by involving all the noise regulating measures in vehicles and drilling/blasting operations.</p> <p>iii. To ensure minimum vibrations and noise due to blasting, Non-electric delay detonators in continuous sequence is proposed.</p> <p>iv. <b>Personnel Protective Equipment (PPE) like earmuffs and earplugs shall be provided to the employees whose in critical operation like drilling, blasting and excavation as occupational safety measures.</b></p> <p>v. Proper maintenance done with regular interval by the Oiling and greasing for the machineries and vehicles to control the Source of noise during operation and transportation.</p> <p>vi. Regular and proper maintenance of machinery and transportation vehicles shall be ensured.</p> <p>vii. Transporting vehicles are enforcing the speed limits of 20km/hour within quarry area and not exceed 40km per hour from quarry to destination to reduce Noise and vibration level.</p> <p>viii. There would be restrictions on mining activity and vehicular movement during night hours.</p>

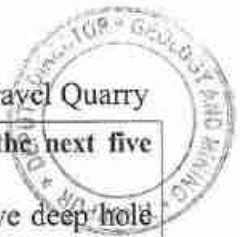


<b>Biological Environment</b>	<p>The area having main floras are Neem, Indian jujube, Cocos nucifera, Palm, Senna auriculata, Calotropis, Casuarina, Teak, Acacia nilotica and shrubs. No plants of botanical interest or animals of zoological interest recorded within 500m radius. The anticipated impacts on biological environment as follows:</p> <ol style="list-style-type: none"> <li>Diversity of living insects in the overburden material.</li> <li>Natural habitats of the existing faunas and its breeding will change due to the noise and vibration during operation.</li> <li>Mining may drive away the nearby residents from their habitat.</li> <li>Access roads crossing the riparian areas will have impact on the species disturbing the ecosystem.</li> <li>Diminution of the quality and quantity of habitat essential for aquatic and riparian species</li> <li>Deposition of dust on the plant and crop leaves is affecting the photosynthesis, Pollination, ratio of growth and reduction in the yield of agriculture.</li> <li>Excessive and unscientific surface mining results in the destruction of aquatic and riparian habitat through large changes in the channel morphology.</li> </ol>	<ol style="list-style-type: none"> <li>The natural habitats of the existing flora and fauna will not be disturbed.</li> <li>No mining will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season for many species.</li> <li>Fruit bearing trees will be planted to survive of the existing native faunas.</li> <li>No clearance of vegetation will be done during the entire mining operations.</li> <li>Water sprinkling on haul roads would be reduces the dust emission, thus avoiding damage to the crops and plants.</li> <li>No night hour mining will be carried out which may catch the attention of wildlife.</li> </ol>
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<p><b>Socio Economic Environment</b></p>	<p>- Any activity during mining will have adverse impact on Environment, careful mitigation measures are proposed to balance the impact on the existing environment and the applicant is always instruct to carry out safe, sustainable, eco-friendly mining operations at all times. The following positive impact on the society due to this mining activity.</p> <ol style="list-style-type: none"> <li>i. More than 10 local peoples getting direct employment and More than 15 peoples are getting indirect employment due to this developmental project.</li> <li>ii. The continuation of opportunity for the employments, the nearby villages, living peoples and their life style would be improved.</li> <li>iii. The applicant is advised to invest the CER cost (@ 2% from the total Project Cost) to develop the local Panchayat.</li> </ol> <p>Does not arise.</p>
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**10.1 Environmental impact assessment statement describing impact of mining on the next five years:**

In the mining plan proposed for a production of Rough stone does not involve deep hole drilling and blasting. Such limited mining activity is not likely to cause any impact adversely on the environment. As far as pollution of air, water and noise concerned, the environmental impact studies will be conducted as per EIA notification issued by MoEF& CC. It is B Category mine. The estimated budget would be around **Rs.3,80,000/-**. The compliance monitoring will be carried out for every six months as prescribed by the MOEF&CC and with state concerned authorities.

**10.2 Proposal for waste management:**

There is no waste anticipated in this Rough stone and Gravel quarrying operation. The entire quarried out materials will be utilized (100%). The maintenance of machineries & fuelling will be carried out as per the TNPCB Norms and the waste will be disposed in the Norms.

**10.3 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):**

In the mining plan only to a maximum depth of 42m below ground level has been envisaged as workable depth for safe & economic quarrying operation during entire life of quarry. There is no waste generated hence, backfilling is not possible. After completion of quarry operation the quarried out pit will be allowed to collect the seepage and rainwater and the water storage will be kept as temporary reservoir for charging the nearby wells and the water will be utilized for Green belt development purpose. The quarry area will be fenced with Barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle.

**10.4 Programme of Greenbelt development (indicate extend, number, name of species to be afforested):**

The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development. Around 1390m<sup>2</sup> area will be utilized for green belt development by planting 200 numbers along the safety zone during entire lease period also around 200 tree saplings in the approach road at first year of the plan period and 150 tree saplings from third year onwards in quarried out top benches with 2m height tree saplings with an anticipated survival rate of 80% with maintain atleast 450 plants during the entire life of the quarry.

As per the SEIAA Recommendation the plantation will be carried out based on the output Environmental Clearance and the recommended species will be carried out for green belt development. Appropriate species of trees will be planted in a phased manner as described below.

TABLE - 14

Year	No. of tress proposed	Area to be covered (m <sup>2</sup> )	Name of the species	No. of trees expected to be grown
I	40	278	Neem, Pongamia	80
II	40	278	Pinnata, Cordia	80
III	40	278	dichotoma, Mango,	80
IV	40	278	Thespesia populnea,	80
V	40	278	Mantharai, etc.,	80

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

Budget Provision for the Mining Plan period:

TABLE - 15

S. No	Monitory and Analysis Description	Rate per location	No. of location	Total Charges/ six months	Total Charges/ year
1	Ambient air quality monitoring	6500	4	26000	52000
2	Noise level monitoring	250	4	1000	2000
3	Ground vibration monitoring	1000	2	2000	4000
4	Water sampling and analysis	9000	1	9000	18000
<b>Total EMP Cost/ year</b>					<b>76,000</b>

The EMP cost would be around Rs. 3,80,000/- for the period of five years.





A. Operational Cost / Project Cost / Investment:		Cost (Rs.)												
i) Land cost	<p>The Land value as per the Government Guideline land cost is about,</p> <table border="1"> <thead> <tr> <th>S.F.No.</th> <th>Extent (Ha.)</th> <th>Cost/Ha. (Rs.)</th> <th>Cost of the area (Rs.)</th> </tr> </thead> <tbody> <tr> <td>986/B1</td> <td>1.21.46</td> <td>618000</td> <td>7,50,623</td> </tr> <tr> <td><b>Total</b></td> <td><b>1.21.46</b></td> <td><b>-</b></td> <td><b>7,50,623</b></td> </tr> </tbody> </table> <p>Round of Rs.7,51,000/- (Source: <a href="https://tnreginet.gov.in/portal/">https://tnreginet.gov.in/portal/</a>)</p>	S.F.No.	Extent (Ha.)	Cost/Ha. (Rs.)	Cost of the area (Rs.)	986/B1	1.21.46	618000	7,50,623	<b>Total</b>	<b>1.21.46</b>	<b>-</b>	<b>7,50,623</b>	7,51,000
S.F.No.	Extent (Ha.)	Cost/Ha. (Rs.)	Cost of the area (Rs.)											
986/B1	1.21.46	618000	7,50,623											
<b>Total</b>	<b>1.21.46</b>	<b>-</b>	<b>7,50,623</b>											
ii) Machinery cost	<p>The following machineries are proposed on rental basis to meet out the productions. The rental cost would be around (Including Fuel, oil, grease, spares, etc.,)</p>	20,00,000												
iii) Refilling/ Fencing	<p>Fencing will be constructed around the quarry pit to prevent the inadvertent entry of public and cattle cost would be around (Total Peripheral length 220m x Rs. 300/meter)</p>	66,000												
iv) Labourers shed	<p>Labour shed will be constructed as semi-permanent structure. The cost is around</p>	3,00,000												
v) Sanitary facility	<p>Adequate latrine and urinal accommodation has provided at conveniently accessible places the cost would be around</p>	80,000												
vi) Others items	<p>First aid room &amp; accessories</p>	50,000												
vii) Drinking water facility for the labourers	<p>Packaged drinking water will be provided for all the Labours. Drinking water will be readily available at conveniently accessible points during the whole of the working shift the cost would be around.</p>	1,00,000												
viii) Sanitary arrangement	<p>The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.</p>	50,000												
ix) Safety kit	<p>All the Safety kit such as Helmet, Earmuffs, Goggles, Reflector Jackets, Safety shoes etc., will be provided to the workers by the applicant own cost which would be around.</p>	50,000												
x) Water sprinkling	<p>Water will be sprinkled in the haul roads by water sprinkler. The cost would be around.</p>	1,00,000												
xi) Garland	<p>Construction of garland drains to divert surface run-off</p>	60,000												



drains	from virgin area away from quarrying area.	
xii) Greenbelt etc.	Greenbelt development and maintenance will be carried out in the boundary barriers the cost would be around (200 saplings x Rs. 200/sapling).	40,000
	Greenbelt development and maintenance will be carried out in the quarried out top benches (150 saplings x Rs. 200/sapling).	30,000
	Greenbelt development and maintenance will be carried out in the Panchayat road (200 saplings x Rs. 200/sapling).	40,000
<b>Total Cost</b>		<b>37,17,000</b>

<b>B. EMP Cost: (Per year)</b>	
Air Quality monitoring	Rs. 52,000/-
Water Quality Sampling	Rs. 18,000/-
Noise Monitoring	Rs. 2,000/-
Ground vibration test	Rs. 4,000/-
<b>Total Cost</b>	<b>Rs. 76,000/-</b>
Total EMP Cost for the five years period is <b>Rs.3,80,000/-</b>	
<b>Description</b>	<b>Amount (Rs.)</b>
<b>A. Operational Cost</b>	<b>Rs. 37,17,000/-</b>
<b>B. EMP Cost</b>	<b>Rs.3,80,000/-</b>
<b>Total Project Cost (A+ B)</b>	<b>Rs.40,97,000/-</b>
The applicant intends to involve corporate environment responsibilities (CER) activity like Water Purifier, Plantation, Books to Library, sanitary facility and as per requirement to the Mudalipalayam Government School at 2.0% from the total project cost. The Cost would be around <b>Rs.82,000/-</b> . If the concerned authority is directed to modify the CER cost and mode of utilization of the cost, the same will be implemented by the applicant.	<b>Rs. 82,000/-</b>
<b>Total Cost</b>	<b>Rs.41,79,000/-</b>
The Total cost would be around forty one lakh and seventy nine thousand only.	



## 11.0 PROGRESSIVE QUARRY CLOSURE PLAN

### 11.1 Introduction:

The entire area is proposed for a short period of 5 years only hence, the progressive quarry closure plan may not be applicable to this quarry. Anyhow, during temporary discontinuance of quarry the following measures will be taken.

- Barbed wire fencing will be constructed around the quarry.
- Benches will be smoothening.
- Quarry will be closed & sentries will be posted round the clock.
- Green belt development will be maintained.
- Machineries will be removed from pit and engaged in another site.

### 11.2 Present and Post Land use pattern:

LAND USE TABLE – 16

Description	Present area (Ha)	Area at the end of lease period (Ha)
Area Under Quarry	0.75.7	1.00.6
Site Services	Nil	0.01.0
Roads	0.01.0	0.02.0
Green Belt	Nil	0.13.9
Unutilized Area	0.44.7	0.03.9
<b>Grand Total</b>	<b>1.21.4</b>	<b>1.21.4</b>

### 11.3 Statutory obligations:

The applicant ensures to comply all the conditions stipulated in the precise area communication letter before grant of quarry lease and during the course of quarry operations as per the DGMS, Department of Geology and Mines, Labour Enforcement officer, controller of Explosives etc., circulars, Norms, Rules, Regulations and Act.

### 11.4 Progressive quarry closure plan preparation:

Name and address of the Qualified Person who prepared the progressive closure plan and name, address and register number of the executing agency who is involved in the Preparation of progressive quarry closure plan.

Name : **M. Santhoshkumar, M.Sc.,**  
 Qualified Person (Under Rule 15(I)(a) and (I)(b) of MCR, 2016)

Address : Plot No.3, Kattuvattam, Kothukara Samathi Via,  
 Kannakurichi,  
 Salem – 636 008.

State with PIN Code : Tamil Nadu – 636 008.

Mobile : +91 97914 41745

Email : [santoshgeo2004@gmail.com](mailto:santoshgeo2004@gmail.com)

The applicant will himself implement the closure plan; no outside agency will be involved.

**(i) Safety & Security:**

Safety measures will be implemented to prevent access in the excavation area an unauthorized persons as per Mine Act 1952, MMR 1961.

- Safety measures will be implemented as per Mine Act 1952, MMR 1961, and Mines Rules 1955.
- Provisions of MMR 1961 shall be strictly followed and all roads shall be wider than the height of the bench or equal to the height of the bench and have a gradient of not more than 1 in 16.
- The bench height will be 5.0m.
- Width of working bench will be kept about 5.0 m for ease of operations and provide sufficient room for the movement of equipments.
- Protective equipment like dust masks, ear-plugs/ muffs and other equipments shall be provided for use by the work persons.
- Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- Danger signs shall be displayed near the excavations and proper signal by siren alarm will be given to the public before blasting to prevent accident.
- Security guards will be posted.
- In the event of temporary closer, approaches will be fenced off and notice displayed.
- Installation of CCTV cameras in the quarry and entrance of the quarry.
- Monitoring of Quarrying operation by external agency as directed by authorities.

**(ii) Disaster Management and Risk Assessment:**

This should deal with action plan for high risk accidents like landslides, subsidence, flood, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of applicant to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the area may involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, TNMMCR 1959 and other laws applicable to mine will be strictly complied with.
- During heavy rainfall the mining activities will be suspended.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.
- The Greenbelt Development will be formed in around the quarried out top benches and panchayat road of the lease applied area.

**Environmental Monitoring Cell:**

A dedicated team nominated by the mine manager or Agent will monitor and maintain the environmental compliances of the quarry as per the approved Environment Management Plan and report the Compliance to the Mine Manager half yearly.

**Disaster Management Cell:**

The Competent Qualified Statutory managers appointed by the applicant as per the Director of Mines Safety will be responsible for Disaster Management. It care any eventualities his mobile number will be displayed and he will take all the precautions and safety measures as per Mines and Minerals (Development and Regulations) Act, 1957.

**(iii) Disposal of mining machinery**

All the Machineries will be engaged on rental basis, the same has been maintained in good condition during entire life of quarry. Hence, disposal or decommissioning of mining machinery does not arise

**(iv) Care and Maintenance during Temporary Discontinuance:**

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:
  - Quarry roads and approach roads,
  - Fencing on approach roads,
  - Checking and maintenance of machines and equipment,
  - Drinking water arrangements,
  - Quarry office, first aid stations etc.
- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

**(v) Economic Repercussion of Closure of Quarry and manpower Retrenchments:**

The quarry lease is granted for a period of five years only. As per the production Programme envisaged, there will be no effect on the man power as the majority of persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.

**(vi) Abandonment Cost:**

As at present mining is not going to be closed so abandonment cost could not be assessed. However, based on the progressive quarry closure activities during the plan period, cost is assessed as given below at present scenario:

LAND USE TABLE – 17

ACTIVITY		YEARS					RATE	COST (Rs.)
		I	II	III	IV	V		
Plantation under safety zone	Nos	40	40	40	40	40	@200 Rs Per sapling	40,000
	Cost	8000	8000	8000	8000	8000		
Plantation in quarried out top benches	Nos	-	-	50	50	50		30,000
	Cost	-	-	10000	10000	10000		
Plantation in approach road	Nos	200	-	-	-	-		
	Cost	40,000	-	-	-	-		
Barbed Wire Fencing (In Mtrs) 220 Mtrs		66,000	-	-	-	-	@300 Rs Per Meter	66,000
Garland Drain (In Mtrs) 200 Mtrs		60,000	-	-	-	-	@300 Rs Per Meter	60,000
<b>TOTAL</b>								<b>2,36,000</b>

**12.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT**

This Mining plan for Rough stone (Charnockite) and Gravel is under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959. The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied within the quarrying operation, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety. Any violation pointed out by the inspecting authorities shall be rectified and modified after scrutiny comments as per the guidelines of the Concerned Department and Authorities.

This Mining Plan and mine design is prepared based on the requirement instructed by the applicant to me. If there is any change in the production schedule, change of technology, change in product mix during the course of operations, the applicant is advice to prepare a modified mining plan and get approval by the concerned authority for subsequent clearance and approval. The same will be monitored by the inspecting authority of Department of Geology and mining and other Concerned Departments under Rule 25 and sub rule (5)(d) in Rule 36 of Tamil Nadu Minor Mineral Concession Rules, 1959.

I hereby ensure that the information provided is correct to best of my knowledge and experience, some of the information contained in this report has been provided by external sources and by the applicant and is presented as the form as submitted by the applicant. The information is not intended to serve as legal advice related to the individual situation. I do not owe and specifically disclaim any liability resulting from the use during the course of quarrying operations after the grant of lease. The document may be scrutinized by the competent authority before approval.

Prepared by

*M. Santhosh Kumar*  
M.Santhoshkumar, M.Sc.,

Qualified Person

Place: Salem

Date: 19.02.2024

This Mining Plan is approved subject  
to the Conditions Indicated in the  
Mining Plan approved Letter  
No. 112/mine3/2023  
Dated 17.3.2024

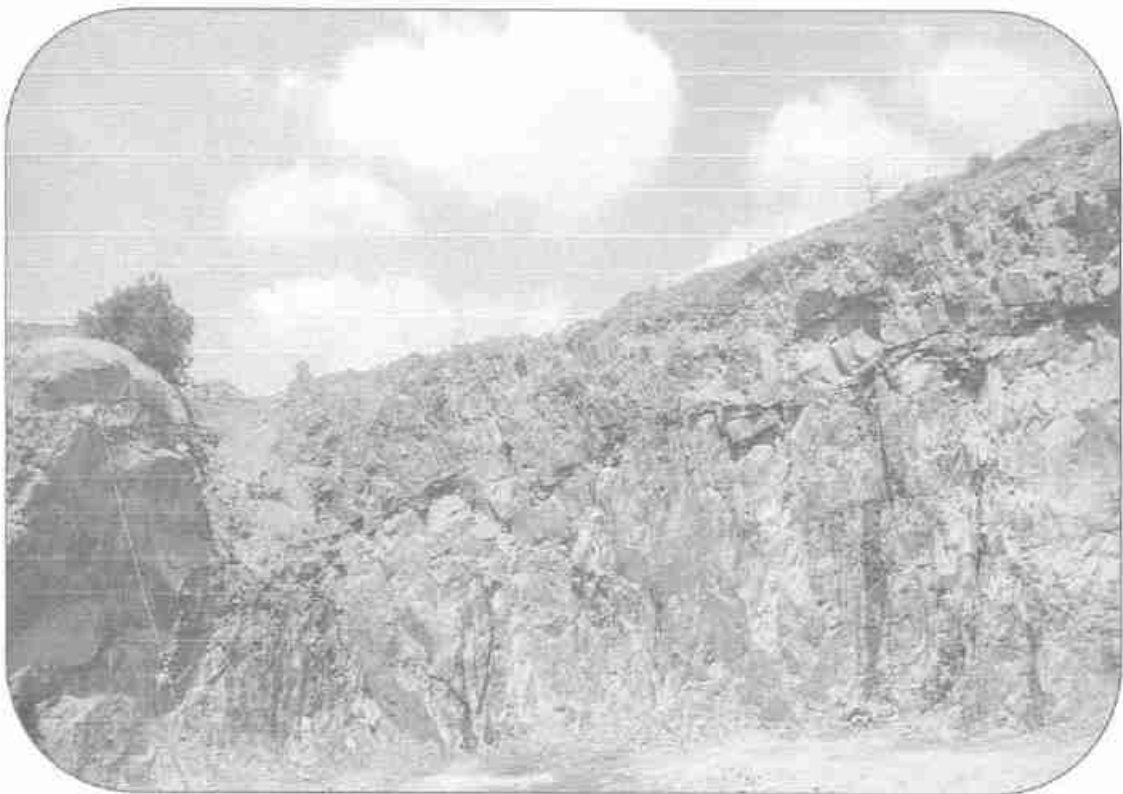
This Mining Plan is approved as per the  
Powers conferred under rule 41(2) of Tamil  
Nadu Minor Mineral Concession Rules, 1959

*J. Mani*  
DEPUTY DIRECTOR  
Geology and Mining  
Tiruppur

*19/02/24*



**PHOTOGRAPHS OF THE MUDALIPALAYAM  
ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA**



1





துணை இயக்குநர் அலுவலகம்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
திருப்பூர்

ந.க. 112/கனிமம்/2023

நாள்: .02.2024.

குறிப்பாணை

பொருள் : கனிமங்களும் சுரங்கங்களும் - சிறுகனிமம் - சாதாரண கற்கள் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - முதலிபாளையம் கிராமம் - புல எண். 986/B1(Part) ல் 1.21.46 ஹெக்டர் பட்டா நிலப்பரப்பில் சாதாரண கற்கள் / கிராவல் மண் வெட்டி எடுக்க 5 வருடங்களுக்கு குவாரி குத்தகை உரிமம் கோரி திருமதி.G.சுசீலா க/பெ.குணசேகரன் என்பவர் விண்ணப்பம் அளித்தது - குத்தகை உரிமம் வழங்க முடிவு செய்யப்பட்ட பரப்பு (Precise Area) விவரம் அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் சுற்றுச் சூழல் ஒப்புதல் பெற்று அளிக்க கோருதல் - தொடர்பாக

பார்வை : 1. திருமதி.G.சுசீலா க/பெ.குணசேகரன், 1/241, பால் சொசைட்டி எதிரில், குப்புசாமி நாயுடு புரம், செம்மியாளையம், பல்லடம் என்பவரின் மனு நாள்: 21.03.2023.  
2. இவ்வலுவலக கடிதம் இதே எண்.நாள்.24.03.2023  
3. வருவாய் வட்டாட்சியர், காங்கயம் கடிதம் ந.க.14666/2023/ஆ2 நாள்.09.05.2023.  
4. வருவாய் கோட்டாட்சியர், தாராபுரம் கடிதம் ந.க.எண்.1775/2023/இ நாள்.16.05.2023.  
5. உதவி இயக்குநர் மற்றும் தனி வருவாய் ஆய்வாளர், புவியியல் மற்றும் சுரங்கத்துறை, திருப்பூர் தணிக்கை குறிப்பு நாள். 09.01.2024.  
6. வட்டார வளர்ச்சி அலுவலர், குண்டாம் கடிதம் ந.க.எண்.4372/2022/ஆ2 நாள்.01.02.2024.  
7. அரசு அணை எண் 169 தொழில் (எம்எம்சி1) துறை நாள் 04.08.2020.

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண்.986/B1(Part) ல் 1.21.46 ஹெக்டர் பரப்புள்ள பட்டா புவியியலிருந்து சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க திருமதி.G.சுசீலா க/பெ.குணசேகரன், 1/241, பால் சொசைட்டி எதிரில், குப்புசாமி நாயுடு புரம், செம்மியாளையம், பல்லடம் என்பவர் பார்வை 1 ல் கண்டவாறு விண்ணப்பம் அளித்துள்ளார்.

2) மேற்படி விண்ணப்பம் தொடர்பாக, வட்டார வளர்ச்சி அலுவலர், குண்டாம், வட்டாட்சியர், காங்கயம், வருவாய் கோட்டாட்சியர், தாராபுரம் மற்றும் உதவி இயக்குநர் (கனிமம்) மற்றும் தனி வருவாய் ஆய்வாளர் (கனிமம்) ஆகியோர் புலத்தணிக்கை மேற்கொண்டு திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், பட்டா புல எண்.986/B1(Part) ல் 1.21.46 ஹெக்டர் பரப்பில் திருமதி.G.சுசீலா க/பெ.குணசேகரன்,



என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் குவாரி உரிமம் வழங்க கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

**நிபந்தனைகள்:**

- திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண்.986/B1(Part) ல் 1.21.46 ஹெக்டேர் பரப்பளவுள்ள பூமியிலிருந்து சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க குவாரி குத்தகை உரிமம் வழங்குவது தொடர்பாக ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டம் மற்றும் சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் ஒப்புதல் ஆகியன உரிய காலத்திற்குள் பெற்றளிக்கப்பட வேண்டும்.
- புலத்தை சுற்றி அமைந்துள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணிபுரிய வேண்டும்.
- குத்தகை உரிமம் கோரும் புலத்தை ஒட்டி மேற்கில் தென்வடலாக செல்லும் கிராம சாலைக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
- குத்தகை உரிமம் கோரும் புலத்திற்கு DGPS முறையில் அளவிட்டு செய்து அதற்கான சான்றினை சமர்ப்பிக்க வேண்டும்.

3) எனவே, வட்டார வளர்ச்சி அலுவலர், குண்டாம், வட்டாட்சியர், காங்கயம், வருவாய் கோட்டாட்சியர், தாராபுரம் மற்றும் உதவி இயக்குநர் (கனிமம்) மற்றும் தனி வருவாய் ஆய்வாளர் (கனிமம்), திருப்பூர் ஆகியோரின் பரிந்துரை மற்றும் நிபந்தனைகளின் அடிப்படையில், திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், பட்டா புல எண்.986/B1(Part) ல் 1.21.46 ஹெக்டேர் பரப்பில் மட்டும் 1959ம் வருட தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.19-ன் படி மேற்கண்ட நிபந்தனைகளுக்குட்பட்டு 5 (ஐந்து) வருட காலத்திற்கு திருமதி.G.சசீலா க/பெ.குணசேகரன் என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் குவாரி உரிமம் வழங்குவதற்குரிய தகுதியான நிலப்பரப்பாக கருதப்படுகிறது.

4. மேலும், தமிழ்நாடு சிறு கனிம சலுகை விதிகள்-1959 விதி எண். 41-ன்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறு மனுதாரரைக் கேட்டுக்கொள்ளப்படுகிறது. மேலும் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின் தொடர்ச்சியாக 1959ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.42-ன் படி சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

துணை இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை,  
திருப்பூர்

பெறுநர்  
திருமதி.G.சசீலா  
க/பெ.குணசேகரன்,  
1/241, பால் சொசைட்டி எதிரில்,  
குப்புசாமி நாயுடு புரம், செம்மிபாளையம்,  
பல்லடம்.

சுரங்க  
சுரங்க

திருப்பூர் மாவட்ட ஆட்சியர் அவர்களின் செயல்முறை ஆணை

முன்னிலை:- டாக்டர். கே.எஸ். பழனிசாமி, இ.ஆ.ப.,

ந.க. 384 / கனிமம் / 2016

நாள்: 16.04.2018.

பொருள்: கனிமங்களும் குவாரிகளும் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - முதலிபாளையம் கிராமம் - புல எண். 986/B1 (பகுதி)-ல் 0.96.0 ஹெக்டர் பூமி - சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க திரு. டி. குணசேகரன் என்பவருக்கு ஐந்து ஆண்டுகளுக்கு குவாரி குத்தகை உரிமம் உத்தரவிடப்படுகிறது.

- பார்வை:
1. திரு. டி. குணசேகரன், த/பெ. திருப்பதி என்பவரின் குவாரி குத்தகை உரிமம் வழங்கக் கோரும் மனு நாள்: 12.07.2016.
  2. தாராபுரம் சார் ஆட்சியர் கடிதம் ந.க. 2243 / 2016 / ஆ நாள்: 31.08.2016.
  3. திருப்பூர், புவியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநரின் புலத்தணிக்கை அறிக்கை நாள்: 15.10.2016.
  4. இவ்வலுவலக இதே எண்ணிட்ட கடிதம் நாள்: 25.10.2016 (Precise area communication letter).
  5. மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம், சென்னை கடிதம் SEIAA -TN / F. NO. 5898 / 1 (a) EC No. 3900 / 2016 நாள்: 18.11.2016.
  6. மனுதாரர் திரு. டி. குணசேகரன், த/பெ. திருப்பதி என்பவர் கடிதம் நாள்: 8.1.2018 மற்றும் 13.04.2018.

உத்தரவு:-

திருப்பூர் மாவட்டம், பல்லடம் வட்டம், சாமிக்கவுண்டன் புதூர், 1/241, குப்புசாமி நாயுடுபுரம் என்ற முகவரியில் வசிக்கும் திருப்பதி மகன் டி. குணசேகரன் என்பவர் காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண். 986/B1 (பகுதி)-ல் 0.96.0 ஹெக்டர் பட்டா நிலப்பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் வழங்கக் கோரி பார்வை 1ல் காணும் விண்ணப்பத்தினை சமர்ப்பித்துள்ளார். இவ்விண்ணப்பத்தின் மீது உரிய நில இருப்பு அறிக்கை வழங்கக் கோரி இவ்வலுவலக கடிதத்தின் வாயிலாக தாராபுரம் வருவாய் கோட்டாட்சியர் கேட்டுக் கொள்ளப்பட்டார்.

2. தாராபுரம் வருவாய் கோட்டாட்சியர் அவர்கள் சம்பந்தப்பட்ட புலத்தினை தணிக்கை செய்து, பார்வை 2-ல் கண்டவாறு தனது நில இருப்பு அறிக்கையினை சமர்ப்பித்துள்ளார். அவர் தனது அறிக்கையில்,



“காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண். 986/B1-ல் 3.65.0 ஹெக்டர் பரப்புள்ள பூமியானது மேற்படி கிராமப் பட்டா எண். 1026-ன்படியும், காங்கயம் சார் பதிவாளர் அலுவலக கிரைய ஆவண எண். 1141 / 2005 நாள்: 8.6.2015ன்படியும், திருமதி. சசீலா என்பவருக்கு பாத்தியப்பட்டுள்ளது எனவும், மேற்படி பூமியின் உரிமையாளர் தற்போது மேற்படி பூமியில் தனது கணவர் திரு. குணசேகரன் என்பவரது பெயரில் குத்தகை உரிமம் பெற்றுக் கொள்ள தனக்கு ஆட்சேபணை இல்லை என தெரிவித்து சம்மதக் கடிதம் அளித்துள்ளார் எனவும், மேற்படி பூமியில் குணசேகரன் என்பவர் ஏற்கனவே திருப்பூர் மாவட்ட ஆட்சியரின் செயல்முறை ஆணை ந.க. 207 / கனிமம் / 2011 நாள்: 14.9.2011ன்படி 14.9.2011 முதல் 13.9.2016 வரை ஐந்தாண்டுகளுக்கு குத்தகை உரிமம் பெற்று குவாரிப்பணி செய்து வந்துள்ளார் எனவும், மேற்படி குவாரியின் உரிம காலம் 13.9.2016 உடன் முடிவடைந்தது எனவும் தெரிவித்துள்ளார்.

மேலும், பிரஸ்தாப புலத்தின் வடக்கு, கிழக்கு, தெற்கு, மேற்கு ஆகிய நான்கு புறங்களிலும் புல எண். 986/B1 புலத்தின் மீதி பாகங்கள் எல்லைகளாக அமைந்துள்ளன எனவும், குவாரி உரிமம் கோரும் புலத்தின் நான்குபுறமும் எல்லைகள் வரையறுக்கப்பட்டு எல்லைக் கற்கள் நடப்பட்டுள்ளன எனவும், மேலும், குவாரி உரிமம் வழங்குவது தொடர்பாக, மேற்படி கிராமத்தில் அ1 விளம்பரம் செய்யப்பட்டதில், பொதுமக்களிடமிருந்து ஆட்சேபணைகள் ஏதும் வரப்பெறவில்லை எனவும், பிரஸ்தாப புலத்திலிருந்து 300 மீ சுற்றளவிற்குள் ஊர் நத்தமோ, இதர குடியிருப்புகளோ, அங்கீகரிக்கப்பட்ட அரசு கட்டிடங்களோ ஏதுமில்லை எனவும், பிரஸ்தாப புலத்தில் குறைந்த மற்றும் உயர் அழுத்த மின்பாதைகள் ஏதும் செல்லவில்லை” எனவும் தெரிவித்து, மனுதாரருக்கு காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண். 986/B1ல் 3.65.0 ஹெக்டர் பூமியில் 0.96.0 ஹெக்டர் பரப்பில் மட்டும் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் வழங்கலாம் என பரிந்துரை அறிக்கை சமர்ப்பித்துள்ளார்.

3. இதனைத் தொடர்ந்து, இப்புலத்தினை தணிக்கை செய்துள்ள துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, திருப்பூர் பார்வை 3-ல் காணும் கடிதத்தில் தனது அறிக்கையினை சமர்ப்பித்துள்ளார். அவர் தனது அறிக்கையில்,

குத்தகை உரிமம் கோரும் புல எண். 986/B1-ல் 3.65.0 ஹெக்டர் ஆனது பட்டா எண். 1026-ன்படி மனுதாரரின் மனைவி திருமதி. சசீலா என்பவர் பெயரில் தனிப்பட்டவாக தாக்கலாகியுள்ளது எனவும், திருமதி. சசீலா மனுதாரர் பெயரில் குவாரி குத்தகை உரிமம் வழங்குவதில் எவ்வித ஆட்சேபணையும் இல்லை என சம்மதக் கடிதம் அளித்துள்ளார் எனவும், இதன் மூலம் விண்ணப்பதாரருக்கு கல்குவாரி குத்தகை கோர விண்ணப்பப் புலத்தில் உரிமை உள்ளது எனவும், பிரஸ்தாப புலத்தில் திருப்பூர் மாவட்ட ஆட்சியர்



அவர்களின் செயல்முறை ஆணை ந.க. 207 / கனிமம் / 2011 நாள்: 14.9.2011-ன்படி 14.9.2011 முதல் 13.9.2016 வரை குத்தகை உரிமம் வழங்கப்பட்டு, குத்தகை உரிமம் முடிவுற்றுள்ளது எனவும் தெரிவித்துள்ளார்.

மேலும், விண்ணப்பப் புலத்தில் பூமியின் மேல்மட்டத்திலிருந்து 2 மீ வரை கிராவல் மண் படிவுகளும், அதனைத் தொடர்ந்து 3 மீ ஆழம் வரை சிதைவுப் பாறைகளும், அதனை அடுத்து சார்னோகைட் வகையைச் சார்ந்த பாறை அமைவுகளும் காணப்படுகின்றன எனவும், மேற்படி பாறைகளில் அடையப்பெற்ற குறுக்கு நெடுக்கான பாறைப் பிளவுகளினால் மேற்படி பாறையை மெருகூட்டி பளிங்குகற்களாக தயாரித்து ஏற்றுமதி செய்ய தரமானதாக இல்லை எனவும், இதற்கு மாறாக மேற்படி கற்களானது கட்டிடம் மற்றும் சாலைப்பணிக்கு பயன்படும் கட்டுக்கற்கள், ஜல்லிக்கற்கள் மற்றும் வேலிக்கற்கள் செய்ய ஏற்றதாக உள்ளது எனவும் தனது அறிக்கையில் குறிப்பிட்டுள்ளார்.

குத்தகை உரிமம் வழங்கக் கோரும் புலத்திலிருந்து 300 மீட்டர் சுற்றளவிற்குள் அரசால் அங்கீகரிக்கப்பட்ட வீட்டு மனைகளோ, கட்டிடங்களோ இல்லை எனவும், 50 மீட்டர் சுற்றளவில் நீர்நிலைகள், மயானங்கள், கோவில் போன்ற புரதான சின்னங்கள் ஏதும் இல்லை எனவும், விண்ணப்பப் புலத்தின் மேற்கே 50 மீ தொலைவில் கருக்கம் பாளையத்திலிருந்து குண்டடம் சாலையை இணைக்கும் கிராமத்துச் சாலை செல்கிறது எனவும், அச்சாலைக்கு இணையாக சாலையின் மேல்புறம் தாழ்வழுத்த மின்பாதை செல்கிறது எனவும், இதனைத் தவிர வேறு நிலையான அமைவுகள் ஏதுமில்லை எனவும், குத்தகை கோரும் புலத்தில் ஏற்கனவே குவாரி செய்த பள்ளங்கள் காணப்படுகின்றன எனவும், மேற்படி பள்ளங்களில் பரப்பு மற்றும் வெட்டியெடுக்கப்பட்ட கனிமங்களின் கனபரிமாணம் ஆகியவற்றை துணை இயக்குநர் (சுரங்கம்) அவர்களால் ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டத்திலிருந்து எடுத்துக் கொள்ளலாம் எனவும் தெரிவித்து, சில சிறப்பு நிபந்தனைகளின் பேரில், மனுதாரர் திரு. டி. குணசேகரன், த/பெ. திருப்பதி என்பவருக்கு காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண். 986/B1 (பகுதி)-ல் 0.96.0 ஹெக்டார் பரப்பிற்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுத்துக் கொள்ள தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959ன் விதி 19 (1) மற்றும் 20-ன்படி 5 (ஐந்து) ஆண்டுகளுக்கு குவாரி குத்தகை உரிமம் வழங்கலாம் என பரிந்துரை செய்து துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை அறிக்கை சமர்ப்பித்துள்ளார்.

4. மேற்கண்ட தணிக்கை அலுவலர்களின் பரிந்துரை அறிக்கைகளை ஏற்று, காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண். 986/B1 (பகுதி)-ல் 0.96.0 ஹெக்டார் பட்டா நிலப்பரப்பு குவாரி குத்தகை உரிமம் வழங்க முடிவு செய்யப்பட்ட பகுதி (Precise Area) என அறிவிக்கப்பட்டு விண்ணப்பத்தாரர் திரு. டி. குணசேகரன், த/பெ. திருப்பதி



என்பவருக்கு ஏற்பளிக்கப்பட்ட சுரங்க திட்டம் மற்றும் சுற்றுச்சூழல் பெற்று சமர்ப்பிக்கும்படி பார்வை 4-ல் காணும் கடிதத்தின்படி கேட்டுக் கொள்ளப்பட்டது.

5. அதன்படி, மனுதாரர் திரு. டி. குணசேகரன், த/பெ. திருப்பதி என்பவர் துணை இயக்குநர் (கனிமம்), திருப்பூர் அவர்களால் ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டத்தினையும், மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையம், சென்னை (State Level Environment Impact Assessment Authority, Chennai) (SEIAA)-யிடமிருந்து சுற்றுச்சூழல் ஒப்புதலையும் பெற்று இவ்வலுவலகத்தில் பார்வை 5-ல் கண்டவாறு சமர்ப்பித்துள்ளார்.

6. மேலும், மனுதாரர் திரு. டி. குணசேகரன், த/பெ. திருப்பதி என்பவர் மாநில அளவிலான சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்திடமிருந்து பெறப்பட்ட சுற்றுச்சூழல் ஒப்புதலில் தெரிவிக்கப்பட்டுள்ள நிபந்தனைகளின்படி, தமிழ் மற்றும் ஆங்கில நாளிதழ்களில் அறிவிப்பு வெளியீடு செய்து, அதன் விபரத்தினை பார்வை 6-ல் காணும் கடிதத்தின்படி தெரிவித்துள்ளார். மேலும், மேற்கண்ட அலுவலர்களின் பரிந்துரை மற்றும் சிறுகனிம சலுகை விதிகளின் பேரில், மனுதாரருக்கு குவாரி குத்தகை உரிமம் வழங்க ஒப்புதல் தெரிவிக்கப்பட்டதன் பேரில், மனுதாரர் விதிகளின்டி காப்புத் தொகையாக ரூ. 10000/-ஐ பாரத மாநில வங்கி, திருப்பூர், சலான் எண். 24, நாள்: 13.04.2018-ன்படி செலுத்தி அசல் சலானையும், 1959-ம் தமிழ்நாடு சிறுகனிம சலுகை விதிகளின் பின் இணைப்பு V கண்டுள்ள படிவத்தில் உரிய முத்திரைத்தாளில் குத்தகை ஒப்பந்தப் பத்திரம் தயார் செய்து அளித்துள்ளார்.

எனவே, தாராபுரம் வருவாய் கோட்டாட்சியர் மற்றும் துணை இயக்குநர் (கனிமம்), திருப்பூர் ஆகியோரின் பரிந்துரை அறிக்கைகளின்படியும் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் (State level Environment Impact Assessment Authority) (SEIAA) சுற்றுச்சூழல் ஒப்புதல்படியும் திரு. டி. குணசேகரன், த/பெ. திருப்பதி என்பவருக்கு காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண், 986/B1 (பகுதி)-ல் 0.96.0 ஹெக்டர் நிலபரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுத்துச் செல்ல தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959-ன் விதி 19(1), 20 மற்றும் 33-ன்படி குத்தகை ஒப்பந்தப் பத்திரம் நிறைவேற்றிய நாளான 16.04.2018 முதல் 15.04.2023 வரை ஐந்து ஆண்டுகளுக்கு கீழ்க்கண்ட நிபந்தனைகளுக்கு உட்பட்டு குவாரி உரிமம் வழங்கி உத்தரவிடப்படுகிறது.

#### நிபந்தனைகள்:-

1. குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றப்படும் நாள் குவாரி பணி தொடங்கப்படும் முதல் நாளாக கருதப்பட்டு அன்றைய தினத்திலிருந்து 5 ஆண்டுகளுக்கு மட்டுமே மாநில அளவிலான சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையம் (SEIAA) வழங்கிய சுற்றுச்சூழல் ஒப்புதல் சான்று செல்லத்தக்கது.



2. குத்தகை புலத்தினை அடுத்துள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் இடைவெளி அளித்து குவாரிப்பணி புரிய வேண்டும்.
3. பொதுமக்களுக்கோ, பொது சொத்துக்களுக்கோ யாதொரு சேதமும் இன்றி பாதுகாப்பான முறையில் குவாரிப்பணி செய்ய வேண்டும்.
4. பொதுமக்களின் நலன் கருதி பாதுகாப்பான முறையில் குறைந்த அழுத்தமுள்ள வெடிபொருட்கள் பயன்படுத்தியும், கைத்துளைப்பான் கருவி கொண்டு துளையிட்டும், தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்ய பாதுகாப்பானதும், அகலமான Benches அமைத்து குவாரிப்பணி செய்ய வேண்டும்.
5. மாநில சுற்றுச்சூழல் செயல் விளைவு மதிப்பீட்டு ஆணையத்தின் சுற்றுச்சூழல் ஒப்பதல் கடிதத்தில் சிறப்பு நிபந்தனைகளை முறையாக கடைபிடித்து குவாரிப்பணி செய்வதுடன், குவாரிப் பணி ஆரம்பிப்பதற்கு முன்பாக தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரியத்தின் தடையின்மை சான்று பெற்று மாவட்ட நிர்வாகத்திற்கு சமர்ப்பித்து அதன் பின்னரே குவாரிப்பணி துவங்க வேண்டும்.
6. குத்தகைதாரர் தனக்கு அளிக்கப்பட்ட குத்தகை பகுதியின் எல்லைகளை தெளிவாக காட்டும் வகையில் கல் நட்டு வண்ணம் இட்டு குத்தகை காலம் முழுமைக்கும் பராமரிக்க வேண்டும்.
7. குத்தகைதாரர் குவாரியின் அருகே குத்தகைதாரர் பெயர், கிராமத்தின் பெயர், வட்டத்தின் பெயர், புல எண். பரப்பு, குத்தகை ஆணை எண். குத்தகை காலம், கனிமத்தின் பெயர், போன்ற விபரங்கள் குறிக்கப்பட்ட தகவல் பலகையை தமது சொந்த செலவில் வைத்து நன்கு பராமரிக்க வேண்டும்.
8. குவாரிக்கு சென்றுவரும் பாதை வசதிகள் குத்தகைதாரர்கள் அவர் தம் சொந்த பொறுப்பிலேயே அமைத்துக் கொள்ள வேண்டும்.
9. குத்தகை வழங்கப்பட்ட பாறையில் குண்டுக்கல், ஜல்லி, அரவை கல், வேலிக்கற்கள், போன்ற சிறுகனிமங்கள் உடைத்தெடுக்க மட்டுமே அனுமதியுண்டு. வெளிநாடுகளுக்கு ஏற்றுமதியாகும் மெருகூட்டும் கனவடிவ கற்கள் வெட்டி எடுக்கக் கூடாது.
10. குவாரியிலிருந்து கொண்டு செல்லப்படும் மேற்கண்ட வகை கற்களுக்கு 1959ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் பின் இணைப்பு II-ல் கண்டுள்ளவாறு உரிமவரி (சீனியரேஜ் தொகை) செலுத்த வேண்டும். அரசு அவ்வப்போது அறிவிக்கும் உரிமவரி மாற்றங்களுக்கு ஏற்ப எவ்வித ஆட்சேபணை இன்றி செலுத்துதல் வேண்டும்.
11. திருப்பூர் மாவட்ட கனிம கட்டமைப்பு அறக்கட்டளை (District Mineral Foundation Trust) நிதிக்காக சாதாரண கற்கள் மற்றும் கிராவல் மண் எடுத்துச் செல்ல செலுத்தப்படும் சீனியரேஜ் தொகைக்கு 10% சதவீத தொகை மற்றும் அரசு அவ்வப்போது அறிவிக்கும் மாற்றங்களுக்கு ஏற்ப அறக்கட்டளை நிதி செலுத்தப்பட வேண்டும்.
12. குத்தகை அனுமதி வழங்கப்பட்ட நிலத்திலிருந்து கொண்டு செல்லப்பட்ட கனிமத்திற்கு முறையான கணக்குகளும், குழிவாயில் பதிவேடும் முறையாக பராமரித்தல் வேண்டும். அவற்றை சம்பந்தப்பட்ட அலுவலர்கள் தணிக்கைக்கு ஆஜர்படுத்த கோரினால் தவறாது சமர்ப்பிக்க வேண்டும்.
13. துணை / உதவி இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை)-ன் அலுவலக முத்திரை, கையொப்ப முத்திரையுடன் கூடிய உரிய அனுப்புகைச் சீட்டை வாகனங்களுக்கு கொடுக்கப்படும் போது அனுப்புகைச் சீட்டில் வாகன எண். தேதி, புறப்படும் நேரம், செல்லும் இடம் ஆகியவற்றை முறையாகக் குறிப்பிட்டு கையொப்பம் இட்ட பின்னரே, குத்தகைதாரரோ அல்லது அவரது அனுமதி பெற்ற நபரோ கொடுக்க வேண்டும்.



மேற்கண்டவாறு குறிப்பிடுவதில் ஏதேனும் தவறுகள் இருந்தாலோ, கலங்கள் பூர்த்தி செய்யப்படாமல் இருந்தாலோ முறையற்ற வகையில் கனிமம் எடுத்துச் செல்வதாகக் கருதப்பட்டு வாகனத்தை கைப்பற்றி அபராதம் விதிப்பதோடு, அதற்கு குத்தகைதாரரை பொறுப்பாக்கி கனிம விதிகளின் படி மேல் நடவடிக்கை எடுக்கப்படும்.

14. குத்தகை அனுமதி வழங்கப்பட்ட புலத்ததை முழுமையாகவோ, பகுதியாகவோ எவருக்கும் உள் குத்தகைக்கு விடுவதோ அல்லது கிரையம் செய்வதோ கூடாது.
15. குத்தகைதாரர் ஒவ்வொரு நாளும் குவாரியில் இருந்து எவ்வளவு சாதாரண கற்கள் / கிராவல் எடுக்கப்பட்டது என்பதையும் எந்த அளவு சாதாரண கற்கள் லாரி/வாகனங்கள் மூலம் வெளியே அனுப்பப்பட்டது என்ற விபரத்தையும் காட்டும் பதிவேட்டினைப் பராமரித்து வரவேண்டும்.
16. குத்தகைதாரர், தமக்கு குத்தகை வழங்கப்பட்ட பகுதிக்கு அருகில் உள்ள பட்டா நிலத்திற்கு எவ்வித இடையூறும் இல்லாமல் குவாரிப் பணி செய்யப்பட வேண்டும்.
17. வண்டிப்பாதை மற்றும் நடைபாதைகளில் இருந்து 10 மீட்டர் தூரம் தள்ளி குவாரி செய்ய வேண்டும். ரோடுகள், புகைவண்டிப்பாதை, பொதுப்பணித்துறை, வாய்க்கால், பொதுமக்கள் உபயோகத்திற்கான பகுதிகள், மின்சாரம் மற்றும் தொலைபேசி கம்பி செல்லும் பகுதிகள், வழிபாட்டு இடங்கள் மற்றும் பழங்கால சின்னங்கள் உள்ள பகுதிகள் ஆகியவற்றில் இருந்து 50 மீட்டர் பாதுகாப்பு தூரம் விட்டு குவாரி செய்ய வேண்டும்.
18. குத்தகைக்கு விடப்பட்டுள்ள விஸ்தீரணத்தில் மட்டுமே குத்தகைதாரர் குவாரி செய்ய வேண்டும். அதற்கான கூடுதலான விஸ்தீரணத்தில் குவாரி செய்வது தெரியவந்தால் அபராத நடவடிக்கை மேற்கொள்வதுடன் குவாரி குத்தகை உரிமம் இரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
19. குத்தகை நிபந்தனை மீறப்பட்டால் குத்தகை இரத்து செய்யவோ, செய்யப்பட்ட தவறுதலுக்கு அபராத நடவடிக்கை எடுத்து தண்டம் விதிக்கவோ அல்லது கிரியமினால் வழக்குத் தொடுக்க மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. குத்தகை ரத்து செய்யப்பட்டால் காப்புத் தொகை உட்பட அனைத்து தொகைகளும் அரசுக்கு ஆதாயமாக்கப்படும்.
20. குத்தகைதாரர் தமிழ்நாடு சிறுவகைக்கனிம சலுகை விதிகள் 1959ல் கண்டுள்ள விதிகளுக்கும் மற்றும் அரசு அவ்வப்போது அறிவிக்கும் சட்டதிட்டங்களுக்கும் உட்பட்டு குவாரிப்பணிகள் செய்ய வேண்டும்.
21. குவாரி குத்தகை உரிமம் காலாவதியான பின்பு எக்காரணத்தை முன்னிட்டும் மீண்டும் புதுப்பிக்கவோ அல்லது கால நீட்டிப்போ செய்து தரப்பட மாட்டாது.
22. வெடிபொருள் சட்டம் 1884ல் தெரிவிக்கப்பட்ட சரத்துக்கள்படி குறைந்த அளவு வெடிபொருளை உபயோகித்து கற்கள் வெளியே சிதறாமலும், சத்தம் அதிகம் ஏற்படாமலும், பொதுமக்களுக்கும், கால்நடைகளுக்கும், எவ்வித பாதிப்பும் இன்றியும் கல்குவாரி பணி செய்யப்பட வேண்டும்.
23. வெடிபொருள்கள் அரசு உரிமம் பெற்ற விற்பனைதாரரிடம் மட்டுமே பெற்று வெடிப்பதற்கு உரிய உரிமம் / அங்கீகாரம் பெற்ற வெடிப்பாளர்களை (Blaster / Mines mate) கொண்டு கல் குவாரியில் வெடி வைத்து பாறைகளை உடைக்க வேண்டும்.
24. குவாரிப்பணி ஆரம்பிப்பதற்கு முன்னதாக குவாரி பணி செய்யப்பட இருக்கும் புலங்களின் எல்லையைச் சுற்றிலும் முள் கம்பி வேலி (Barbed wire fencing) அமைக்கப்பட வேண்டும்.
25. குழந்தை தொழிலாளர்கள் எவரையும் வேலைக்கு அமர்த்துதல் கூடாது.





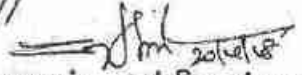
சிறப்பு நிபந்தனை:-

குத்தகைப் புலத்தின் மேற்கே 50 மீ தொலைவில் செல்லும் கருக்கம் பாளையத்திலிருந்து குண்டாம் சாலையை இணைக்கும் கிராமத்துச் சாலை மற்றும் குறைவழுத்த மின்கம்பிக்கும் எவ்வித பாதிப்பும் ஏற்படா வண்ணம் பாதுகாப்பான முறையில் குவாரிப்பணி செய்ய வேண்டும்.

மேற்கூறப்பட்ட நிபந்தனைகள் மற்றும் கனிம சட்டம் விதிகளை மீறியுள்ளது உறுதிபடும் தருணத்தில் விதிமுறைகளுக்கு உட்பட்டு குத்தகை இரத்து செய்ய நடவடிக்கை எடுக்கப்படும். மேற்கண்ட நிபந்தனைகள் ஒப்பந்தப் பத்திரத்தில் கண்டுள்ள நிபந்தனைகள், திருப்பூர் மாவட்ட சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் நிபந்தனைகள் மற்றும் தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959, கனிமம் மற்றும் சுரங்கம் (ஒழுங்குமுறை மற்றும் மேம்பாடு)-1957, மெட்டாலி..பெரஸ் மைன்ஸ் ரெகுலேசன் -1961 மற்றும் கனிம சட்டம் 1952 ஆகியவற்றின் அடிப்படையில் குத்தகைதாரர் குவாரிப் பணி புரிய வேண்டும்.


(ஓம்)... கே.எஸ். பழனிசாமி,  
மாவட்ட ஆட்சியர்,  
திருப்பூர்.

// உண்மை நகல் / உத்தரவுப்படி //

  
மாவட்ட ஆட்சியருக்காக,  
திருப்பூர்.

பெறுநர்

திரு. டி. குணசேகரன்,  
த/பெ. திருப்பதி,  
1/241, குப்புசாமிநாயுடு புரம்,  
சாமிக்கவுண்டன் புதூர்,  
பல்லடம்.

  
20/4/2018

நகல்:-

1. சார் ஆட்சியர், தாராபுரம்.
2. வட்டாட்சியர், காங்கயம்.
3. கிராம நிர்வாக அலுவலர் - முதலிபாளையம்.  
(வட்டாட்சியர் மூலமாக)
4. மாவட்ட சுற்றுச் சூழல் பொறியாளர்,  
தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரியம்,  
திருப்பூ (தெற்கு)



Dr. S. KALYANASUNDARAM, I.F.S. (Retd.)  
 CHAIRMAN

STATE LEVEL ENVIRONMENT IMPACT  
 ASSESSMENT AUTHORITY - TAMIL NADU  
 3rd Floor, Panagal Manligal,  
 No.1 Jeeris Road, Saidapet,  
 Chennai-15.  
 Phone No.044-24359974  
 Fax No. 044-24359975

**ENVIRONMENTAL CLEARANCE**

Lr. No. SEIAA-TN/F.No.5898/1(a)/ EC.No: 3900/2016 dated: 18.11.2016

To  
 Thiru. T. Gunasekaran  
 S/o. Thiruppathi  
 No. 1/241, Kuppusamy Naidu Puram  
 Samigoundan Pudur, Palladam Taluk  
 Tiruppur District- 641662

Sir,

Sub: SEIAA-TN – Proposed Rough Stone and Gravel quarry located at S.F.No 986/B1 (P),  
 Mudallpalayam Village, Kangayam Taluk, Tiruppur District- issue of Environmental  
 Clearance – Reg.

Ref: 1. Your Application for Environmental Clearance dt: 08.11.2016  
 2. Minutes of the 83th SEAC held on 11.11.2016  
 3. Minutes of the SEIAA meeting held on 18.11.2016

**Details of Minor Mineral Activity:-**

This has reference to your application first cited. The proposal is for obtaining environmental clearance for mining/quarrying of minor minerals based on the particulars furnished in your application as shown below.

1	Name of Project Proponent and address	Thiru. T. Gunasekaran No.1/241, Kuppusamy Naidu Puram Samigoundan Pudur Palladam Taluk Tiruppur District- 641662
2	Location of the Proposed Activity	
	Survey Number	986/B1 (P)
	Latitude and Longitude	10°52'22.77"N to 10°52'27.00"N 77°31'03.24"E to 77°31'05.94"E
	Village	Mudallpalayam
	Taluk	Kangayam

CHAIRMAN  
 SEIAA-TN



	District	Tiruppur
<b>3</b>	<b>Proposed Activity</b>	
	i. Minor mineral	Rough Stone and Gravel
	ii. Mining Lease Area	0.96.0 Ha
	iii. Approved quantity	40710 cu.m of Rough stone, 5614 cu.m of Gravel & 6630 cu.m of Weathered Rock
	iv. Depth of Mining	30 m
	v. Type of mining	Opencast Semi Mechanised Mining
	vi. Category(B1/B2)	B2
	vii. Precise area communication	Na.Ka.384/Kanimam/2016 Dated:25.10.2016
	viii. Mining plan approval	Deputy Director Rc.No.384/Mines/2016 Dated:03.11.2016
	ix. Mining lease period	5 Years
<b>4</b>	<b>Whether Project area attracts any General conditions specified in the EIA notification, 2006 as amended:-</b>	Not attracted. Affidavit furnished
<b>5</b>	<b>Man Power requirement per day:</b>	11 Employees
<b>6</b>	<b>Utilities</b>	
	i. Source of Water :	Water vendors/Existing Borehole
	ii. Quantity of Water Requirement in KLD:	
	a. Domestic	0.3KLD
	b. Industrial	} 0.7KLD
	c. Green Belt & Dust Suppression	
	iii. Power Requirement:	-
	a. Domestic Purpose	TNEB
	b. Industrial Purpose	34626 Liters of HSD
<b>7</b>	<b>Cost</b>	
	i. Project Cost	Rs.49.42 Lakhs
	ii. EMP Cost	Rs.7.10 Lakhs
<b>8</b>	<b>Public Consultation:-</b>	Not required as per O.M. dated 24.12.2013 of MoEF, Gol.
<b>9</b>	<b>Date of Appraisal by SEAC:- Agenda No:</b>	11.11.2016 B3-26
<b>10</b>	<b>Date of Review/Discussion by SEIAA and the Remarks:-</b>	The proposal was placed before the SEIAA in its 201 Meeting held on 18.11.2016 and the Authority after careful consideration, decided to grant environmental clearance to the said project Mining of Rough Stone and Gravel subject to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.
<b>11</b>	<b>Validity:</b>	This Environmental Clearance is granted to Mining of Rough Stone and Gravel for the production quantity of 40710 cu.m of Rough stone, 5614 cu.m of Gravel & 6630 cu.m of Weathered Rock for the period of 5 Years from the date of execution of the Mining Lease period.

CHAIRMAN  
SEIAA-TN



**Conditions to be Complied before commencing mining operations:-**

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
  - I. The project has been accorded Environmental Clearance.
  - II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
  - III. Environmental Clearance may also be seen on the website of the SEIAA.
  - IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.
2. The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.
9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 15 mts. from any civil structure shall be kept from the periphery of any excavation area.
14. Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.

CHAIRMAN  
SEIAA-TN



15. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
16. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation systems for blasting shall be used so as to reduce vibration and dust.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.
19. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
20. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
21. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009.
22. The following measures are to be implemented to reduce Air Pollution during transportation of mineral
  - i. Roads shall be graded to mitigate the dust emission.
  - ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust
23. The following measures are to be implemented to reduce Noise Pollution
  - i. Proper and regular maintenance of vehicles and other equipment
  - ii. Limiting time exposure of workers to excessive noise.
  - iii. The workers employed shall be provided with protection equipment and earmuffs etc.
  - iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
24. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.
25. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
26. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
27. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
28. The following measures are to be adopted to control erosion of dumps:
  - i. Retention/toe walls shall be provided at the foot of the dumps.
  - ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.

CHAIRMAN  
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29. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.
30. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
31. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
32. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
33. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
34. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
35. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
36. It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.
37. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site.
38. Ground water quality monitoring should be conducted once in 3 Months.
39. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
40. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI.
41. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI.
42. Bunds to be provided at the boundary of the project site.
43. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.

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SEIAA-TN



44. As least 20 No. of trees should be planted around the boundary of the quarry site
45. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (except for quarries) in the mine closure phase.
46. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
47. The Project Proponent shall provide solar lighting system to the nearby villages
48. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
49. Rainwater shall be pumped out Via Settling Tank only
50. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
51. As per MoEF&CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry & Wild Life angle including clearance from standing committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.
52. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.
53. Safety equipments to be provided to all the employees.
54. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
55. The Assistant/Deputy Director, Department of Geology & mining shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
56. The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.
57. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.
58. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.
59. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
50. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.

CHAIRMAN  
SEIAA-TN



General Conditions:

1. EC is given only on the factual records, documents and the commitment furnished in non-judicial stamp paper by the proponent.
2. The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavits furnished.
15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.

CHAIRMAN  
SEIAA-TN





16. The Environmental Clearance does not absolve the applicant/proponent of the obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the environmental clearance.
20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
21. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
22. Any other conditions stipulated by other Statutory/Government authorities shall be complied.
23. Any appeal against this environmental clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

CHAIRMAN  
SEIAA-TN

Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Principal Secretary, Environment and Forests Department, Government of Tamil Nadu, Tamil Nadu.
3. The Additional Chief Secretary, Industries Department, Government of Tamil Nadu, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (S2), 34, HEPC Building, 1<sup>st</sup> & 2<sup>nd</sup> Floor, Cathedral Garden Road, Nungambakkam, Chennai - 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-32.
7. The District Collector, Tiruppur District.
8. The Commissioner of Geology and Mines, Guindy, Chennai-32.
9. E1 Division, Ministry of Environment & Forests, Parivaran Bhawan, New Delhi.
10. Spare.

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भारतीय गैर न्यायिक INDIA NON JUDICIAL

₹. 25000  
पच्चीस हजार रुपये



Rs. 25000  
TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு தமில்நாடு TAMILNADU

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13.4.2018

செ. இராசசேகரன்  
செ. இராசசேகரன்  
ச. நிரந்தர எண் 15/1993  
238, குமாரன் சாலை,  
திருப்பூர் - 1. (தமிழ்நாடு)

T. Govindarajan  
TNS 496, Tiruppur

**APPENDIX - V**  
(See Rule 19 (1) and 33)

**FORM OF JOINT AGREEMENT FOR QUARRYING AND CARRYING AWAY  
MINOR MINERALS BY LESSEE IN RYOTWARI LANDS IN WHICH THE  
MINERALS BELONG TO GOVERNMENT**

Collector Proceedings No. 384 / Mines / 2016 Dated. 16.04.2018

THIS AGREEMENT MADE the 16<sup>th</sup> day of APRIL 2018 between  
Tmt. G. Susila, W/o. Gunasekaran, residing at 1/241, Kuppusamy Naidupuram,  
Samigaundan puthur, Palladam Taluk, Tiruppur District (hereinafter referred to as "the  
Registered Holder" which expression shall where the context so admits, include their  
heirs, executors, administrators legal representatives and assigns) of the first part and

G. Susila  
REGISTERED HOLDER

T. Govindarajan  
LESSEE

*[Signature]*  
DISTRICT COLLECTOR,  
TIRUPPUR

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I contain 15 sheets  
*[Signature]*  
District Collector





WHEREAS, the Registered Holder holds the lands described in the schedule hereto and intended to lease out to the Lessee of the said lands for the purpose of quarrying Rough stone and Gravel in the said lands and to deposit mining waste in the said lands and has lodged with the Collector the lease and accurate map or sketch of the said lands.

AND WHEREAS, the Registered holder / Lessee or tenant of the Registered Holder have made application to the Collector of District of Tiruppur (herein after referred to as "the Collector") seeking grant of quarrying lease for quarrying Rough Stone and Gravel in the said lands and to deposit mining waste in the said lands and has lodged with the Collector an accurate map or sketch of the said lands.

AND WHEREAS, the Collector acting for and on behalf of the Government has granted a quarrying lease to the Lessee or tenant of the Registered Holder and allowed them to commence quarrying operations for Rough stone and Gravel in the said lands to deposit mining waste thereon by Lessee or tenant of the Registered Holder.

AND WHEREAS, the Collector is prepared to allow the said Lessee to commence mining operations and to deposit mining waste in or on the said lands described in the schedule for a term of five years period from 16.04.2018 To 16.04.2023 upon the Registered Holder and the Lessee entering into the agreement herein contained.

AND WHEREAS, the tenant of Registered Holder has deposited with the Collector, a sum of Rs. 10,000/- Chalan No. 24, Dated: 13.4.2018, remitted at State Bank of India, Tiruppur Branch as security for the due performance of the covenants, agreements and provisos or damage which may be incurred by the Government by reason of any of the said lands described in the schedule hereto being rendered unfit for cultivation by the mining operations therein or by the deposit of mining waste thereon by either the Registered Holder or the Lessee.

AND WHEREAS, the Lessee has at the request of the Registered Holder and in consideration of such approval by the Collector of the mining operations as herein before recited agreed to join in these presents for the purpose of entering into covenants, agreements and provisos hereinafter contained as surety for the Registered Holder.

*[Signature]*  
REGISTERED HOLDER

*[Signature]*  
LESSEE

*[Signature]*  
DISTRICT COLLECTOR  
TIRUPPUR

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1. NOW THESE PRESENTS WITNESS and Registered Holder and the Lessee do hereby jointly and severally and each of them doth individually hereby covenants and agree with the Government as follows:-

01. To carry on quarry operations during the said term in a proper and workman like manner and to deposit mining waste on the lands described in the schedule hereto and to answer and to account at all reasonable times to Government for all acts and defaults committed by any servants, agents or workmen employed by the Registered Holder or Lessee in carrying on such operations or in making such deposits.
02. To pay into Treasury/State Bank of India at Tiruppur to the credit of the Government in addition to the land assessment for the time being payable in respect of the said lands Seigniorage Fee on the minerals quarried at the rates prescribed by the Government from time to time.
03. To abide by the Rules prescribed by the Government from time to time regarding quarrying of minor minerals.
04. To keep correct accounts in such form as the Collector shall from time to time require and direct showing the quantities and other particulars of all minerals obtained by the Registered Holders or the Lessees from the said lands and also the number or persons employed in carrying on the said mining operations therein and prepare and maintain from time to time when so directed by the said Collector complete and correct plans of all mines and working in the said lands and to allow any officer thereunto authorized by the (Director of Geology and Mining), Tamil Nadu, from time to time and at all times to examine such accounts and any such plans and to supply and furnish when so required all such information and returns all or any of the matters aforesaid as the Government may from time to time required and direct.
05. To allow any officer authorized by the Government in that behalf from time to time and at all times to enter upon any part of the said lands where mining operations may be carried on for the purpose or inspecting the same.
06. To Forthwith send to the Collector a report of any accident which may occur at or in the said land and also of the discovery therein of any minerals other than Rough stone / Gravel.
07. Not to claim any remission of assessment in respect of any of the said lands which shall be rendered unfit for surface cultivation by the carrying on of any mining operations or by the deposit of mining waste unless thirty times of the assessment thereon has been deducted under provisos 2 hereunder.

II. PROVIDED ALWAYS and it is hereby further agreed by and between the parties as follows:

01. That it shall be lawful for the Registered Holder or Lessee as the case may be at any time to cease mining operations under these provided the Registered Holder or Lessees shall pay the Government or the Collector the land assessment, cess and seigniorage payable by the Registered Holder or the Lessee under these

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 G. Smile  
 REGISTERED HOLDER  
 ahf  
 Registering Officer

T. G. Srinivasan  
 LESSEE

DISTRICT COLLECTOR  
 TIRUPPUR



present unto to the end of the year in which the Registered Holder or the Lessee shall cease such mining operations and shall restore the said lands fence or fill in the abandoned pits and excavations therein if required by the Collector as next hereinafter provided and upon, the Registered Holder or the Lessee so doing these presents shall cease and determine.

02. That in case the Registered Holder shall relinquish the whole or part of the said lands in case of the expiry or sooner determination of this agreement then and in any such case, the Registered Holder in the case of relinquishment and the Registered Holder and the Lessee in other cases shall restore said lands or the area relinquished or so much thereof as the Collector shall required to be restored to a state fit for cultivation and shall securely and permanently fence or fill in all abandoned pits and excavation therein as the Collector shall require to be fenced or filled in and incase the Registered Holder or the Lessee shall fail, or neglect any such lands with the Registered Holder or the Lessees be required to restore to a state fit for cultivation or to so fence or fill in any such abandoned pit or excavation which the Registered Holder or the Lessee shall be required to so fence or fill them and in any such case it shall be lawful for the Collector to so restore any such lands or as the case may be so fence or fill in any pit excavation at the expense of the Registered Holder or Lessee and to apply and said sum of Rs. 10,000/- so deposited in or towards the cost of so doing and to deduct from amount of the said deposit and retain on behalf of the Government a sum equal to thirty times the assessment of the said lands which shall have been rendered unfit for cultivation. If however the amount of deposit is not sufficient to cover the cost of such restoration or fencing or filling as the case may be or to meet thirty times the assessment of the area rendered uncultivated, it shall be lawful for the Government to recover the balance by resort to Civil court.
03. That all land assessment, Cesses and Seigniorage Fee & Penalty payable under these presents shall be recoverable under the provisions of the Tamil Nadu Revenue Recovery Act, 1864 or any subsisting statutory modification thereof, as if the same were arrear of Land Revenue.
04. That in the event of any breach of the Registered Holder of any of the conditions of these presents it shall be lawful for the Government to levy enhanced Seigniorage fee subject to the maximum of Fifteen times the normal rate or for the Collector to give notice in writing to the Registered Holder of his intention to cancel these presents whereupon the same shall stand cancelled but without prejudice to any rights which the Government may have against the Registered Holders in respect of any antecedent claim or breach of covenant or condition.
05. That any notice to be given to Registered Holder may be addressed to their last know place of abode and where notice has been so addressed it shall be deemed to have been duly served for the purpose of these presents.
06. Should any question or dispute arise regarding the agreement executed in pursuance of these rules or any matter or thing connected therewith or the powers of the Registered Holder there under, the amount or payment of the Seigniorage Fee or Area Assessment made payable thereby, the matter in issue shall be decided by the Commissioner / Director of Geology and Mining, Chennai-32. In case the Registered Holder / Lessee are not satisfied with decision of the

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Commissioner of Geology & Mining, the matter shall be referred to the State Government.

07. The Registered Holder & Lessee shall abide by the conditions laid down in the Payment of Wages Act, 1936 (Central Act IV of 1936), the Mines Act, 1952 (Central Act XXXV of 1952) and the Explosives Act, 1884 (Central Act IV of 1884) and the rules made there under.

நிபந்தனைகள்:-

1. குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றப்படும் நாள் குவாரி பணி தொடங்கப்படும் முதல் நாளாக கருதப்பட்டு அன்றைய தினத்திலிருந்து 5 ஆண்டுகளுக்கு மட்டுமே மாநில அளவிலான சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆணையம் (SEIAA) வழங்கிய சுற்றுச்சூழல் ஒப்புதல் சான்று செல்லத்தக்கது.
2. குத்தகை புலத்தினை அடுத்துள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் இடைவெளி அளித்து குவாரிப்பணி புரிய வேண்டும்.
3. பொதுமக்களுக்கோ, பொது சொத்துக்களுக்கோ யாதொரு சேதமும் இன்றி பாதுகாப்பான முறையில் குவாரிப்பணி செய்ய வேண்டும்.
4. பொதுமக்களின் நலன் கருதி பாதுகாப்பான முறையில் குறைந்த அழுத்தமுள்ள வெடிபொருட்கள் பயன்படுத்தியும், கைத்துளைப்பான் கருவி கொண்டு துளையிடும், தொழிலாளர்களின் பாதுகாப்பினை உறுதி செய்ய பாதுகாப்பானதும், அகலமான Benches அமைத்து குவாரிப்பணி செய்ய வேண்டும்.
5. மாநில அளவிலான சுற்றுச்சூழல் செயல் விளைவு மதிப்பீட்டு ஆணையம், (SEIAA) சுற்றுச்சூழல் ஒப்புதல் கடிதத்தில் தெரிவிக்கப்பட்டுள்ள பொது மற்றும் சிறப்பு நிபந்தனைகளை முறையாக கடைபிடித்து குவாரிப்பணி செய்வதுடன், குவாரிப் பணி ஆரம்பிப்பதற்கு முன்பாக தமிழ்நாடு மாசுக்கட்டுப்பாட்டு வாரியத்தின் தடையின்மை சான்று பெற்று மாவட்ட நிர்வாகத்திற்கு சமர்ப்பித்து அதன் பின்னரே குவாரிப்பணி துவங்க வேண்டும்.
6. குத்தகைதாரர் தனக்கு அளிக்கப்பட்ட குத்தகை பகுதியின் எல்லைகளை தெளிவாக காட்டும் வகையில் கல் நட்டு வண்ணம் இட்டு குத்தகை காலம் முழுமைக்கும் பராமரிக்க வேண்டும்.
7. குத்தகைதாரர் குவாரியின் அருகே குத்தகைதாரர் பெயர், கிராமத்தின் பெயர், வட்டத்தின் பெயர், புல எண். பரப்பு, குத்தகை ஆணை எண். குத்தகை காலம், கனிமத்தின் பெயர், போன்ற விபரங்கள் குறிக்கப்பட்ட தகவல் பலகையை தமது சொந்த செலவில் வைத்து நன்கு பராமரிக்க வேண்டும்.
8. குவாரிக்கு சென்றுவரும் பாதை வசதிகள் குத்தகைதாரர்கள் அவர் தம் சொந்த பொறுப்பிலேயே அமைத்துக் கொள்ள வேண்டும்.
9. குத்தகை வழங்கப்பட்ட பாறையில் குண்டுக்கல், ஜல்வி, அரவை கல், வேலிக்கற்கள், போன்ற சிறுகனிமங்கள் உடைத்தெடுக்க மட்டுமே அனுமதியுண்டு. வெளிநாடுகளுக்கு ஏற்றுமதியாகும் மெருகூட்டும் கனவடிவ கற்கள் வெட்டி எடுக்கக் கூடாது.
10. குவாரியிலிருந்து கொண்டு செல்லப்படும் மேற்கண்ட வகை கற்களுக்கு 1959ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் பின் இணைப்பு II-ல் கண்டுள்ளவாறு உரியவரி

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(சீனியரேஜ் தொகை) செலுத்த வேண்டும். அரசு அவ்வப்போது அறிவிக்கும் உரிமவரி மாற்றங்களுக்கு ஏற்ப எவ்வித ஆட்சேபணை இன்றி செலுத்துதல் வேண்டும்.

11. திருப்பூர் மாவட்ட கனிம கட்டமைப்பு அறக்கட்டளை (District Mineral Foundation Trust) நிதிக்காக சாதாரண கற்கள் மற்றும் கிராவல் மண் எடுத்துச் செல்ல செலுத்தப்படும் சீனியரேஜ் தொகைக்கு 10% சதவீத தொகை மற்றும் அரசு அவ்வப்போது அறிவிக்கும் மாற்றங்களுக்கு ஏற்ப அறக்கட்டளை நிதி செலுத்தப்பட வேண்டும்.
12. குத்தகை அனுமதி வழங்கப்பட்ட நிலத்திலிருந்து கொண்டு செல்லப்பட்ட கனிமத்திற்கு முறையான கணக்குகளும், குழிலாயில் பதிவேடம் முறையாக பராமரித்தல் வேண்டும். அவற்றை சம்பந்தப்பட்ட அலுவலர்கள் தனிச்சுக்கைக்கு ஆண்படுத்த கோரினால் தவறாது சமர்ப்பிக்க வேண்டும்.
13. துணை / உதவி இயக்குநர் (புவியியல் மற்றும் சுரங்கத்துறை)-ன் அலுவலக முத்திரை, கையொப்ப முத்திரையுடன் கூடிய உரிய அனுப்புரைச் சீட்டை வாகனங்களுக்கு கொடுக்கப்படும் போது அனுப்புரைச் சீட்டில் வாகன எண், தேதி, புறப்படும் நேரம், செல்லும் இடம் ஆகியவற்றை முறையாகக் குறிப்பிட்டு கையொப்பம் இட்ட பின்னரே, குத்தகைதாரரோ அல்லது அவரது அனுமதி பெற்ற நபரோ கொடுக்க வேண்டும். மேற்கண்டவாறு குறிப்பிடுவதில் ஏதேனும் தவறுகள் இருந்தாலோ, கலங்கள் பூர்த்தி செய்யப்படாமல் இருந்தாலோ முறையற்ற வகையில் கனிமம் எடுத்துச் செல்வதாகக் கருதப்பட்டு வாகனத்தை கைப்பற்றி அபராதம் விதிப்பதோடு, அதற்கு குத்தகைதாரரை பொறுப்பாக்கி கனிம விதிகளின் படி மேல் நடவடிக்கை எடுக்கப்படும்.
14. குத்தகை அனுமதி வழங்கப்பட்ட புலத்தை முழுமையாகவோ, பகுதியாகவோ எவருக்கும் உள் குத்தகைக்கு விடுவதோ அல்லது கிராமம் செய்வதோ கூடாது.
15. குத்தகைதாரர் ஒவ்வொரு நாளும் குவாரியில் இருந்து எவ்வளவு சாதாரண கற்கள் / கிராவல் எடுக்கப்பட்டது என்பதையும் எந்த அளவு சாதாரண கற்கள் வாரி/ வாகனங்கள் மூலம் வெளியே அனுப்பப்பட்டது என்ற விபரத்தையும் காட்டும் பதிவேட்டினைப் பராமரித்து வரவேண்டும்.
16. குத்தகைதாரர், தமக்கு குத்தகை வழங்கப்பட்ட பகுதிக்கு அருகில் உள்ள பட்டா நிலத்திற்கு எவ்வித இடையூறும் இல்லாமல் குவாரிப் பணி செய்யப்பட வேண்டும்.
17. வண்டிப்பாதை மற்றும் நடைபாதைகளில் இருந்து 10 மீட்டர் தூரம் தள்ளி குவாரி செய்ய வேண்டும். ரோடுகள், புவைவண்டிப்பாதை, பொதுப்பணித்துறை, வாய்க்கால், பொதுமக்கள் உபயோகத்திற்கான பகுதிகள், மின்சாரம் மற்றும் தொலைபேசி கம்பி செல்லும் பகுதிகள், வழியாட்டு இடங்கள் மற்றும் பழங்கால சின்னங்கள் உள்ள பகுதிகள் ஆகியவற்றில் இருந்து 50 மீட்டர் பாதுகாப்பு தூரம் விட்டு குவாரி செய்ய வேண்டும்.
18. குத்தகைக்கு விடப்பட்டுள்ள விஸ்தீரணத்தில் மட்டுமே குத்தகைதாரர் குவாரி செய்ய வேண்டும். அதற்கான கூடுதலான விஸ்தீரணத்தில் குவாரி செய்வது தெரியவந்தால் அபராத நடவடிக்கை மேற்கொள்வதுடன் குவாரி குத்தகை உரிமம் இரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
19. குத்தகை நிபந்தனை மீறப்பட்டால் குத்தகை இரத்து செய்யவோ, செய்யப்பட்ட தவறுகளுக்கு அபராத நடவடிக்கை எடுத்து தண்டம் விதிக்கவோ அல்லது கிரிமினல் வழக்குத் தொடுக்க மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. குத்தகை ரத்து செய்யப்பட்டால் காப்புத் தொகை உட்பட அனைத்து தொகைகளும் அரசுக்கு ஆதாயமாக்கப்படும்.

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20. குத்தகைதாரர் தமிழ்நாடு சிறுகலைக்கனிம சலுகை விதிகள் 1959ல் கண்டுள்ள விதிகளுக்கும் மற்றும் அரசு அவ்வப்போது அதிவிக்கும் சட்டதிட்டங்களுக்கும் உட்பட்டு குவாரிப்பணிகள் செய்ய வேண்டும்.
21. குவாரி குத்தகை உரியம் காலாவதியான பின்பு எக்காரணத்தை முன்னிட்டும் மீண்டும் புதுப்பிக்கவோ அல்லது கால நிடிப்போ செய்து தரப்பட மாட்டாது.
22. வெடிபொருள் சட்டம் 1884ல் தெரிவிக்கப்பட்ட சரத்துக்கள்படி குறைந்த அளவு வெடிபொருளை உபயோகித்து சுற்கள் வெளியே சிதறாமலும், சத்தம் அதிகம் ஏற்படாமலும், பொதுமக்களுக்கும், கால்நடைகளுக்கும், எவ்வித பாதிப்பும் இன்றியும் கங்குவாரி பணி செய்யப்பட வேண்டும்.
23. வெடிபொருள்கள் அரசு உரியம் பெற்ற விந்நபனைதாரரிடம் மட்டுமே பெற்று வெடிப்பதற்கு உரிய உரியம் / ஆயக்காரம் பெற்ற வெடிப்பாளர்களை (Blaster / Mines man) கொண்டு கல் குவாரியில் வெடி வைத்து பாறைகளை உடைக்க வேண்டும்.
24. குவாரிப்பணி ஆரம்பிப்பதற்கு முன்னதாக குவாரி பணி செய்யப்பட இருக்கும் புலங்களின் எல்லைவயச் சுற்றிலும் முள் கம்பி வேலி (Barbed wire fencing) அமைக்கப்பட வேண்டும்.
25. குழந்தை தொழிலாளர்கள் எவரையும் வேலைக்கு அமர்த்துதல் கூடாது.

#### சிறப்பு நிபந்தனை:-

குத்தகைப் புலத்தின் மேற்கே 50 மீ தொலைவில் செல்லும் கருக்கம் பாளையத்திலிருந்து ஒண்டடம் சாலையை இணைக்கும் கிராமத்துச் சாலை மற்றும் குறைவடித்த கிள்கம்பிக்கும் எவ்வித பாதிப்பும் ஏற்படா வண்ணம் பாதுகாப்பான முறையில் குவாரிப்பணி செய்ய வேண்டும்.

வெறிகுறிப்பிட்ட நிபந்தனைகள் மற்றும் கனிம சட்டம் விதிகளை மீறியுள்ளது உறுதியும் கருணத்தில் விதிமுறைகளுக்கு உட்பட்டு குத்தகை இரத்து செய்ய நடவடிக்கை எடுக்கப்படும். மேற்கண்ட நிபந்தனைகள் ஒப்புநதம் பத்திரத்தில் கண்டுள்ள நிபந்தனைகள், மாநில சுற்றுச் சூழல் தாக்க மதிப்பீட்டு ஆலாயத்தின் நிபந்தனைகள் மற்றும் தமிழ்நாடு சிறுகலை சலுகை விதிகள் 1959, கனிமம் மற்றும் காங்கம் (ஒழுங்குமுறை மற்றும் மேம்பாடு)-1957, மெட்டர்லி.பெரஸ் மைனர்ஸ் ரெகுலேசன் -1961 மற்றும் கனிம சட்டம் 1952 ஆகியவற்றின் அடிப்படையில் குத்தகைதாரர் குவாரிப் பணி புரிய வேண்டும்.

"As per Approved Mining Plan the total production of Rough stone and Gravel for the five years lease period is 47340 cubic meter and 5614 cubic meter respectively. Hence for the purpose of calculating stamp duty the anticipated Seigniorage fee is Rs. 29,76,322/- (Rupees Twenty nine lakhs seventy eight thousands three hundred and twenty two only) for the entire lease period of Five years.

G. Sula

INTEREST HOLDER

T. குணசெகரன்

15/8/2018

2430	2018
15	8
SHAR	



**THE SCHEDULE**

Name of the District : Tiruppur  
 Name of the Taluk : Kangeyam  
 Name of the Village : Mudhalipalayam  
 Name of the Sub-Registration District : Kangeyam Sub Registrar Office  
 Lease Period : 5 years (From 16.04.2018 To 15.04.2023)

S.F. No.	Extent (in hecets)	Area Assessment	North	South	East	West
986/B1 (part)	0.96.0	Rs. 720/-	986/B1 (Part)	986/B1 (Part)	986/B2	986/B1 (part)

IN WITNESS Tmt. G. Susila, W/o. Gunasekaran, residing at 1/241, Kuppasamy Naidupuram, Samigoundan puthur, Palladam Taluk, Tiruppur District "the Registered Holder" and Thiru. T. Gunasekaran, S/o. Tiruppathi, residing at 1/241, Kuppasamy Naidupuram, Samigoundan puthur, Palladam Taluk, Tiruppur District "the Lessee" and Dr. K.S. Palanisamy, I.A.S., District Collector, Tiruppur acting for and on behalf of and by the order and direction of the Governor of Tamil Nadu have hereunto set their hands.

*G. Susila*

*T. Gunasekaran*  
 LESSEE

(Signed by the above named the Permit holder in the presence of )

- S. Ganesan*  
(S. Ganesan),  
68, Thanga perumal street,  
Erode.
- R. Selwanaj*  
(R. Selwanaj),  
S/o. Ramasamy,  
1/31, Amari jothi jai Nagar,  
Kannampalayam,  
Sulur.

*T. Gunasekaran*  
 DISTRICT COLLECTOR  
 TIRUPPUR

(Signed by the above named the Lessor in the presence of )

- T. Gunasekaran*  
(T. Gunasekaran),  
S/o. Tiruppathi,  
Kuppasamy Naidupuram,  
Samigoundan puthur,  
Palladam Taluk,  
Tiruppur District.
- R. Selwanaj*  
(R. Selwanaj),  
S/o. Ramasamy,  
1/31, Amari jothi jai Nagar,  
Kannampalayam,  
Sulur.

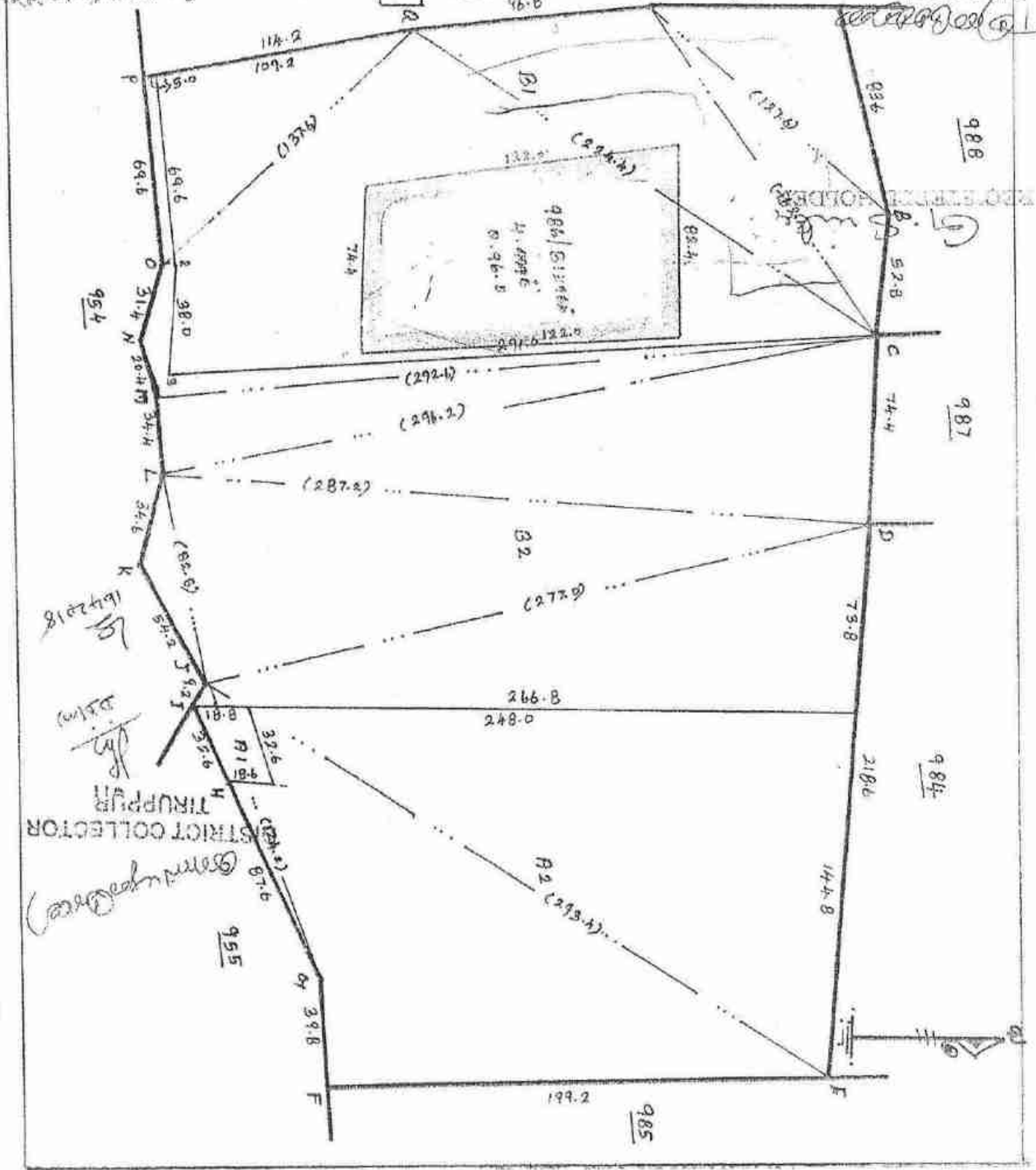
2430 2018  
 I 15 9  
*[Signature]*



புள்ளி அளவை  
15  
2018  
408  
230

9/14/16  
9/14/16

புள்ளி அளவை  
9/14/16



சென்னை மாநகராட்சி நிர்வாகம்  
பொது இடம் அளவை

சென்னை மாநகராட்சி நிர்வாகம்  
பொது இடம் அளவை

புள்ளி அளவை 10 of 99.0

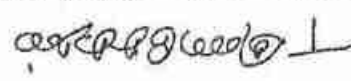

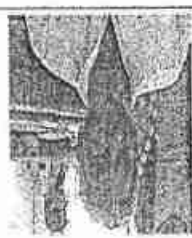



புள்ளி அளவை - 10  
புள்ளி அளவை - 10

4N 000 - 986

புள்ளி அளவை : 10  
புள்ளி அளவை : 10



2430/2018  
I Contains 15 Sheets  
11

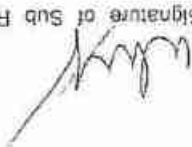
Sub Registrar Kangeyam	
I have satisfied myself as to the execution of the instrument by PALANISAMY, Tamil Nadu, India who is exempted from personal appearance under section 88(1) of the registration act.	
Additions as per recitals of document 	 Left Thumb Claim asserted by 
Additions as per recitals of document 	 Left Thumb 
Provenance of the office of the Sub Registrar of Kangeyam and fee of ₹ 20,195/- paid at 01:40 PM on the 29/05/2018 by	

S. No. 792 of 2018

I hereby certify that a sum of ₹ 5,145/- (Rupees Five Thousand One Hundred and Fourty Five only) on account of deficit stamp duty has been levied under section 41 of the Stamp Act in respect of this instrument from Mr. T. GUNASEKARAN residing at 1/241 KUPPUSAMY NADUFURAM SAMIGOUNDANPUTHUR PALLADAM TALUK, Tiruppur, Tamil Nadu, India, 641662.

Sub Registrar Kangeyam  
Date: 29/05/2018

Signature of Sub Registrar and Collector under Section 41 of the Indian Stamp Act



CERTIFICATE UNDER SECTION 42 OF THE INDIAN STAMP ACT 1899

R/Kangeyam/Book-1/2430/2018

R/Kangayam/Book-1/2430/2018



Identified By

B. [Signature]

Mr. MAHESKUMAR Son of BALASUBRAMANIAM 561/1 KUTTAI THOTTAM 63  
VELAMPALAYAM TIRUPPUR, Tiruppur, Tamil Nadu, India, 641663.

D. [Signature]

Mr. RAMASAMY Son of DENDAPANI 11/5 KARUKKAMPALAYAM  
THAYAMPALAYAM POST MUDALIPALAYAM VILLAGE, Tiruppur, Tamil Nadu,  
India, 638703.

29<sup>th</sup> day of May 2018

[Signature]  
Vimaladevi B  
Sub Registrar  
Kangayam

Registered as Number R/Kangayam/Book-1/2430/2018.



Date: 29/05/2018  
Kangayam

[Signature]  
Vimaladevi B  
Sub Registrar

2430 2018 of Book  
I 15 Parts 12 Sheet  
[Signature]



இந்திய அரசாங்கம்  
Government of India

சுனசேகரன் திருபதி  
Sunasekaran Thirupathi



பி.எஸ்.என்.008 12/12/1966  
பாலினம் : Male

5392 6526 5467



Unique Identification Authority of India

முதலாளி சாமி திருபதி ஸாமி  
ஸாமி குண்டாம் பூதூர் கே.என்.புரம்  
பல்லடாம், சம்மபலையம்  
கும்பசாமியைடுபுரம், திருப்பூர்  
தமிழ் நாடு - 641602

Address: S/O: Thirupathi,  
17241, SAMI GOUNDAN  
PUDHUR, K.N PURAM,  
PALLADAM, Sammpalayam,  
Kuppusamyaidupuram,  
Truppur, Tamil Nadu,  
641602

5392 6526 5467

ஆதார - சாதாரண மனிதனின் அதிகாரம்

1947  
1500 300 1547

mailto:uidai.gov.in

www.  
www.uidai.gov.in

T செளசேகரன்

சென் 99499 77991

2430 2018 of Book  
J 15 13 sheet  
[Signature]  
[Stamp]



Government of India



இந்திய அரசாங்கம்

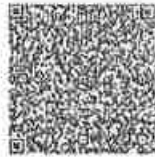
Unique Identification Authority of India

Government of India

பதிவு அடையாளம் / Enrollment No.: 1111/91442/07921

16  
மகேசுகுமார் பி  
Mahesukumar B  
S/O Balasubramaniam  
551(1) KUTTAI THOTTAM63 VELAMPALAYAM  
SEMMEDEU  
Velampalayam  
53 Velampalayam  
Paliadam Tiruppur  
Tamil Nadu 641603

02/09/2013  
34465173  
MN344661734FT



உங்கள் ஆதார் எண் / Your Aadhaar No. :

9059 7853 5539

சாதாரண மனிதனின் அதிகாரம்

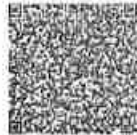


இந்திய அரசாங்கம்

Government of India



மகேசுகுமார் பி  
Mahesukumar B  
பிறந்த வருடம் / Year of Birth : 1990  
ஆண்பால் / Male



9059 7853 5539

சாதாரண மனிதனின் அதிகாரம்

தகவல்

- ஆதார் அடையாளத்திற்கான சான்று குடியரிமைக்கு அல்ல .
- அடையாள சான்றை இணையதளம் மூலம் உறுதிப்படுத்திக் கொள்ளவும் .

INFORMATION

- Aadhaar is proof of identity, not of citizenship .
- To establish identity, authenticate online .

- ஆதார் நாடு முழுவதிலும் செல்லுபடியாகும் .
- வருங்காலத்தில் அரசு மற்றும் அரசு சாரா சேவைகளை பயன்படுத்திக் கொள்ள ஆதார் உதவிகரமாக இருக்கும் .
- Aadhaar is valid throughout the country .
- Aadhaar will be helpful in availing Government and Non-Government services in future .



Unique Identification Authority of India

முகவரி  
சு. பாலசுப்பிரமணியம் 551(1),  
குட்டைத்தோட்டம் 63  
வேலம்பாளையம், செம்மேடு,  
வேலம்பாளையம், 63  
வேலம்பாளையம், திருப்பூர்,  
தமிழ் நாடு, 641603

Address:  
S/O: Belasubramaniam, 551(1),  
KUTTAI THOTTAM63  
VELAMPALAYAM, SEMMEDEU,  
Velampalayam, 63  
Velampalayam, Tiruppur, Tamil  
Nadu, 641603

9059 7853 5539



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1000 300 1847



help@uidai.gov.in



www.uidai.gov.in

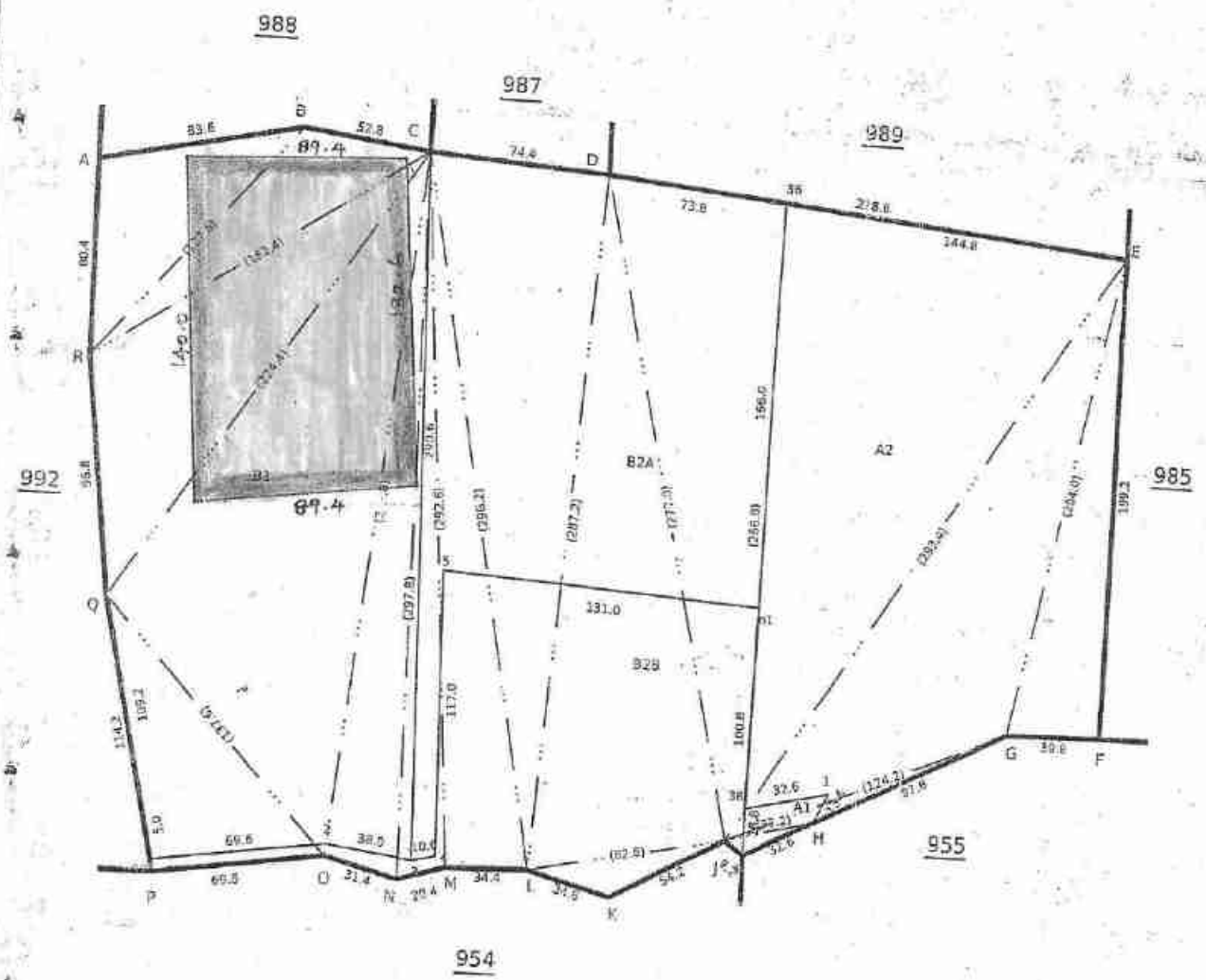
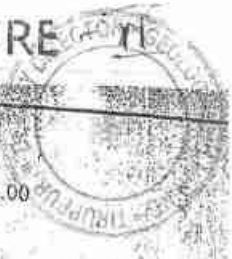
B. @2..


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2430 2018  
15  
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Office


Thiruppur  
KANGAYAM  
Village: Mudalipalayam [44]

Survey No: 956  
Area: Hect 08 Ares 99.00  
Scale: 1:2000




 → ஹவுஸ்கள் 986/B1 ன்ற 4.9955 1.21.46 - 4.9 - 3.00 - ன். தயாரி செய்துள்ள  
 உரிமம் உள்ளது ஹவுஸ்.

ச. சிவசுப்பிரமணியன்  
 ஹவுஸ் டிவிஷன்  
 திருச்சூர்  
 2023.01.31

Lease Applied Area- 



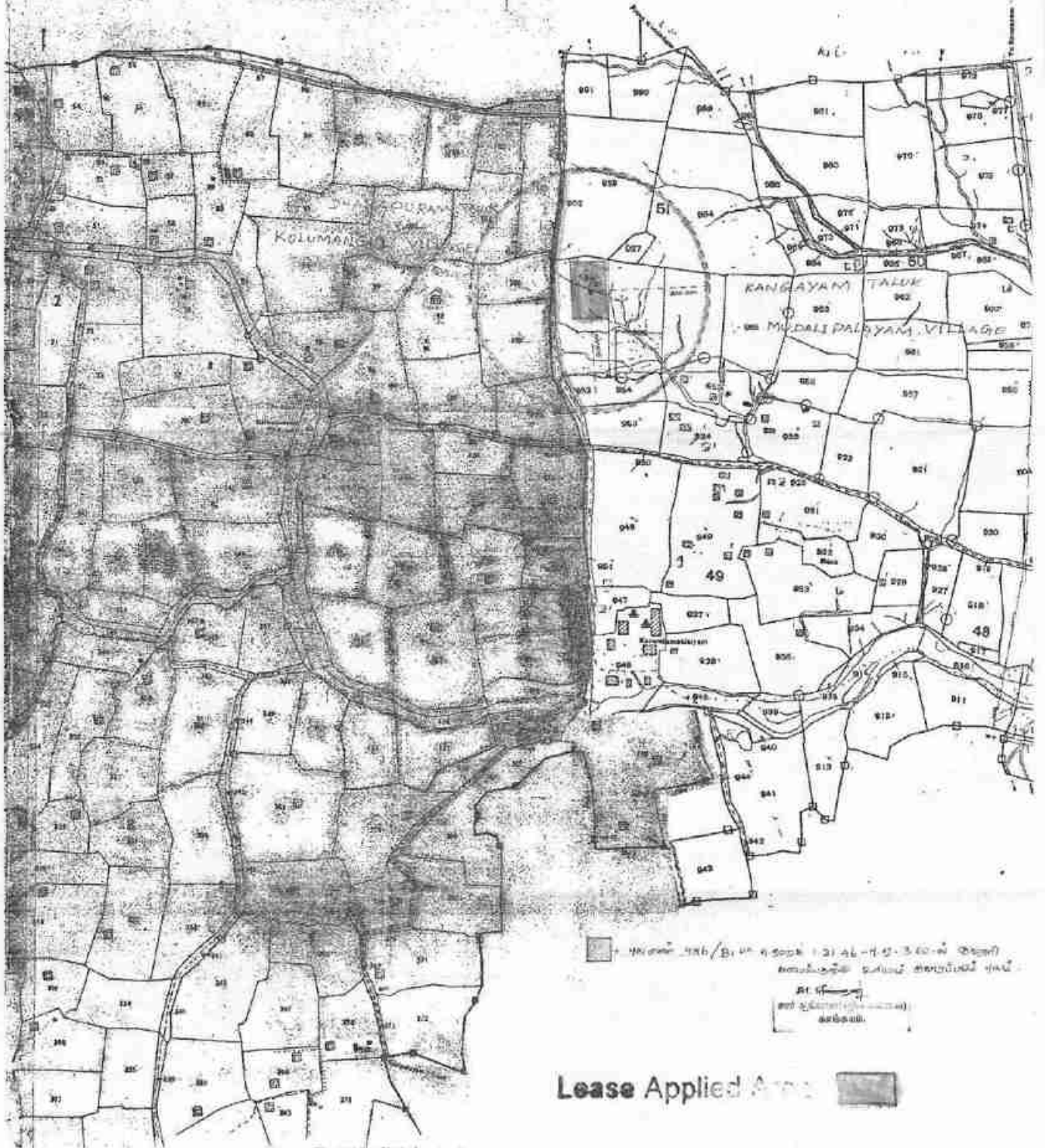




சுட்டி எண் 22/14

No. 22/14  
TALIPALAIYAM  
3rd PART

KANGAYAM TALUK



Lease Applied Area



வட்டாட்சியர் அலுவலக இணைய சேவை - நில...

[https://eservices.tn.gov.in/eservicesnew/land/chartaExtract\\_ta.htm](https://eservices.tn.gov.in/eservicesnew/land/chartaExtract_ta.htm)



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

வருவாய் கிராமம் : முதலிபாளையம்

பட்டா எண் : 1026

உரிமையாளர்கள் பெயர்

1. டி. குணசேகரன்

மனைவி

சுசீலா

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	
986	B1	3 - 65.00	5.04	--	--	--	--	R435/2006--8A /39/1415 -- 19-06-2006
		3 - 65.00	5.04					

குறிப்பு 2 :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாய்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 32/05/044/01026 /30419 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 03-02-2023 அன்று 03:27:26 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

1432 - ஆம் பரமசிவன் சிவபெருமான் கிராமப் பஞ்சாயத்து  
 கிராமப் பஞ்சாயத்து  
 கிராமப் பஞ்சாயத்து

பேர்தலைவர்	பெயர்	வயது	பொதுச் சேவை	புள்ளி பெறல்				
				பெரிய பள்ளி	சிறிய பள்ளி	மேல்நிலை	நடுநிலை	கீழ்நிலை
986 B1	சுப்பிரமணியன்	40.5	1026.0	10	10	10	10	10

*[Handwritten Signature]*  
 கிராமப் பஞ்சாயத்து  
 கிராமப் பஞ்சாயத்து  
 கிராமப் பஞ்சாயத்து

பக்கம் 2  
 கிராமப் பஞ்சாயத்து  
 கிராமப் பஞ்சாயத்து

பெயர்	வயது	பொதுச் சேவை	புள்ளி பெறல்				
			பெரிய பள்ளி	சிறிய பள்ளி	மேல்நிலை	நடுநிலை	கீழ்நிலை
986 B1	40.5	1026.0	10	10	10	10	10



அ-பதிவேடு விவரங்கள்

மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

கிராமம் : முதுலிபாளையம்

1. புல எண்	986	9. மண் வயனமும் ரகமும்	8 - 4
2. உட்பிரிவு எண்	B1	10. மண் தரம்	6
3. பழைய புல உட்பிரிவு எண்	986-B	11. தீர்வை (ரூ - ரொ)	1.38
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஈர்)	3 - 65.00
5. அரசு / ரயத்துவாரி	ரயத்துவாரி	13. மொத்த தீர்வை (ரூ - பை)	5.04
6. நிலத்தின் வகை	புஞ்சை	14. வட்டா எண்	1026
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	1.க.சீலா

குறிப்பு 1:



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 110419 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.



இந்திய அரசாங்கம்

Government of India

சுசீலா குணசேகரன்  
Susila Gunasekaran



முகப்பு DOB: 19/06/1963  
Sex: Female



3050 9968 6610

ஆதார - சாதாரண மனிதனின் அதிகாரம்

ANNEXURE



Unique Identification Authority of India

முசுலி ஸு குணசேகரன்  
மம் குணசேகரன் கல்லை  
குப்புசமீநாபுரம் பல்லடம்  
செம்மீநாபுரம் குப்புசமீநாபுரம்  
திருப்பூர் தமிழ் நாடு 641662

Address: W/O,  
Gunasekaran, 1/241, MILK  
SOCIETY OPPOSITE,  
KUPPUSAMYNADUPURAM,  
PALLADAM, Semmigalayan,  
Kuppusamynadupuram,  
Tiruppur, Tamil Nadu,  
641662

3050 9968 6610

1947  
1800 300 1947

help@uidai.gov.in

www.uidai.gov.in

**आयकर विभाग**      **भारत सरकार**  
**INCOME TAX DEPARTMENT**      **GOVT. OF INDIA**

**G SUSILA**  
**GUNASEKARAN**

**21/06/1974**  
 Permanent Account Number

**DSSPS7843L**

*G. Susila*  
 Signature




*In case this card is lost or found, kindly inform / return to:*  
 Income Tax PAN Services Unit, UTITSI  
 Plot No. 3, Sector 11, CBD Belapur,  
 Navi Mumbai - 400 614.

इस कार्ड के खोने/पाने पर कृपया सूचित करें / लौटायें :  
 आयकर पैन सेवा यूनिट, UTITSI  
 प्लॉट नं. 3, सेक्टर 11, सीडीबीएल,  
 नवी मुंबई-400 614.

அண்ணாமலைப்



பல்கலைக்கழகம்

ANNAMALAI

UNIVERSITY

Reg. No. : 080752



அறிவியற்புலம்  
FACULTY OF SCIENCE,

மே, 2010 இல்

பயன்பாட்டு நிலத்தியல்

பிரிவில்

நடத்திய தேர்வுகளில்

சந்தோஷ்குமார் ம/

கூடுதல்

மதிப்புப்புள்ளிகள் 10.00 க்கு சராசரியாக 7.04 பெற்று

முதல் வகுப்பில்

தேர்ச்சியடைந்து முறையாக அமைக்கப்பெற்ற தேர்வுக்குழுவினர் சான்றளித்தபடி,

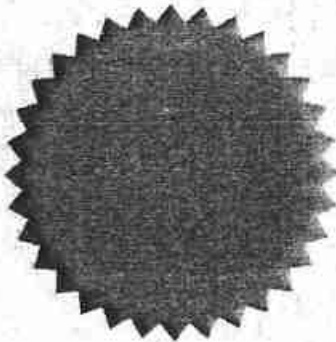
அறிவியல் நிறைஞர் பட்டம் பெறுவதற்கு உரியவர் ஆகின்றார்

என அண்ணாமலைப் பல்கலைக்கழக ஆளவை இதன்வழி அறிவிக்கின்றது.

The Senate of the ANNAMALAI UNIVERSITY hereby makes known that **SANTHOSHKUMAR M** has been admitted to the Degree of **MASTER OF SCIENCE in APPLIED GEOLOGY**, he/she having secured **OGPA of 7.04** out of **10.00** been certified by duly appointed Examiners at the Examination held in **MAY,2010** to be qualified to receive the same and that he/she was placed in **FIRST CLASS**.

பல்கலைக்கழக முத்திரை பெறுகின்றது

Given under the seal of the University



அண்ணாமலைநகர்  
Annamalainagar

நாள்:

Dated: 06/10/2010

துணை தேர்வாணையர் (கல்விசார்ந்த)  
Dy. Controller of Examinations (Academic)

Dr. M. Rathinasabapathi

பதிவாளர்  
Registrar

Dr. M. Ramanathan

துணை வேந்தர்  
Vice-Chancellor

**GOVERNMENT OF INDIA**  
**MINISTRY OF LABOUR AND EMPLOYMENT DIRECTORATE GENERAL OF**  
**MINES SAFETY**

Certificate of Practical Experience granted by the Manager to a Candidate for a Manager's/ Surveyor's/ Mining foreman/ Mining Mate/ Blasters certificate of competency examination under Metalliferous Mines Regulation, 1961.

I, M.S.Pavel being the Manager of K.Pitchampatti Multicolor Granite Mine belong to M/s. Anupkumar Lohia do hereby certify that **Thiru. M.santhoshkumar** son of **Thiru. R.Mathiyazhagan** (whose signature is appended) worked in the above mine from 10.07.2012 to 31.07.2018. During his term of work aforesaid, he has obtained practical experience as detailed overleaf. The duties connected with his work have involved continuous attendance at the mine and have been efficiently performed by him.

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

*M.S. Pavel*

(Signature with date and official seal)

(Mines Manager 1<sup>st</sup> class)  
**MANAGER (MINES)**  
**MULTICOLOUR GRANITE MINE**  
**K. PITCHAMPATTI,**  
**KARUR - TALUK & DIST.**

*M. Santhosh Kumar*  
(Signature of Candidate)

State the name of the mineral works: Multi Colour Granite



S. No.	Particulars of Practical experience (a)	Place of Experience (b) Opencast	Period of Practical experience (c)		Total Experience (e)		
			From	To	Yrs.	Months	Days
1.	As a trainee in drilling operation	Open cast	10.07.2012	24.10.2013	01	03	16
2.	As a trainee in deep hole blasting operation	Open cast	25.10.2013	31.12.2014	01	02	07
3.	Production incharge quality control and Supervisor of Earth moving Mining Machinery	Open cast	01.01.2015	31.07.2015	03	07	00
<b>GRAND TOTAL</b>					<b>06</b>	<b>00</b>	<b>23</b>
<b>In words : Six years twenty three days</b>							

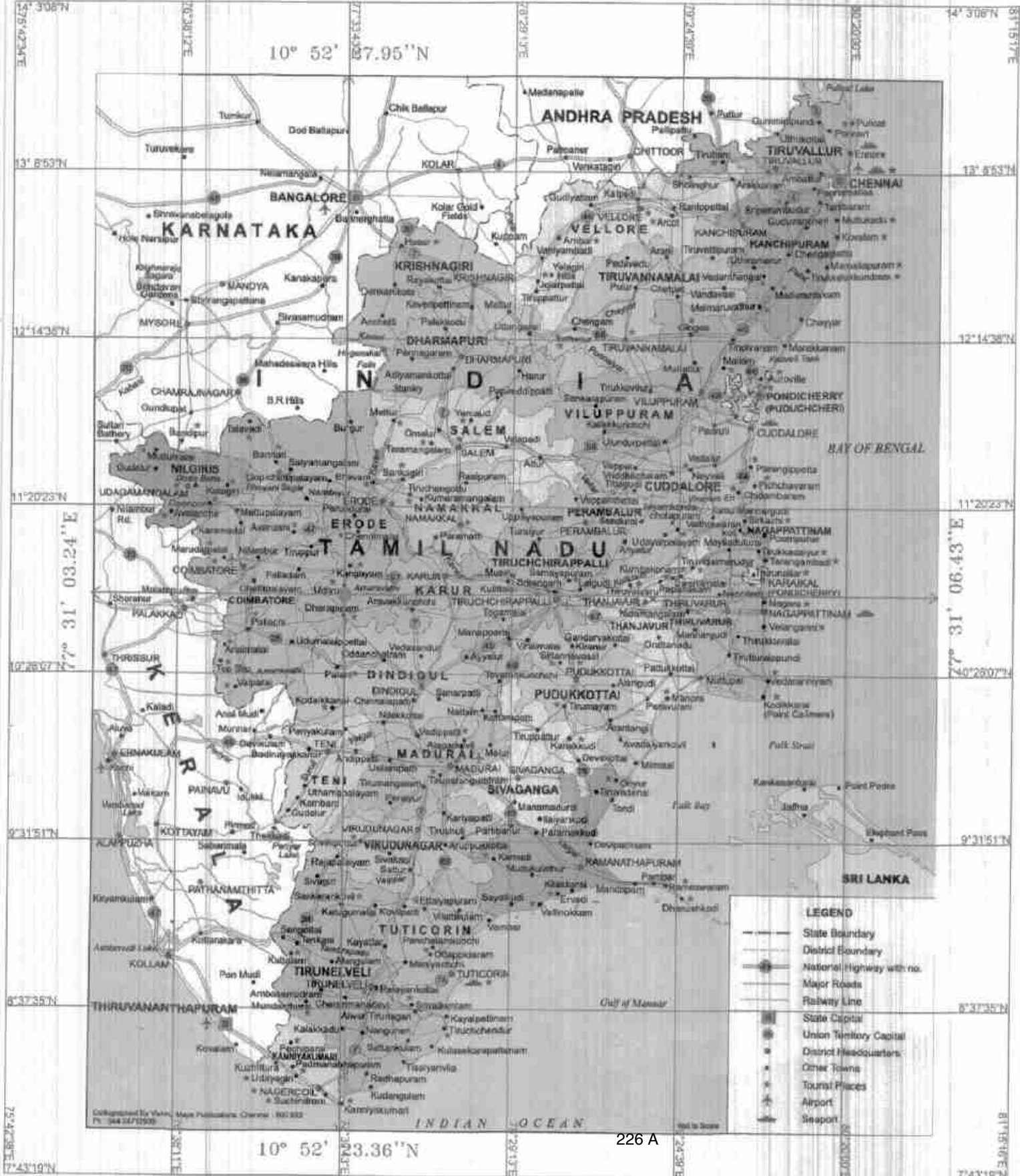
In below ground working	In open cast working	In all
Nil	Average monthly output 250m <sup>3</sup>	250m <sup>3</sup>
Nil	Average daily employment 25Nos	25Nos

Note: The average employment is less because this is mechanized mines having deep hole drilling, blasting and Heavy Earth Moving Machineryes operation.

*M. S. Senthil*  
(Signature of Candidate)

*M. S. Senthil*  
(Signature with date and official seal)

(Mines Manager 1<sup>st</sup> class)  
**MANAGER (MINES)**  
**MULTICOLOUR GRANITE MINE**  
**K. PITCHAMPATTI,**  
**KARUR - TALUK & DIST.**



**PLATE NO: I**

DATE OF SURVEY : 15.02.2024

**APPLICANT:**

Tmt.G.SUSILA,  
W/O.GUNASEKARAN,  
1/241,MILK SOCIETY OPPOSITE,  
KUPPUSAMYNAIDUPURAM,  
SEMMIPALAYAM,PALLADAM,  
TIRUPPUR-641 662.

**LOCATION OF QUARRY  
LEASE APPLIED AREA:**

SF.Nos : 986/B1(P),  
EXTENT : 1.21.46 HA,  
VILLAGE : MUTHALIPALAYAM,  
TALUK : KANGEYAM,  
DISTRICT : TIRUPPUR,  
STATE : TAMILNADU.

**INDEX**

Q.L.APPLIED AREA : ●

TOPO SHEET NO. : 58 F/09

LATITUDE : 10° 52' 23.36"N to 10° 52' 27.95"N  
LONGITUDE : 77° 31' 03.24"E to 77° 31' 06.43"E

**LOCATION PLAN**

SCALE 1:24,00,000

**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  
LEASEMAP AUTHENTICATED  
BY STATE GOVERNMENT

M. S. Anthush Kumar  
M.SANTHOSH KUMAR, M.Sc.,  
QUALIFIED PERSON

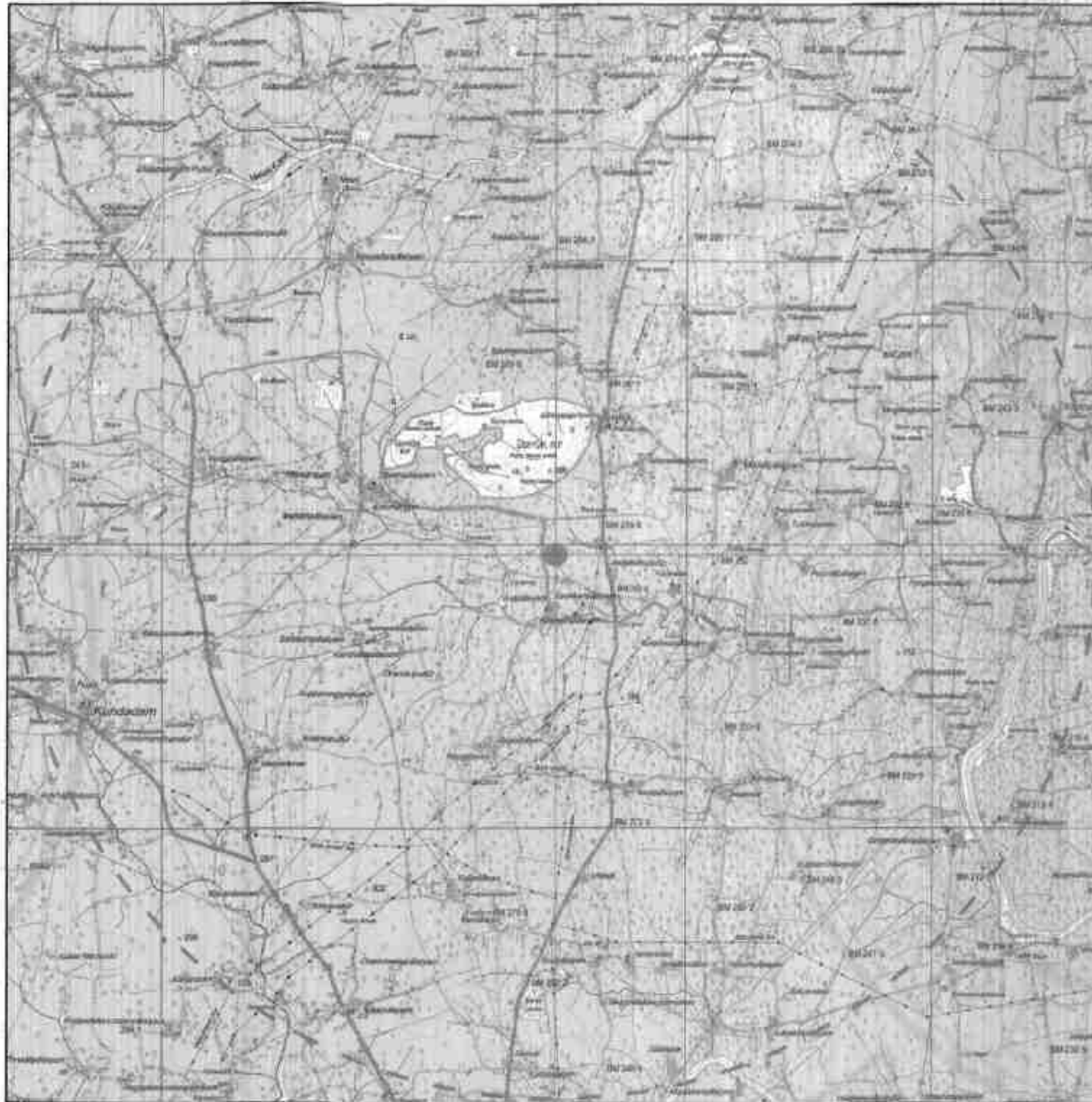
Under Rule 15(1)(a) and (b) of MCR, 2016

INDEX



Express highway; with toll; with bridge; with distance stone.....	
Roads metalled; according to importance.....	
Roads, double carriageway; according to importance.....	
Unmetalled road, Cart-track, Pack-track with pass, Foot-path.....	
Streams; with track in bed; undefined, Canal.....	
Dams; masonry or rock-filled; earthwork, Weir.....	
River; dry with water channel; with island & rocks, Tidal river.....	
Submerged rocks, Shoal, Swamp, Reeds.....	
Wells; lined; unlined, Tubewell, Spring, Tanks; perennial; dry.....	
Embankments; road or rail; tank, Broken ground.....	
Railways, broad gauge: double: single with station; under constrm.....	
Railways, other gauges: double; single with distance stone; do.....	
Mineral line or tramway, Kiln, Cutting with tunnel.....	
Contours with sub-features, Rocky slopes, Cliffs.....	
Sand features: (1)flat, (2)sand-hills(permanent), (3)dunes(shifting).....	
Towns or Villages; inhabited; deserted, Fort.....	
Huts; permanent; temporary, Tower, Antiquities.....	
Temple, Chhatri, Church, Mosque, Idgah, Tomb, Graves.....	
Lighthouse, Lightship, Buoys; lighted; unlighted, Anchorage.....	
Mine, Vine on trellis, Grass, Scrub.....	
Palms; palmyra; other, Plantain, Conifer, Bamboo, Other trees.....	
Areas; cultivated; Wooded, Surveyed trees.....	
Boundary, international.....	
Boundary, state; demarcated; undemarcated.....	
Boundary, district; subdivision; tahsil or taluk; forest.....	
Boundary pillars; surveyed; unlocated.....	
Heights, triangulated: station; point; approximate.....	±200    .200    .20
Bench-mark; geodetic; tertiary, canal.....	BM 03-3    0.0000
Post office, Telegraph office, Overhead tank.....	
Rest house or inspection bungalow, Circuit house, Police station....	
Camping Ground, Forest; reserved; protected.....	
Spaces names; administrative; locality or tribal.....	KVRI    NGA
Hospital, Dispensary, Veterinary; Hospital/Dispensary.....	
Aerodrome, Helipad, Tourist site.....	
Powerline; with pylons surveyed; with poles unsurveyed.....	

10° 57' 53.22"N



77° 25' 34.12"E

77° 36' 35.49"E

10° 46' 58.09"N

TOPO SHEET NO. : 58 F/ 09

LATITUDE : 10° 52' 23.36"N to 10° 52' 27.95"N  
 LONGITUDE : 77° 31' 03.24"E to 77° 31' 06.43"E

10km RADIUS :

Q.L. APPLIED AREA 227 A :

**APPLICANT:**

Tmt.G.SUSILA,  
 W/O.GUNASEKARAN,  
 1/241,MILK SOCIETY OPPOSITE,  
 KUPPUSAMYNDAIDUPURAM,  
 SEMMIPALAYAM,PALLADAM,  
 TIRUPPUR-641 662.

**LOCATION OF QUARRY LEASE APPLIED AREA:**

SF.Nos : 986/81(P),  
 EXTENT : 1.21.46 HA,  
 VILLAGE : MUTHALIPALAYAM,  
 TALUK : KANGEYAM,  
 DISTRICT : TIRUPPUR,  
 STATE : TAMILNADU.

PLATE NO - I-A

DATE OF SURVEY : 11.01.2024

TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10km RADIUS

SCALE: 1:1,00,000

**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 LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

*M. Santhosh Kumar*  
 M.SANTHOSHKUMAR,M.Sc.,  
 QUALIFIED PERSON

Under Rule 15(i)(a)and(b)of MCR,2018

LANDUSE PATTERN

DESCRIPTION	PERCENTAGE
ROADS/INFRASTRUCTURE	(20%)
HABITATION/ODAI	(10%)
TREES / RESERVE FOREST	(15%)
AGRICULTURAL LAND	(15%)
QUARRY PIT \ CRUSHER	(15%)
BARREN LAND	(25%)

OCTOBER TO DECEMBER

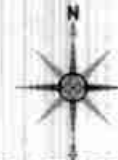


PLATE NO: I-B

DATE OF SURVEY : 15.02.2024

1Km Radius :  
500m Radius :  
Q.L.Applied Area :  
TOPO SHEET NO. : 58 F/09



LATITUDE : 10° 52' 23.38"N to 10° 52' 27.95"N  
LONGITUDE : 77° 31' 03.24"E to 77° 31' 06.43"E

APPLICANT:

Tmt.G.SUSILA,  
W/O.GUNASEKARAN,  
1/241,MILK SOCIETY OPPOSITE,  
KUPPUSAMYNAIDUPURAM,  
SEMMIPALAYAM,PALLADAM,  
TIRUPPUR-641 662.

LOCATION OF QUARRY

LEASE APPLIED AREA:

SF.Nos : 986/B1(P),  
EXTENT : 1.21.46 HA,  
VILLAGE : MUTHALIPALAYAM,  
TALUK : KANGAYAM,  
DISTRICT : TIRUPPUR,  
STATE : TAMILNADU.

INDEX

APPROACH ROAD	
VILLAGE ROAD	
PANCHAYAT ROAD	
HABITATION / ODAI	
TREES	
AGRICULTURAL LAND	
QUARRY PIT/ CRUSHER	
WIND DIRECTION	
BARREN LAND	
INFRASTRUCTURE/ WIND MILL	
RESERVE FOREST	

ENVIRONMENTAL & LAND USE 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 LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

*M. Santosh Kumar*  
M.SANTHOSHKUMAR,M.Sc.,  
QUALIFIED PERSON  
Under Rule 15(i)(a)and(b)of MCR,2018

Towards  
Thoyampalayam

Towards  
Mudalpalayam

Towards  
Tammareddipalayam

Towards  
Puliampatti

JULY TO SEPTEMBER

Towards  
Karukkampalayam 228 A





PLATE NO-I-C

DATE OF SURVEY : 15.02.2024

**APPLICANT:**

Tmt.G.SUSILA,  
W/O.GUNASEKARAN,  
1/241,MILK SOCIETY OPPOSITE,  
KUPPUSAMYNADUPURAM,  
SEMMIPALAYAM,PALLADAM,  
TIRUPPUR-641 662.

**LOCATION OF QUARRY**

**LEASE APPLIED AREA:**

SF.Nos : 986/B1(P),  
EXTENT : 1.21.46 HA,  
VILLAGE : MUTHALIPALAYAM,  
TALUK : KANGEYAM,  
DISTRICT : TIRUPPUR,  
STATE : TAMILNADU.

**INDEX**

Q.LEASE APPLIED AREA	
SH ROAD	
PANCHAYAT ROAD	
VILLAGE ROAD	
APPROACH ROAD	

**ROUTE MAP**

Not To Scale

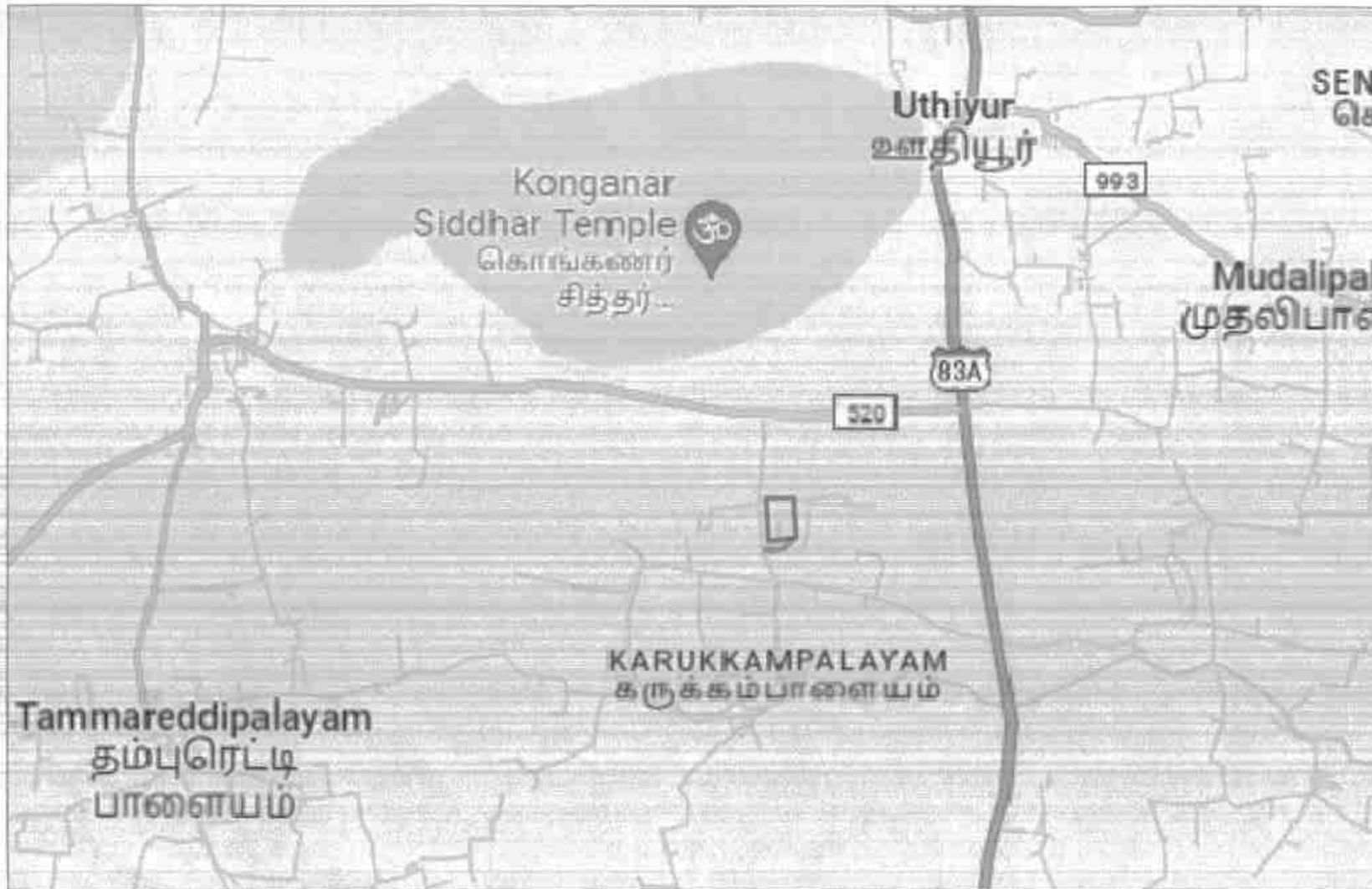
**PREPARED BY :**

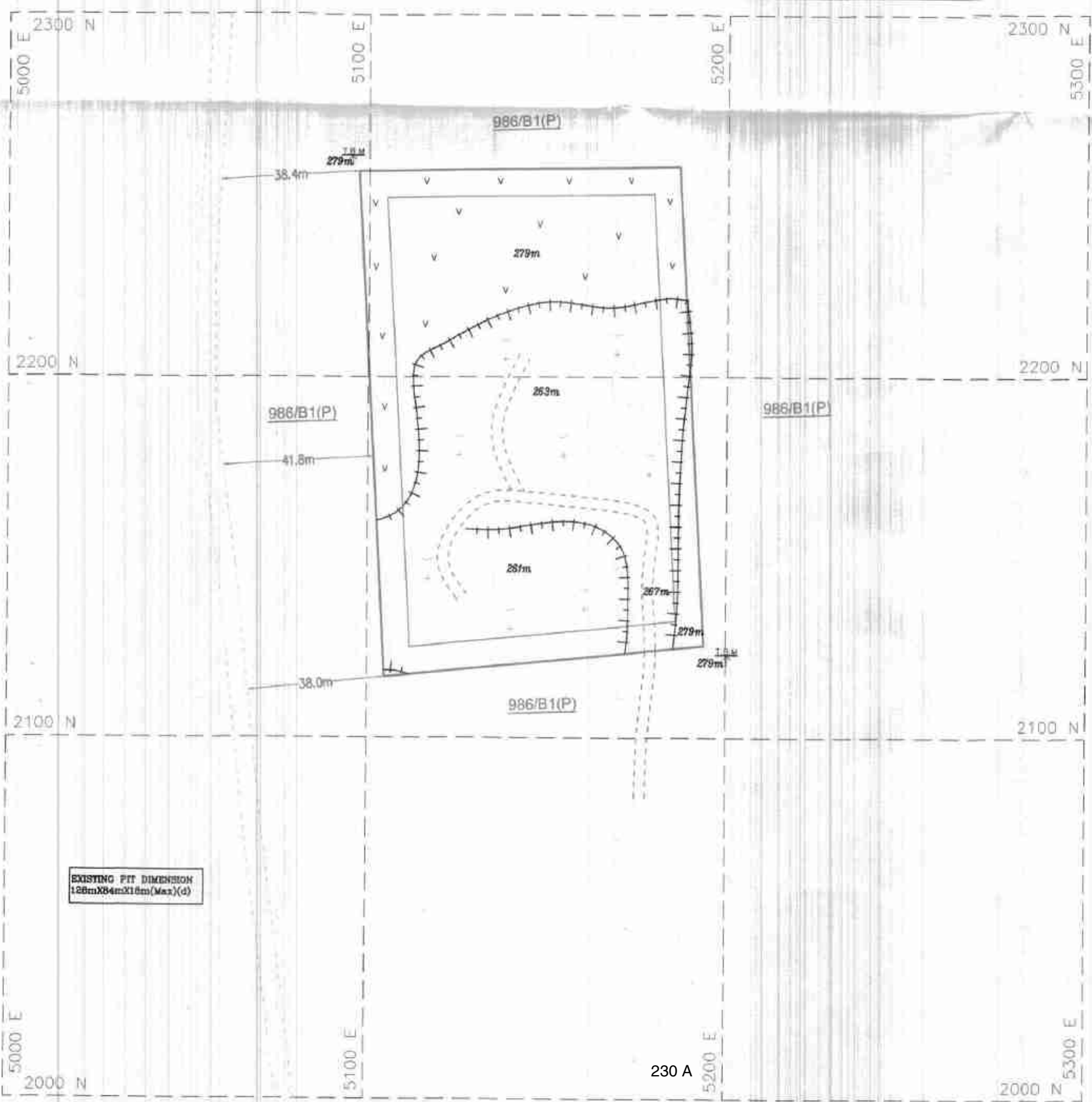
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

*M. Santhosh Kumar*

M.SANTHOSHKUMAR,M.Sc.,  
QUALIFIED PERSON

Under Rule 15(1)(a)and(b)of MCR,2016





**PLATE NO-II**  
DATE OF SURVEY : 15.02.2024

**APPLICANT:**  
Tmt.G.SUSILA,  
W/O.GUNASEKARAN,  
1/241.MILK SOCIETY OPPOSITE,  
KUPPUSAMYNADUPURAM,  
SEMMIPALAYAM,PALLADAM,  
TIRUPPUR-641 662.

**LOCATION OF QUARRY LEASE APPLIED AREA:**

SF.No.s : 986/B1(P).  
EXTENT : 1.21.46 HA.  
VILLAGE : MUTHALIPALAYAM.  
TALUK : KANGAYAM.  
DISTRICT : TIRUPPUR.  
STATE : TAMILNADU.

**INDEX**

QUARRY LEASE BOUNDARY	
7.5m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
STRIKE & DIP	
GRAVEL	
APPROACH ROAD	
ROUGH STONE	
QUARRY PIT	
QUARRY ROAD	

**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 LEASEMAP AUTHENTICATED BY STATE GOVERNMENT  
*M. Santhosh Kumar*  
M.SANTHOSH KUMAR, M.Sc.,  
QUALIFIED PERSON  
Under Rule 150(a) and (b) of MCR, 2016



**EXISTING PIT DIMENSION**  
128m X 94m (Max) (d)

**SITE SERVICES**  
(Proposed)  
A - OFFICE  
B - STORE ROOM  
C - FIRST AID ROOM  
D - REST SHELTER  
E - TOILET

**PRESENT & POST LAND USE PATTERN**

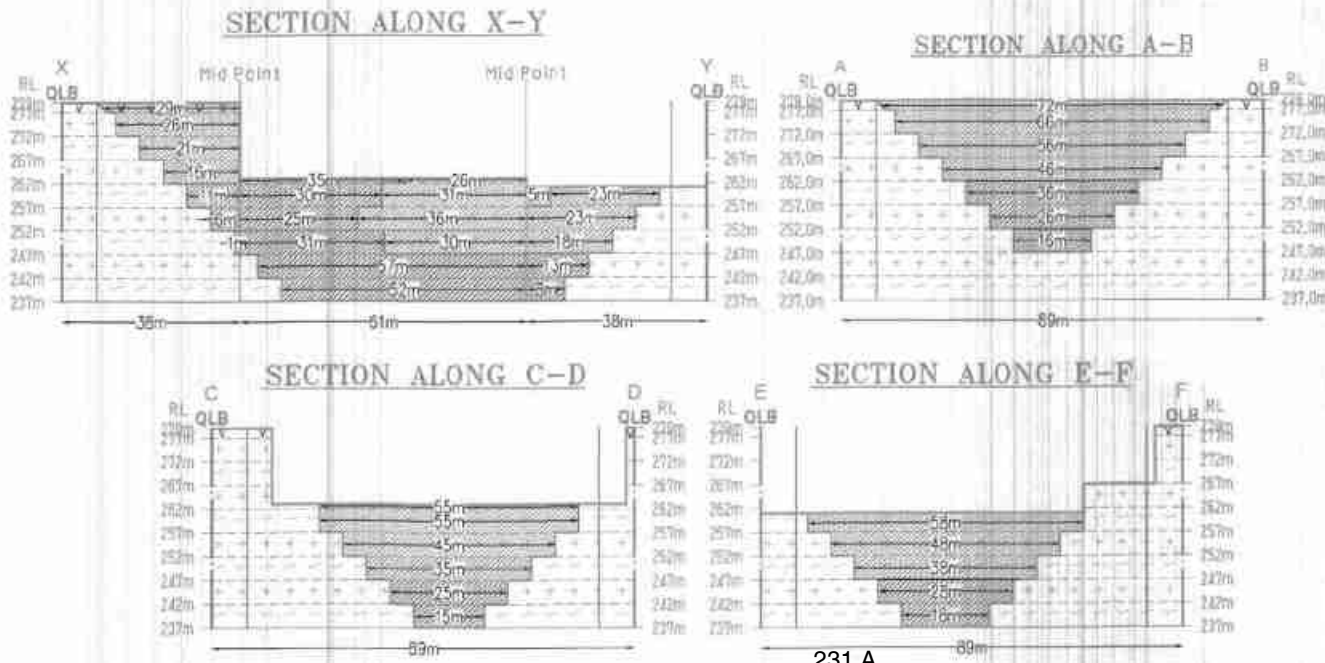
DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER QUARRYING	0.75.7	1.00.6
INFRASTRUCTURE	Nil	0.01.0
ROADS	0.01.0	0.02.0
GREEN BELT	Nil	0.13.9
UN-UTILIZED AREA	0.44.7	0.03.9
<b>GRAND TOTAL</b>	<b>1.21.4</b>	<b>1.21.4</b>

- I Yr PLANTATION
- II Yr PLANTATION
- III Yr PLANTATION
- IV Yr PLANTATION
- V Yr PLANTATION
- I Yr EXCAVATION
- II Yr EXCAVATION
- III Yr EXCAVATION
- IV Yr EXCAVATION
- V Yr EXCAVATION

**PLATE NO-III**  
DATE OF SURVEY : 15.02.2024

**APPLICANT:**  
Mr.G.SUSILA,  
W/O.GUNASEKARAN,  
1/241 MILK SOCIETY OPPOSITE,  
KUPPUSAMYNAIDUPURAM,  
SEMPALAYAM,PALLADAM,  
TIRUPPUR-641 662.

**LOCATION OF QUARRY LEASE APPLIED AREA:**  
SF.Nos : 986/B1(P),  
EXTENT : 1.21.46 HA,  
VILLAGE : MUTHALIPALAYAM,  
TALUK : KANGAYAM,  
DISTRICT : TIRUPPUR,  
STATE : TAMILNADU.



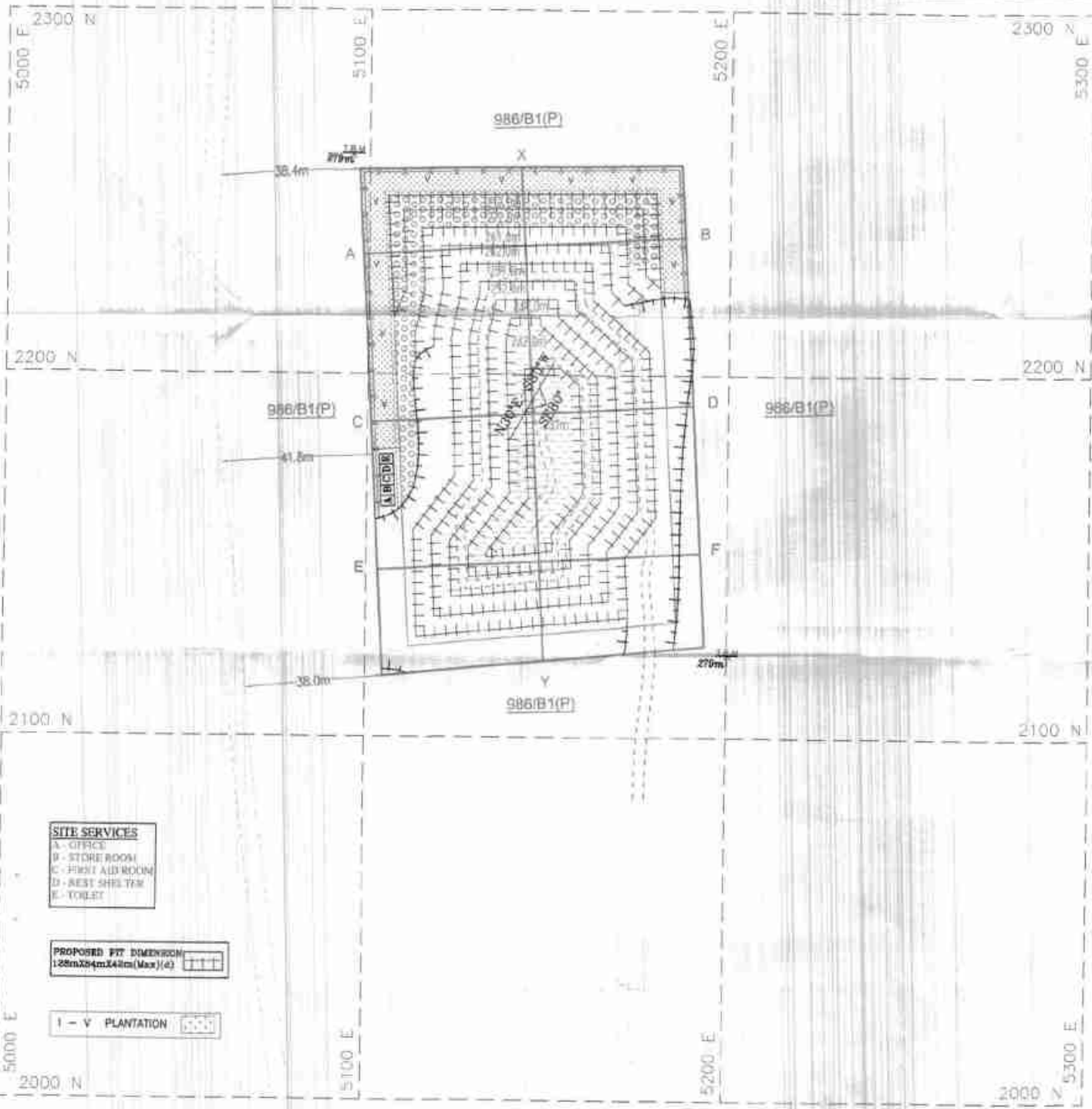
- INDEX**
- QUARRY LEASE BOUNDARY
  - 7.5m SAFETY DISTANCE
  - TEMPORARY BENCH MARK
  - STRIKE & DIP
  - APPROACH ROAD
  - QUARRY PIT
  - QUARRY ROAD
  - GRAVEL
  - ROUGH STONE

**TOPOGRAPHY, GEOLOGICAL,  
YEARWISE DEVELOPMENT &  
PRODUCTION PLAN & SECTIONS**  
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 LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

M. Sankar  
M.SANTHOSH KUMAR, M.Sc.,  
QUALIFIED PERSON  
Under Rule 150(c) and (d) of MCR, 2016



**SITE SERVICES**  
 A - OFFICE  
 B - STORE ROOM  
 C - FIRST AID ROOM  
 D - REST SHELTER  
 E - TOILET

**PROPOSED PIT DIMENSION**  
 128m x 84m (Max) (4)

I - V PLANTATION

**PLATE NO-IV**  
 DATE OF SURVEY : 15.02.2024

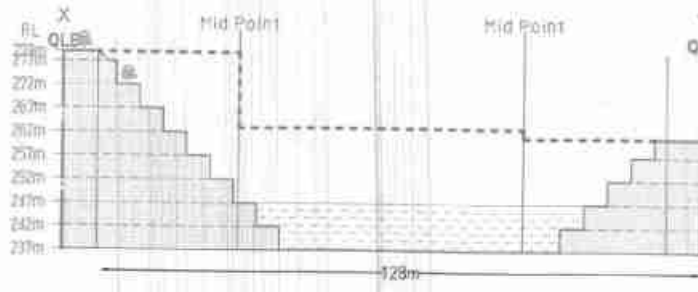
**APPLICANT:**  
 Mr. G. SUSELA,  
 W/O. GUNASEKARAN,  
 1/241, MILK SOCIETY OPPOSITE,  
 KUPPUSAMYNADUPURAM,  
 SEMMIPALAYAM, PALLADAM,  
 TRUPPUR-641 662.

**LOCATION OF QUARRY**  
**LEASE APPLIED AREA:**  
 SF.No. : 986/B1(P),  
 EXTENT : 1.21.46 HA,  
 VILLAGE : MUTHALPALAYAM,  
 TALUK : KANGAYAM,  
 DISTRICT : TRUPPUR,  
 STATE : TAMILNADU.

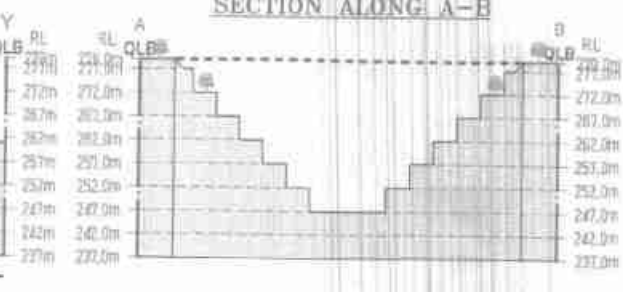
**INDEX**

- QUARRY LEASE BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- STRIKE & DIP
- APPROACH ROAD
- QUARRY PIT
- QUARRY ROAD
- EXISTING LANDFORM
- OLD SURFACE LEVEL
- FINISHED SURFACE LEVEL
- FENCING
- PROPOSED GARLAND DRAIN
- PROPOSED WATER STORAGE
- REHABILITATED AREA
- TREES

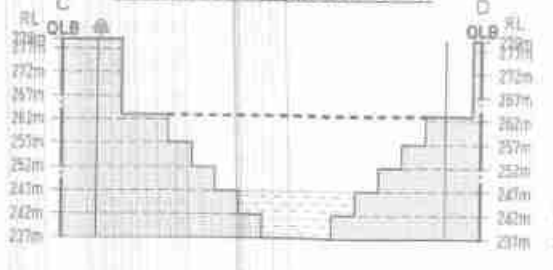
**SECTION ALONG X-Y**



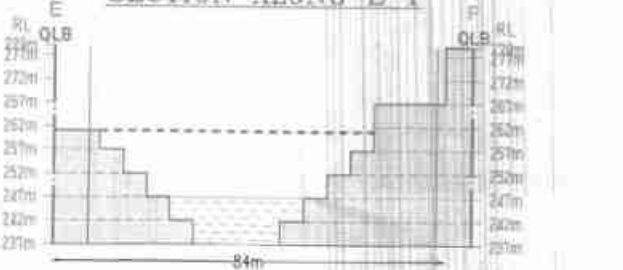
**SECTION ALONG A-B**



**SECTION ALONG C-D**



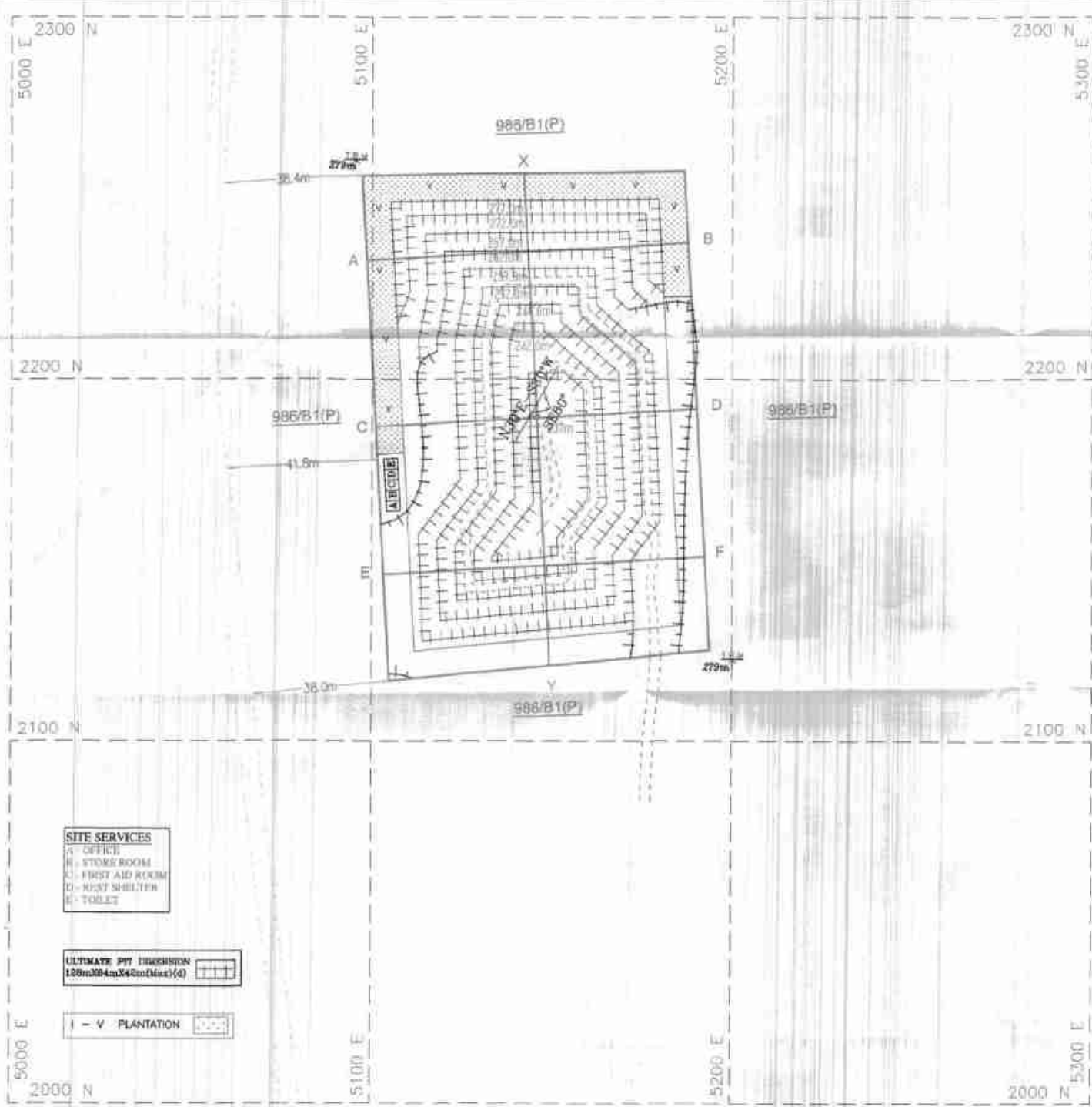
**SECTION ALONG E-F**



**PROGRESSIVE QUARRY**  
**CLOSURE PLAN & SECTIONS**  
 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 LEASEMAP AUTHENTICATED BY STATE GOVERNMENT.  
 M. Sathish Kumar  
 M. SATHISHKUMAR, V.S.O.  
 QUALIFIED PERSON  
 Under Rule 15(0) and (b) of MCR, 2018





**ULTIMATE PVI DIMENSION**  
 128m x 384m x 42m (Max) (4)

I - V PLANTATION

**PLATE NO-V**  
 DATE OF SURVEY : 15.02.2024

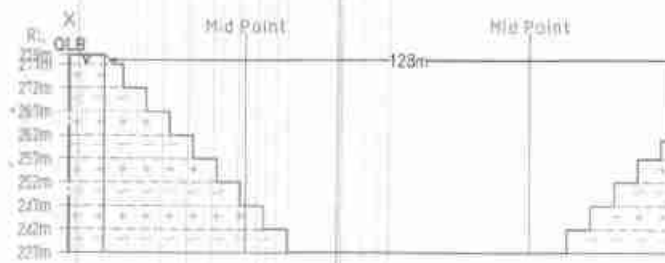
**APPLICANT:**  
 Mr. G. SUSILA,  
 W/O. GUNASEKARAN,  
 1/241, MILK SOCIETY OPPOSITE,  
 KUPPUSAMYNAIDUPURAM,  
 SEMMIPALAYAM, PALLADAM,  
 TIRUPPUR-641 662.

**LOCATION OF QUARRY LEASE APPLIED AREA:**  
 SF Nos : 986/B1(P),  
 EXTENT : 1.21.46 HA,  
 VILLAGE : MUTHALPALAYAM,  
 TALUK : KANGEYAM,  
 DISTRICT : TIRUPPUR,  
 STATE : TAMILNADU.

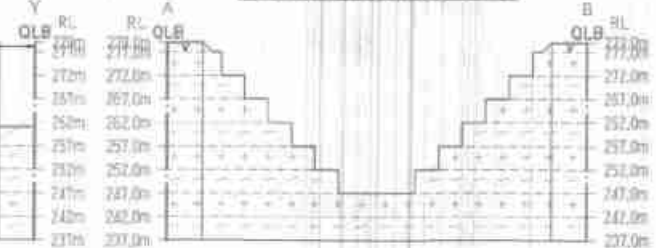
**INDEX**

QUARRY LEASE BOUNDARY	
7.5m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
STRIKE & DIP	
GRAVEL	
APPROACH ROAD	
ROUGH STONE	
QUARRY PIT	
QUARRY ROAD	

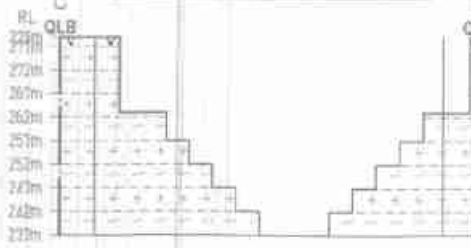
**SECTION ALONG X-Y**



**SECTION ALONG A-B**



**SECTION ALONG C-D**



**SECTION ALONG E-F**



**CONCEPTUAL PLAN & SECTIONS**  
 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 LEASMAP AUTHENTICATED BY STATE GOVERNMENT.  
 M. Sathish  
 M. SATHISHRUMAR, M.Sc.,  
 CHARTERED PERSON  
 Under Rule 15(X)(a) and (b) of MCR, 2018

**HYDRO - GEOLOGICAL STUDIES AT TMT. SUSILA  
ROUGH STONE AND GRAVEL QUARRY  
MUDALIPALAYAM VILLAGE, KANGEYAM TALUK,  
TIRUPPUR DISTRICT, TAMILNADU.**

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**HYDRO - GEOLOGICAL STUDIES AT TMT. G. SUSILA  
ROUGH STONE AND GRAVEL QUARRY MUDALIPALAYAM VILLAGE,  
KANGEYAM TALUK, TIRUPPUR DISTRICT, TAMILNADU.**

**1. INTRODUCTION**

Proprietor of Tmt. G. Susila Rough Stone and Gravel Quarry Over an extent of 1.21.46 hectares of patta land in S.F. No 986/B1 (Part) of Mudalipalayam Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State on the hydrological regime of the area, The above area has been studied & investigated for finding out Ground water level and aquifer thickness and water quality in and around mine lease area. The electrical resistivity method in Rough stone and gravel quarry and genesis rock with determine the shallow and deeper freshwater aquifer in the proposed mining area in Mudalipalayam Village.

**1.1. Scope of Study**

In the present study, the main aim of the shallow and deeper aquifer investigation through electrical resistivity VES, Method is used to measure the apparent resistivity of the Study area. The present study is estimating the ground water level in Mudalipalayam village, Kangeyam Taluk, Tiruppur District, Tamil Nadu village proposed leasehold area and their surrounding area. The study area is mostly covered by Water level, type of sand, type of rock and their basement rock characters. The main aim of the study is to determine the water table and flow movement of this Lease and surrounding area (Fig.1).

## 1.2. Profiles in the Study Area.

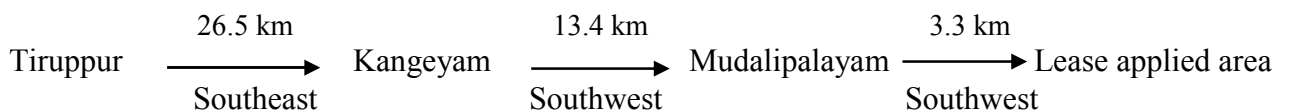
Name of the Lessee	: <b>Tmt. G. Susila</b>
Survey No	: 986/B1 (Part)
Extent	: 1.21.46 hectares.
Village	: Mudalipalayam village
Taluka	: Kangeyam Taluk
District	: Tiruppur
State	: Tamil Nadu

## 2. STUDY AREA DESCRIPTION



*Figure.1. Shows proposed mine lease area*

The lease applied area is located about 32.2km Southeast side of Tiruppur town, 15.2km Southwest side of Kangeyam town and 3.3km Southwest side of Mudalipalayam Village.



## 2.1 Topography of the Lease Area and Its Surrounding Environments:

The lease applied area is exhibits plain topography. The area has gentle sloping towards Southeast side and altitude of the area is 279m above from Mean Sea Level. The area is covered by 2m thickness of Gravel and followed by Massive Charnockite which is clearly inferred from the existing quarry pit (Fig.2).

The water table is found at a depth of 58m to 62m. Average annual rainfall is about 607 mm.



*Figure 2. Topography and Outcrop in the lease area*

### 3. REGIONAL GEOLOGY OF CHENGALPATTU DISTRICT

Tiruppur district of Tamil Nadu forms a part of southern Granulitic terrain and is predominantly occupied by crystalline rocks of Archaean to late Proterozoic age. Regionally, the rocks can be grouped under five categories namely

- i. Charnockite Group represented by Charnockite, Pyroxene Granulite and Magnetite Quartzite,
- ii. Peninsular Gneissic Complex (II) comprising hornblende-biotite gneiss,
- iii. Basic intrusive include Pyroxinite / Dunite
- iv. Younger intrusive comprising, Nepheline-Syenite, Pink Granite, Pegmatite and Quartz veins and
- v. Quaternary sediments of Kankar and soil.

#### Stratigraphy Sequence of Tiruppur District

Age	Group	Lithology
<b>Holocene</b>		Block cotton soil/clay±gypsum
<b>Cenozoic</b>		Kankar/ Calc-tufa
<b>Neoproterozoic</b>	Acid Intrusive	Quartz veins Pegmatite Pink Granite
	Sivamalai Syenite Complex	Nepheline - Syenite
	Chalk Hills (Basic Intrusives)	Pyroxenite/ Dunite
<b>Archean - Paleoproterozoic</b>	Peninsular Gneissic Complex (II) PGC (II)	Pink Granite Gneiss Hornblende Biotite Gneiss
<b>Archean</b>	Charnockite Group	Charnockite (Unclassified) Pyroxene granulite Banded Magnetite Quartzite

Tiruppur District is predominantly occupied by hornblende Biotite gneisses of PGC (II) with enclaves of Magnetite Quartzite, Pyroxene Granulite and Charnockite. The area exposes several bands of Pyroxene Granulite which is medium grained, medium to dark grey in colour and stand out prominently in the gneissic country generally parallel to regional foliation. Charnockite is coarse

grained, massive, many places it is foliated, grey coloured and greasy and exposed as boulder outcrops and small knolls. It is well exposed in Central, Western and Southern parts of the Tiruppur District. The general strike of foliation varies from ENE-WSW, E-W with dipping towards NW and N respectively.

Hornblende-Biotite gneiss is well foliated, medium to coarse grained, pale grey and exposed as sheets and small knolls. Pink Granite gneiss occurs as thin bands and lensoidal bodies. It is a medium grained rock composed of alternating bands of mafic (mainly of biotite and hornblende) and felsic (Feldspar and Quartz) minerals. It is well recognized in Avinashi area.

Basic Intrusives such as Pyroxenite/dunite occurs as Outcrop and lensoidal bodies in the country rock and mostly concordant to the regional foliation. Many basic intrusive are reported in south and south-east of Tiruppur town. The trend of these bodies is east-west.

Nepheline syenite is a leucocratic, coarse grained rock and composed mainly of Feldspar with Nepheline and shows pitted appearance due to removal of Nepheline. This alkaline rock is available in and around Sivanmalai area only.

Acid intrusives comprising pink granite, pegmatite and quartz veins are traversed country rocks in micro (cm wide-meter long) to meso-scale (few meter wide and several meter long) extend. Granite is exposed around 9 km SW of Avinashi. Small scale pegmatite and quartz veins are noticed almost in all the rock types.

Acid intrusives are overlain by sediments of Quaternary age, represented by Kankar and black cotton soil with Gypsum. Most of the area is covered by brown and red brown soil. Some part of the area covered with black cotton soil contains Gypsum as lumps. Black cotton soil covers southwestern part of the district.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite is N40°E – S40°W with dipping towards SE60°.

#### **4. HYDROGEOLOGY**

##### **(i) Major Geological formations:**

Tiruppur District is underlain by crystalline metamorphic complex in the western parts of district and sedimentary tract in eastern side. An area of 4551 Sq.km is covered by crystalline rocks (63%) and 2671 Sq.km is covered by sediments (37%). The general geological sequence of formation is given below:



**Quaternary** - Laterites, Sands and Clays

**Tertiary** - Sandstone, Gravels and Clays

**Cretaceous** - Limestone, Calcareous Sandstone and Clay unconformity.

**Archaean** - Charnockites, Gneisses, Granites, Dolerites and Pegmatite

- The major part of the area is covered by metamorphic crystalline rocks of Charnockite, granitic gneiss of Archaean age intruded by dolerite dykes and pegmatite veins. These rocks are highly metamorphosed and have been subjected to very severe folding, crushing and faulting.
- Ground Water occurs under the phreatic condition and wherever there are deep seated fractures, it occurs under semi-confined to confined conditions.
- Occurrence of Ground Water in hard rock depends upon the intensity and depth of weathering, fractures and fissures present in the rocks.
- Granites and gneisses yield moderately compared to the yield in Charnockites.
- Depth of well in hard rock generally ranges between 8 and 15m below ground level.
- Generally yield in open wells ranges from 30 to 250m<sup>3</sup> /day and in bore well between 260 and 430 m<sup>3</sup> /day. The weathered thickness varies from 2.5 m to 42m in general there are 3 to 5 fracture zones within 100 m and 1 to 4 fracture zones between 100 and 200 m.

The Cretaceous formation is represented by Arenaceous Lime stone, Calcareous sand - stone and marl.

The Tertiary formation is argillaceous comprising of Silty clay stones, argillaceous Lime stone.

The Quaternary deposits represented by the river deposits of Ponnaiyar and Varahanadhi spread over as patches in Tiruppur District. The alluvium consists of unconsolidated sands, gravelly sands, clays and clayey sands. The thickness of the sands ranges between 15 and 25 m in the alluvial formation which also form potential aquifers. In some areas, sand stone of tertiary formation are the potential groundwater reservoirs.

### **(ii) Aquifer Systems:**

Occurrence and storage of groundwater depend upon three factors viz., Geology, Topography and rainfall in the form of precipitation. Apart from Geology, wide variation in topographic profile and intensity of rainfall constitutes the prime factors of groundwater recharge. Aquifers are part of the more complex hydro geological system and the behavior of the entire system cannot be interpreted easily. In hard rock terrain the occurrence of Ground Water is limited to top weathered,

fissured and fractured zone which extends to maximum 30 m on an average it is about 10-15 m in Tiruppur District.

In Sedimentary formations, the presence of primary inter granular porosity enhances the transmitting capacity of groundwater where the yield will be appreciable. The sedimentary area which occupies the eastern part of the District along the coastal tract is more favorable for groundwater recharge. Ground Water occurs both in semi confined and confined conditions. A brief description of occurrence of groundwater in each formation is furnished below.

#### **Alluvial Formations**

In the river alluvium groundwater occurs under water table condition. The maximum thickness is 37 m and the average thickness of the aquifer is approximately 12 m. These formations are porous and permeable which have good water bearing zones.

#### **Tertiary Cuddalore sandstone**

Tertiary formations are represented by Cuddalore Sandstone and characterized as fluvial to brackish marine deposits. Predominantly this formation is divided into Lower and Upper Cuddalore formations. In the Upper Cuddalore formations the groundwater occurs in semi confined conditions, whereas in the Lower Cuddalore the groundwater occurs in confined condition with good groundwater potential.

#### **Cretaceous Formations**

Groundwater occurring in the lens shape in the sandy clay lenses and fine sand is underlain by white and black clay beds which constitute phreatic aquifer depth which ranges 10m to 15m below ground level. Phreatic aquifer in Limestone is potential due to the presence of Oolitic Limestone.

#### **Hard Rock Formations**

Groundwater occurs under water table conditions but the intensity of weathering, joint, fracture and its development is much less in other type of rocks when compared to gneissic formation. The groundwater potential is low, when compared with the gneissic formations.

##### **• Granitic Gneiss**

Groundwater occurs under water table conditions in weathered, jointed and fractural formations. The pore space developed in the weathered mantle acts as shallow granular aquifers and forms the potential water bearing and yielding zones water table is shallow in canal and tank irrigation regions and it is somewhat deeper in other regions.

- **Charnockite**

Groundwater occurs under water table conditions but the intensity of weathering, joint, fracture and its development is much less when compared to gneissic formations. The groundwater potential is low, when compared with the gneissic formations.

## **5. METHODOLOGY OF STUDY**

1. Open well and bore well water level measurement, depth of water level diameter of open well, agriculture land survey.
2. Geophysical survey for deep aquifer in nearby site Rock and soil geology also collected for the aquifer characteristic study
3. Aquifer thickness and quality measurement study in nearby proposed mine site areas of the study area

### **5.1 Geophysical Investigation**

#### ***5.1.1 Vertical Electrical resistivity sounding for aquifer study.***

The electrical resistivity study is used to determine aquifer and occurred rock in the proposed site. The DDR 3 equipment was used for data collection (**Fig.4**)



***Figure 4. Electrical resistivity survey Instruments.***

### 5.1.2 Basic Principles

The electrical properties of rocks in the upper part of the earth's crust are dependent upon the lithology, porosity, and the degree of pore space saturation and the salinity of the pore water. Saturated rocks have lower resistivity than unsaturated and dry rocks. The higher the porosity of the saturated rock, or the higher the salinity of the saturating fluids, the lower is the resistivity. The presence of clays and conductive minerals also reduces the resistivity of the rock.

The resistivity of earth materials can be studied by measuring the electrical potential distribution produced at the earth's surface by an electric current that is passed through the earth. Current is moved through the subsurface from one current electrode to the other and the potential difference is recorded as the current passes. From this information, resistivity values of various layers are acquired and layer thickness can be identified.

The apparent resistivity values determined are plotted as a log function versus the log of the spacing between the electrodes. These plotted curves identify thickness of layers. If there are multiple layers (more than 2), the acquired data is compared to a master curve to determine layer thickness.

This method is least influenced by lateral in-homogeneities and capable of providing higher depth of investigation.

The resistance  $R$  of a certain material is directly proportional to its length  $L$  and cross-sectional area  $A$ , expressed as:

$$R = R_s * L/A \text{ (in Ohm)}$$

Where  $R_s$  is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

$$R = dV/I \text{ (Ohm)}$$

Where  $dV$  is the potential difference across the resistor and  $I$  is the electric current through the resistor. The specific resistivity may be determined by:

$$R_s = (A/L) * (dV/I) \text{ (in Ohm m)}$$

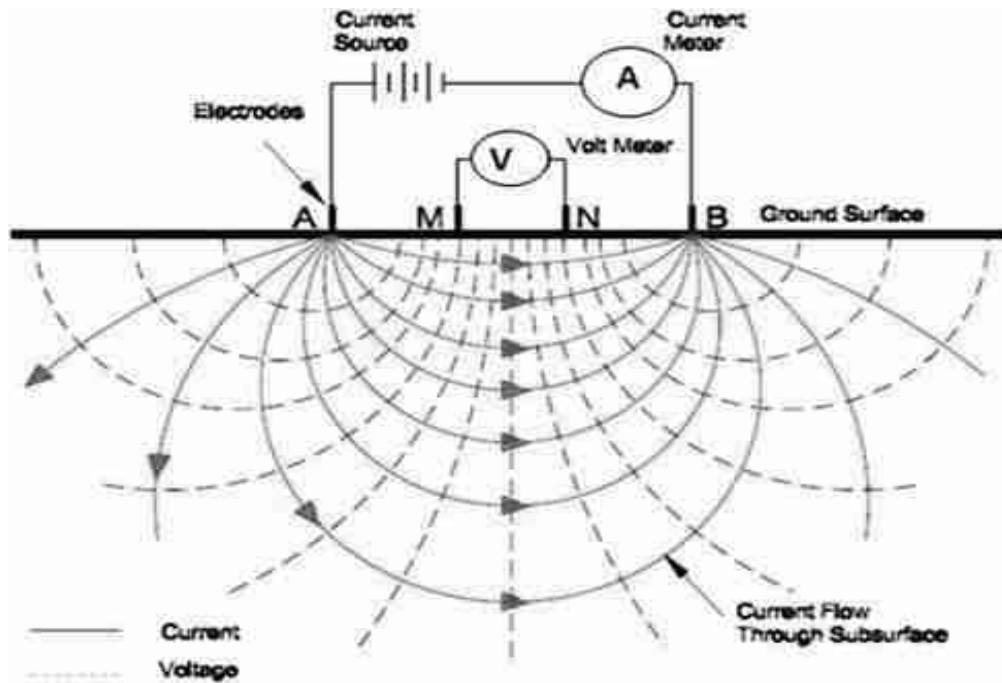


Figure 5. Schematic Diagram of Electrical resistivity principle

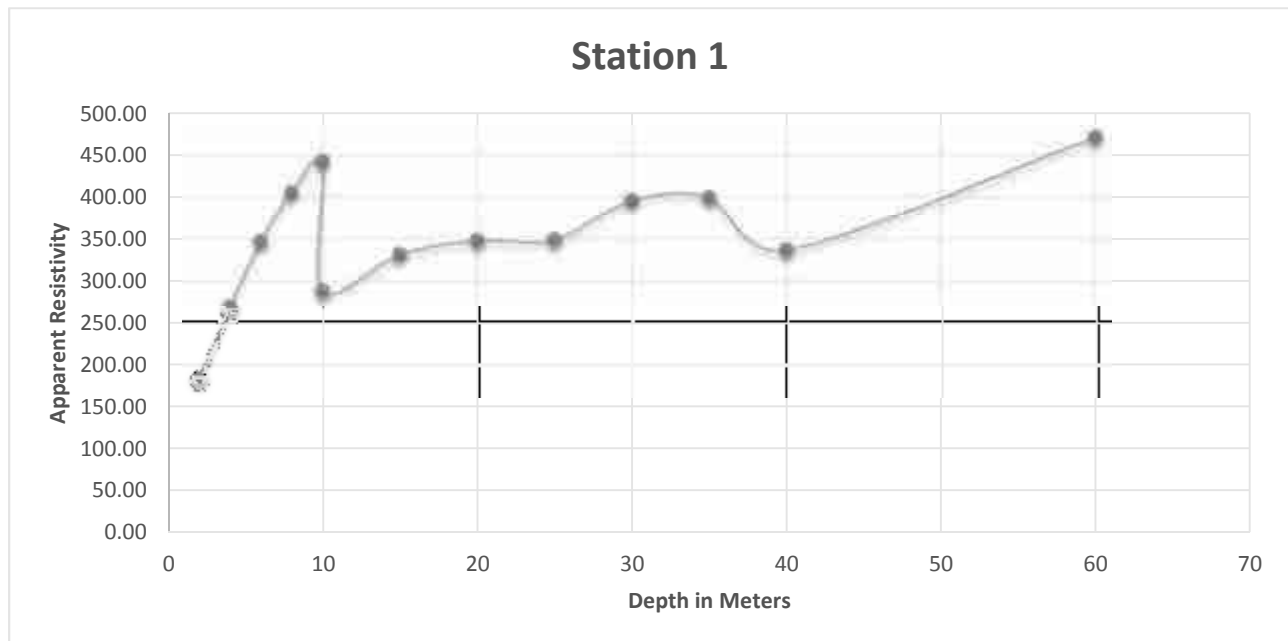


Figure 6. Geophysical survey location in the lease area

## 6. GEOPHYSICAL DATA INTERPRETATION & GRAPH

*Table 1 Geophysical data of Station 1*

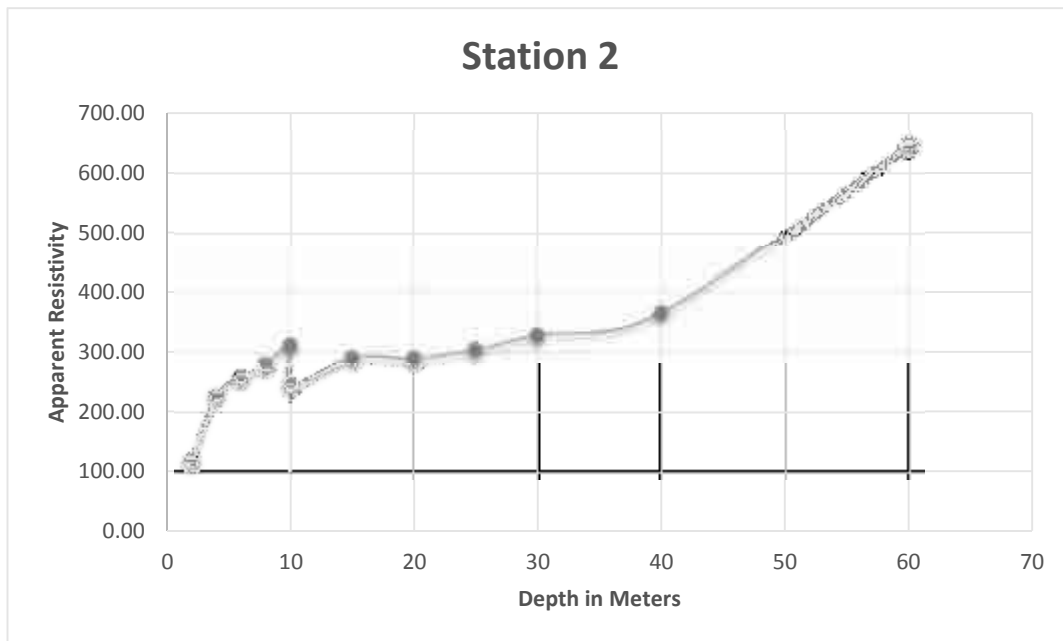
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1	2	1	4.7	39.68	186.99
2	4	1	23.6	11.42	269.08
3	6	1	55.0	6.3	346.36
4	8	1	99.0	4.1	405.74
5	10	1	155.5	2.85	443.20
6	10	5	23.6	12.23	288.16
7	15	5	62.8	5.27	331.12
8	20	5	117.8	2.95	347.54
9	25	5	188.5	1.85	348.72
10	30	5	274.9	1.44	395.84
11	35	5	377.0	1.06	399.61
12	40	5	494.8	0.68	336.47
13	60	5	1123.1	0.42	471.71



*Figure 7 Graphical Representation of Geophysical data Station 1*

**Table 2 Geophysical data of Station 2**

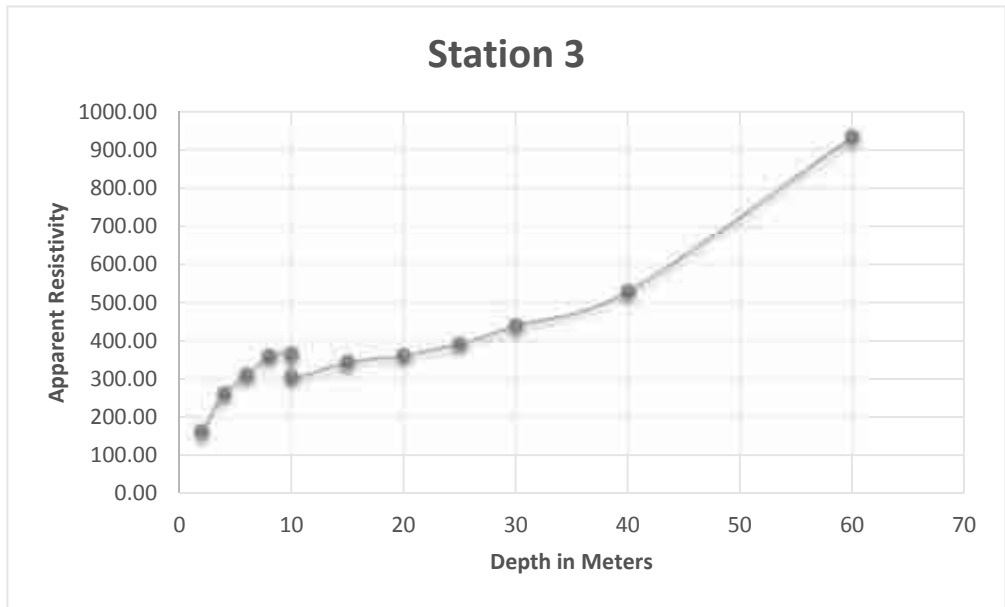
<i>S. No</i>	<i>Ab/2</i>	<i>Mn /2</i>	<i>K</i>	<i>R</i>	<i>Rho</i>
<b>1</b>	2	1	4.7	25.84	121.77
<b>2</b>	4	1	23.6	9.8	230.91
<b>3</b>	6	1	55.0	4.75	261.15
<b>4</b>	8	1	99.0	2.83	280.06
<b>5</b>	10	1	155.5	2.01	312.57
<b>6</b>	10	5	23.6	10.55	248.58
<b>7</b>	15	5	62.8	4.65	292.17
<b>8</b>	20	5	117.8	2.47	290.99
<b>9</b>	25	5	188.5	1.62	305.36
<b>10</b>	30	5	274.9	1.2	329.87
<b>11</b>	40	5	494.8	0.74	366.15
<b>12</b>	60	5	1123.1	0.58	651.41



**Figure 8 Graphical Representation of Geophysical data Station 2**

**Table 3 Geophysical data of Station 3**

<i>S. No</i>	<i>Ab/2</i>	<i>Mn/2</i>	<i>K</i>	<i>R</i>	<i>Rho</i>
<b>1</b>	2	1	4.7	34.66	163.33
<b>2</b>	4	1	23.6	11.06	260.60
<b>3</b>	6	1	55.0	5.63	309.53
<b>4</b>	8	1	99.0	3.62	358.24
<b>5</b>	10	1	155.5	2.34	363.89
<b>6</b>	10	5	23.6	12.92	304.42
<b>7</b>	15	5	62.8	5.45	342.43
<b>8</b>	20	5	117.8	3.06	360.50
<b>9</b>	25	5	188.5	2.08	392.07
<b>10</b>	30	5	274.9	1.6	439.82
<b>11</b>	40	5	494.8	1.07	529.44
<b>12</b>	60	5	1123.1	0.83	932.19

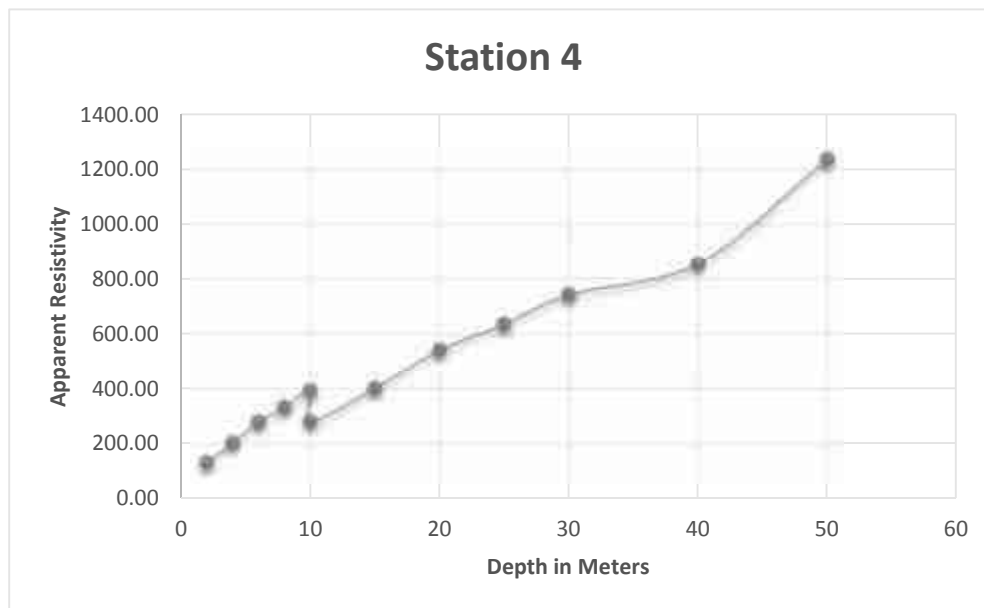


**Figure 9 Graphical Representation of Geophysical data Station 3**



**Table 4 Geophysical data of Station 4**

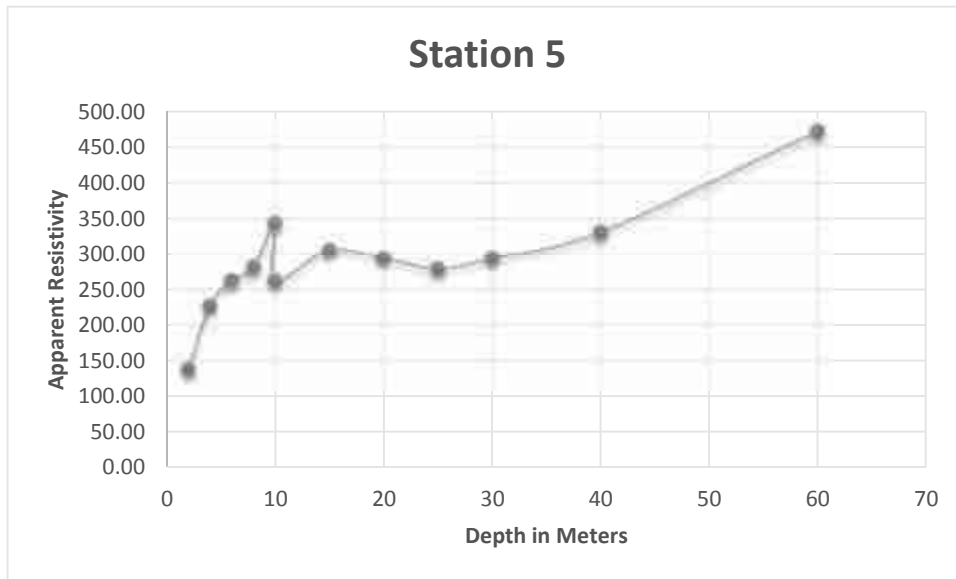
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<b>2</b>	4	1	23.6	8.64	203.58
<b>3</b>	6	1	55.0	5.09	279.84
<b>4</b>	8	1	99.0	3.35	331.52
<b>5</b>	10	1	155.5	2.52	391.88
<b>6</b>	10	5	23.6	11.95	281.57
<b>7</b>	15	5	62.8	6.38	400.87
<b>8</b>	20	5	117.8	4.6	541.93
<b>9</b>	25	5	188.5	3.37	635.23
<b>10</b>	30	5	274.9	2.7	742.20
<b>11</b>	40	5	494.8	1.73	856.01
<b>12</b>	50	5	777.5	1.59	1236.30



**Figure 10 Graphical Representation of Geophysical data Station 4**

**Table 5 Geophysical data of Station 5**

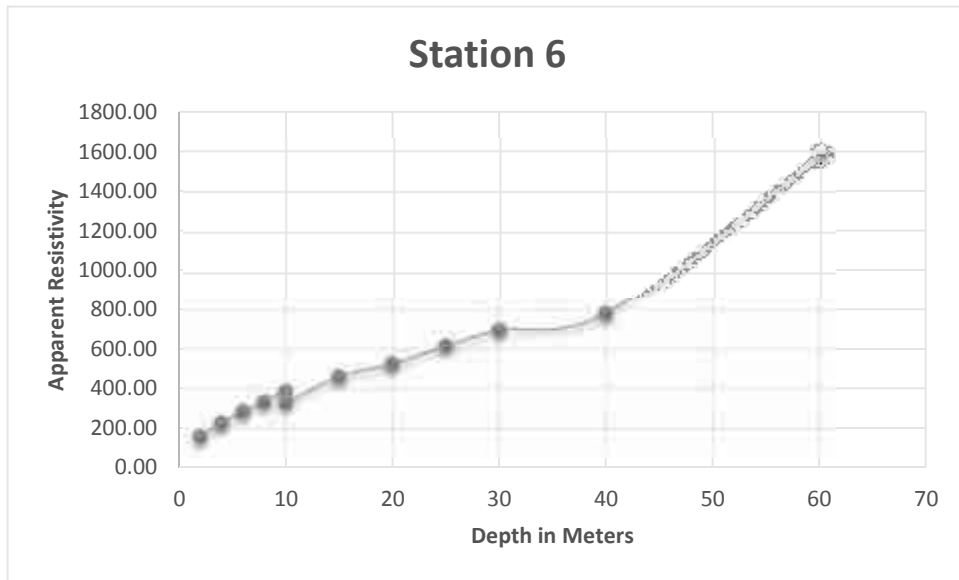
<i>Sr. No.</i>	<i>AB/2</i>	<i>MN/2</i>	<i>K</i>	<i>R</i>	<i>Rho</i>
<b>1</b>	2	1	4.7	29.18	137.51
<b>2</b>	4	1	23.6	9.63	226.90
<b>3</b>	6	1	55.0	4.77	262.25
<b>4</b>	8	1	99.0	2.84	281.05
<b>5</b>	10	1	155.5	2.21	343.68
<b>6</b>	10	5	23.6	11.13	262.25
<b>7</b>	15	5	62.8	4.87	305.99
<b>8</b>	20	5	117.8	2.5	294.53
<b>9</b>	25	5	188.5	1.48	278.97
<b>10</b>	30	5	274.9	1.07	294.13
<b>11</b>	40	5	494.8	0.67	331.52
<b>12</b>	60	5	1123.1	0.42	471.71



**Figure 11 Graphical Representation of Geophysical data Station 5**

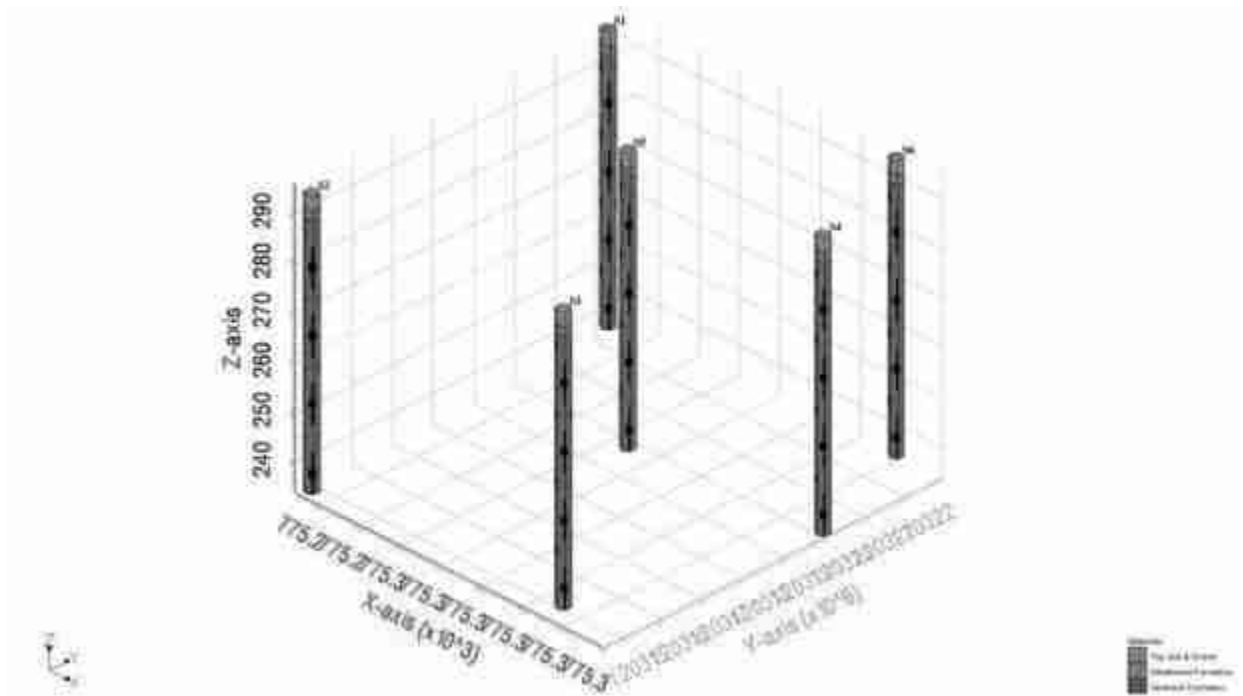
**Table 6 Geophysical data of Station 6**

<i>Sr. No.</i>	<i>AB/2</i>	<i>MN/2</i>	<i>K</i>	<i>R</i>	<i>Rho</i>
<b>1</b>	2	1	4.7	33.27	156.78
<b>2</b>	4	1	23.6	9.59	225.96
<b>3</b>	6	1	55.0	5.19	285.34
<b>4</b>	8	1	99.0	3.35	331.52
<b>5</b>	10	1	155.5	2.48	385.66
<b>6</b>	10	5	23.6	13.92	327.98
<b>7</b>	15	5	62.8	7.32	459.93
<b>8</b>	20	5	117.8	4.45	524.25
<b>9</b>	25	5	188.5	3.26	614.50
<b>10</b>	30	5	274.9	2.53	695.47
<b>11</b>	40	5	494.8	1.58	781.79
<b>12</b>	60	5	1123.1	1.43	1606.06

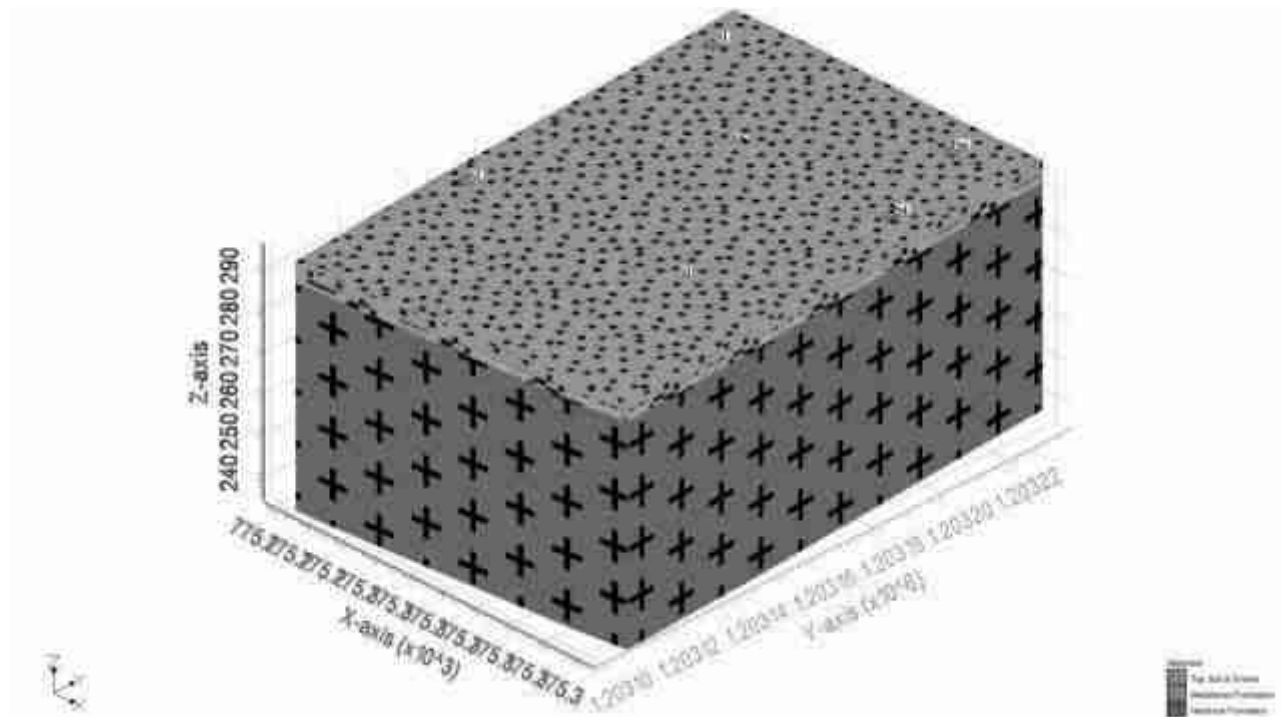


**Figure 12 Graphical Representation of Geophysical data Station 6**

## 7. LITHOLOGY MODELLING USING GEOPHYSICAL DATA



*Figure 13 Borehole view of Subsurface Lithology*



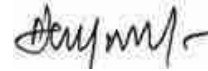
*Figure 14 Solid view of Subsurface Lithology*

## 8. CONCLUSION

- ❖ The lease applied area exhibits plain topography. The area has gentle sloping towards Southeast side and altitude of the area is 279m above from Mean Sea Level.
- ❖ The geological study of the given area covered by gravel and rough stone in the entire area. The discharge of the groundwater controlled by the massive Charnockite rock
- ❖ The study area exhibit 80° SE almost vertical dipping and massive Charnockite formation. So it act as a barrier and restrict the groundwater flow movement.
- ❖ Compared to Noiyal River the lease area is slightly elevated and slopping towards northeast side. Hence the water flow towards the downstream (Northeast side).
- ❖ Based on the geophysical investigation, Vertical Electrical Sounding (VES) were conducted to determine the subsurface water table and rock types up to depth of 100 m.
- ❖ The subsurface formation up to this depth can be categorized as follows,
  - ❖ **0m to 1m (Average) - Top Soil**
  - ❖ **2m to 6m (Average) – weathered formation**
  - ❖ **6m to 60m (Average) – Charnockite Formation (Massive Formation)**
- ❖ Water level from open and bore in nearby proposed site –open well having recharge water in the Shallow perched aquifer well built by the rainwater.
- ❖ In this mine lease area, groundwater occurs at shallow depths, depending on the intensity of weathering and its development is much less compared to gneissic formation. The mine area such no major intersections of water table are expected up to 50m.
- ❖ The aquifer are found within the weathered / fractured metamorphic terrain. Currently the aquifers are located at 65 to 70 meters below ground level (BGL). However, considering the

approved mining plan depth, which is **42 meters below ground level**. It will not impact the groundwater table.

- ❖ To obviate the impact due to catchment of rainwater as surface runoff management, effective measures like construction of peripheral garland drain, settling pond and ensuring water flow to the nearby downstream users are devised and will be implemented during the course of mining.
- ❖ From the above study it can be concluded there will be no adverse effect on the hydrological regime, water drainage, environment, and livelihood. Agricultural activity in the region.



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அனுப்புநர்  
இரா.குமரேசன், எம்.ஏ.எம்.பில், எம்.எட்.,  
வருவாய் கோட்டாட்சியர்,  
தாராபுரம்.

பெறுநர்  
மாவட்ட ஆட்சியர்,  
திருப்பூர்.

ந.க.எண். 1775 /2023/இ

நாள்: 16.05.2023

ஐயா.

பொருள் கனிமம் - காங்கயம் வட்டம் - முதலிபாளையம்  
கிராமம் புல எண். 986/B1-ல் 12146 ஹெக்டேர் பட்டா  
நிலப்பரப்பில் - குவாரி குத்தகை உரிமம் கோரியது -  
ஜி.சசீலா, க/பெ.குணசேகரன் - அறிக்கை  
சமர்ப்பித்தல் - தொடர்பாக.

பார்வை 1 துணை இயக்குநர் புனியியல் மற்றும் கனிமம்,  
திருப்பூர் அவர்களின் கடிதம்

ந.க.எண்.112/2023/கனிமம், நாள் 24.03.2023

2 வட்டாட்சியர், காங்கயம்-ன் கடிதம் , ந.க.எண்.  
14666/2023/அ2, நாள் : 09.05.2023

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திருப்பூர் மாவட்டம், காங்கயம் வட்டம், ஊதியூர் உள்வட்டம்,  
முதலிபாளையம் கிராமம், ரீ.ச.எண்.986/B1 (P) நெ.காலையில் பு.ஹெக. 12146 பரப்பளவு  
கொண்ட பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 5  
ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக் கோரி திருமதி.ஜி.சசீலா, க/பெ. குணசேகரன்,  
1/241 பால் சொசைட்டி எதிரில், குப்புசாமிநாயுடு புரம், செம்மிபாளையம், பல்லடம் என்பவர் மனு  
செய்துள்ளது தொடர்பாக புலத்தணிக்கை மற்றும் விசாரணை செய்து எனதறிக்கையினை  
பின்வருமாறு சமர்ப்பித்துக் கொள்கிறேன்.


காங்கயம் வட்டம், முதலிபாளையம் கிராமம், ரீ.ச.எண். 986/B1 நெ. காலையில்  
பு.ஹெக. 365.00 விஸ்தீரணமுள்ள பூமியானது காங்கயம் சார்பதிவக கிரைய பத்திர எண்.  
1141/2005 நாள், 08.06.2005-ன்படி டி.குணசேகரன் மனைவி சசீலா என்பவருக்கு  
பாத்தியப்பட்டு. கிராமக் கணக்குகளில் பட்டா எண். 1026-ல் மனுதாரர் சசீலா பெயரில்  
தனிப்பட்டவாக தாக்கலாகியுள்ளது. மேற்படி கிராமம், புல எண். 986/ B1-இல் மொத்த  
பரப்பளவான பு.ஹெக. 365.00 விஸ்தீரண பூமியில் பு.ஹெக. 12146 பரப்பளவிற்கு மட்டும்  
சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 5 ஆண்டுகளுக்கு குவாரிப்பணி  
செய்து கொள்ள அனுமதி கோரியுள்ளார்.

மேற்படி குத்தகை கோரும் புலத்தைச் சுற்றி எல்லைகள் வரையறுக்கப்பட்டு, எல்லைக்கற்கள் நடப்பட்டுள்ளன. மேற்படி புலங்களின் வழியாக உயர் மற்றும் தாழ்வழுத்த மின் கம்பித் தொடர் ஏதும் செல்லவில்லை. மேற்படி புலத்தில் விலையுயர்ந்த மரங்கள் ஏதும் இல்லை. புல விசாரணையின் போது பொதுமக்கள் எவரும் ஆட்சேபத்தை செய்யவில்லை. மேலும் அரசு நடவடிக்கைகளான நில ஆர்ஜிதம், பூமிதானம், நில உச்சவரம்பு, நிலமெடுப்பு ஆகிய நடவடிக்கைகள் ஏதும் மேற்படி புலத்தின் மீது இல்லை. மேலும் அனுமதி வழங்கவுள்ள புலத்திலிருந்து 300 மீ சுற்றளவில் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்புகள், மயானம், கோவில், புராதான சின்னங்கள் மற்றும் வனக்காடுகள் ஏதுமில்லை என்பது புலத்தணிக்கையில் தெரியவருகிறது.

மேற்படி பூமிகளில் சாதாரண கற்கள் / கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரியதன் பொருட்டு சீனியரேஜ் தொகை ரூ.1500/- பாரத ஸ்டேட் வங்கி சலான் எண். 20230321004637, நாள். 21.03.2023-ன்படி செலுத்தியுள்ளனர். மனுதாரர் திருமதி.ஜி.கீலா, க/பெ.குணசேகரன் என்பவருக்கு சாதாரண கற்கள் / கிராவல் மண் வெட்டியெடுக்க அனுமதி வழங்குவது தொடர்பாக முதலிபாளையம் கிராமத்தில் 13.04.2023 அன்று 'அ1' விளம்பரம் செய்யப்பட்டுள்ளது. நாளது வரை ஆட்சேபத்தை ஏதும் வரப்பெறவில்லை. மனுதாரர் மேற்படி பூமியில் சாதாரண கற்கள் வெட்டியெடுக்க தங்களுக்கு, எவ்வித ஆட்சேபமும் இல்லை என்று பொதுமக்கள் அளித்த வாக்குமூலம் பெறப்பட்டு இணைக்கப்பட்டுள்ளது.

மனுதாரர் திருமதி.ஜி.கீலா, க/பெ.குணசேகரன் என்பவர் அரசுக்கு செலுத்து வேண்டிய வருமானவரி, கனிம வரி மற்றும் இதர வரியினங்கள் எதுவும் நிலுவை இல்லை என தெரிவித்து நோட்டரி அபிட்மிட் வாக்குமூலம் அளித்துள்ளனர். மனுதாரர் குவாரி உரிமம் கோரியுள்ள ரீ.ச.எண்.986/B1 நெ.காலையில் பு.ஹெக். 0.96.0 பரப்பளவிற்கு ஏற்கனவே அவரது கணவர் திரு.குணசேகரன், பெயரில் திருப்பூர் மாவட்ட ஆட்சியரின் செயல்முறை ஆணை நக.384/கனிமம்/2016 நாள்: 16.04.2018-ன்படி 16.04.2018 முதல் 15.04.2023 வரை ஐந்தாண்டுகளுக்கு குத்தகை உரிமம் வழங்கப்பட்டு, மேற்படி குவாரியின் உரிமம் கடந்த 15.04.2023 உடன் முடிவடைந்து விட்டது. மேலும் மனுதாரருக்கு மேற்படி குத்தகை உரிமம் வழங்கும் பட்சத்தில் தமிழ்நாடு சிறுவகை கனிமச்சலுகை விதிகள் 1959-ல் 19(1)-ன்படி கட்டுப்பட்டு நடப்பதாக வாக்குமூலம் அளித்துள்ளார்.

எனவே, மனுதாரர் திருமதி.ஜி.கீலா, க/பெ. குணசேகரன் என்பவருக்கு காங்கயம் வட்டம், முதலிபாளையம் கிராமம், ரீ.ச.எண்.986/அ1 (P) நெ.காலையில் பு.ஹெக்.12146 பரப்பளவு கொண்ட பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 5 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க பரிந்துரை செய்யலாம் என்பதையும், இத்துடன் காங்கயம் வட்டாட்சியர் -ன் கடிதம் மற்றும் தொடர்புடைய கிராம ஆவணங்களை இணைத்து அனுப்பியுள்ளேன் என்பதையும் பணிவுடன் தெரிவித்துக் கொள்கிறேன்.  
இணைப்பு: மேற்கண்டவாறு.

  
வருவாய் கோட்டாட்சியர்  
தார்புரம்



3  
என்றது

அனுப்புநர்  
திருமதி. வே.சு.புவனேஸ்வரி,  
வருவாய் வட்டாட்சியர்,  
காங்கயம்

பெறுநர்  
வருவாய் கோட்டாட்சியர்,  
தாரமபாளம்

ந.க.14666/2023/அ2

நாள்.09-05-2023



திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - முதலியானையும் கிராமம் புல எண். 986/B1-ல் 1.21.46 ஹெக்டேர் பட்டா நிலப்பரப்பில் சாதாரண சுற்கள்/கிராவல் மண் வெட்டி எடுக்க 5 வரடங்களுக்கு குவாரி குத்தகை உரிமம் கோரி திருமதி.ஜி.சீலா, க./பெ.குணசேகரன் என்பவர் மனு செய்துள்ளது- விசாரணை அறிக்கை கோருதல் - தொடர்பாக

பார்வை

- 1 துணை இயக்குநர் புவியியல் மற்றும் கனிமம், திருப்பூர் அவர்களின் கடிதம் ந.க.எண்.112/2023/கனிமம், நாள் 24.03.2023
- 2 வருவாய் கோட்டாட்சியர் அலுவலக ந.க.1775/2023/இ, நாள் 31.03.2023
- 3 ஊதியூர் உள்வட்ட நிலவருவாய் ஆய்வாளர் அவர்களின் அறிக்கை நாள் 02.05.2023

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திருப்பூர் மாவட்டம், காங்கயம் வட்டம், ஊதியூர் உள்வட்டம், முதலியானையும் கிராமம், ரீ.ச.எண்.986/B1 (P) நெ.காலையில் பு.ஹெக்ட. 1.21.46 பரப்பளவு கொண்ட பட்டா பூமியில் சாதாரண சுற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 5 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக் கோரி திருமதி.ஜி.சீலா, க./பெ. குணசேகரன், 1/241 பால் சொசைட்டி எதிரில், குப்புசாமி நாயடு புரம், செம்பியானையும், பல்லடம் என்பவர் மனு செய்துள்ளது தொடர்பாக புலத்தணிக்கை மற்றும் விசாரணை செய்து எனதறிக்கையினை பின்வருமாறு சமர்ப்பித்துக் கொள்கிறேன்.

காங்கயம் வட்டம், முதலியானையும் கிராமம், ரீ.ச.எண். 986/B1 நெ. காலையில் பு.ஹெக்ட. 3.65.00 விஸ்தீரணமுள்ள பூமியானது காங்கயம் சார்பதிவக, கிரைய பத்திர எண். 1141/2005 நாள். 08.06.2005-ன்படி ய.குணசேகரன் மனைவி சீலா என்பவருக்கு பாத்தியப்பட்டு, கிராமக் கணக்குகளில் பட்டா எண். 1026-ல் மனுதாரர் சீலா பெயரில் தனிப்பட்டவாக தாக்கலாகியுள்ளது. மேற்படி கிராமம், புல எண். 986/ B1-இல் மொத்த பரப்பளவான பு.ஹெக்ட. 3.65.00 விஸ்தீரண பூமியில் பு.ஹெக்ட. 1.21.46 பரப்பளவிற்கு மட்டும் சாதாரண சுற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 5 ஆண்டுகளுக்கு குவாரிப்பணி செய்து கொள்ள அனுமதி கோரியுள்ளார்.

மேற்படி குத்தகை கோரும் புலத்தைச் சுற்றி எல்லைகள் வரையறுக்கப்பட்டு, எல்லைக்கற்கள் நடப்பட்டுள்ளன. ஆனால் புலத்தை சுற்றிலும், கம்பி வேலி மற்றும் பச்சைநிற வலை ஆகியன அமைக்கப்படவில்லை. மேலும், மேற்படி புலத்தில் மரங்கள் ஏதும் நடப்பட்டு பசுமை தோட்டம் அமைக்கப்படவில்லை. மாசுகட்டுப்பாடு வாரித்தில் இருந்து வழங்கப்பட்ட Consent Order சான்று 31.03.2023 உடன் காலவதியாகிவிட்டது. மேற்படி புலங்களின் வறியாக உயர் மற்றும் தாழ்வாழுத்த மின் கம்பித் தொடர் ஏதும் செல்லவில்லை. மேற்படி புலத்தில் விலையுயர்ந்த மரங்கள் ஏதும் இல்லை. புல விசாரணையின் போது பொதுமக்கள் எவரும் ஆட்சேபணை செய்யவில்லை. மேலும் அரசு

நடவடிக்கைகளை நில் ஆர்ஜிதம், பூமிநாணம், நில உச்சவரம்பு, நிலமெடுப்பு ஆகிய நடவடிக்கைகள் ஏதும் மேற்படி புலத்தின் மீது இல்லை மேலும் அனுமதி வழங்கவுள்ள புலத்திலிருந்து 300 மீ சுற்றளவில் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்புகள், மயானம், கோவில், புராண சின்னங்கள் மற்றும் வனக்காடுகள் ஏதும் இல்லை என்பது புலத்தணிக்கையில் தெரியவருகிறது.

மேற்படி பூமிகளில் சாதாரண சுற்கள் / கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரியதன் பொருட்டு சீனியரேஜ் தொகை ரூ.1500/- பாரத எஸ்டேட் வங்கி சலான் எண். 20230321004637, நாள். 21.03.2023-ன்படி செலுத்தியுள்ளனர். மனுதாரர் திருமதி ஜிக்ஸீலா, க/பெருணசேகரன் என்பவருக்கு சாதாரண சுற்கள் / கிராவல் மண் வெட்டியெடுக்க அனுமதி வழங்குவது தொடர்பாக முதலிபாளையம் கிராமத்தில் 13.04.2023 அன்று 'அ' விளம்பரம் செய்யப்பட்டுள்ளது. நானது வரை ஆட்சேபணை ஏதும் வரப்பெறவில்லை. மனுதாரர் மேற்படி பூமியில் சாதாரண சுற்கள் வெட்டியெடுக்க தங்களுக்கு எவ்வித ஆட்சேபணையும் இல்லை என்று பொதுமக்கள் அளித்த வாக்குமூலம் பெறப்பட்டு இணைக்கப்பட்டுள்ளது.

மனுதாரர் திருமதி ஜிக்ஸீலா, க/பெருணசேகரன் என்பவர் அரசுக்கு செலுத்து வேண்டிய வருமானவரி, கனிம வரி மற்றும் இதர வரியினங்கள் எதுவும் நிலுவை இல்லை என தெரிவித்து தோட்டரி அபிடவிட் வாக்குமூலம் அளித்துள்ளனர். மனுதாரர் குவாரி உரிமம் கோரியுள்ள ரீச.எண்.986/81 நெகாவலையில் பு.வெறக. 0.960 பரப்பளவிற்கு ஏற்கனவே அவரது கணவர் திரு குணசேகரன், பெயரில் திருப்பூர் மாவட்ட ஆட்சியரின் செயல்முறை ஆணை நக.384/கனிமம்/2016 நாள். 16.04.2018-ன்படி 16.04.2018 முதல் 15.04.2023 வரை ஐந்தாண்டுகளுக்கு குத்தகை உரிமம் வழங்கப்பட்டு, மேற்படி குவாரியின் உரிமம் கூடுதல் 15.04.2023 உடன் முடிவடைந்து விட்டது. மேலும் மனுதாரருக்கு மேற்படி குத்தகை உரிமம் வழங்கும் பட்சத்தில் தமிழ்நாடு சிறுவகை கனிமச்சலுகை விதிகள் 1959-ல் 19(1)-ன்படி கட்டுப்பாடு நடப்பதாக வாக்குமூலம் அளித்துள்ளார்.

எனவே, மனுதாரர் திருமதி ஜிக்ஸீலா, க/பெ. குணசேகரன் என்பவருக்கு காங்கயம் வட்டம், முதலிபாளையம் கிராமம், ரீச.எண்.986/81 (P) நெகாவலையில் பு.வெறக.1.21.46 பரப்பளவு கொண்ட மட்டா பூமியில் சாதாரண சுற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 5 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க உரிய மேல் நடவடிக்கை எடுக்கும் பொருட்டு இத்துடன் கிராம நிர்வாக அலுவலர் வாக்குமூலம், அ1 விளம்பரம், மனுதாரர் வாக்குமூலம், பொதுமக்கள் வாக்குமூலம் மற்றும் தொடர்புடைய கிராம ஆவணங்களை இணைத்து அனுப்பியுள்ளேன் என்பதையும் பணிவுடன் தெரிவித்துக் கொள்கிறேன்.

தங்கள் உண்மையுள்ள,

BHUVANESHWARI


TAHSILDAR

நகல்

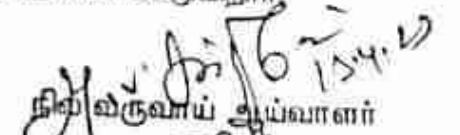
திருப்பூர் மாவட்ட ஆட்சியர் அவர்களுக்கு பணிநிறுப்புகிறது.

அ1 விளம்பரம்

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், ரீ.ச.எண்.986/B1 (P) நெ.காலையில் பு.ஹெக்.1.21.46 பரப்பளவு கொண்ட பூமியில் திருமதி.ஜி.கசீலா, க/பெ. குணசேகரன் என்பவர் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க 5 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்குவது தொடர்பாக பொதுமக்கள் எவருக்கேனும் ஆட்சேபனை ஏதுமிருப்பின் 15 தினங்களுக்குள் ஆட்சேபனையை ஊதியூர் நிலவருவாய் ஆய்வாளருக்கோ, காங்கயம் வட்டாட்சியர் அவர்களுக்கோ நேரிலோ, எழுத்துப்பூர்வமாகவோ தெரிவிக்குமாறும், தவறும் பட்சத்தில் ஆட்சேபனை ஏதுமில்லை எனக்கருதி குத்தகை உரிமம் வழங்கிட நடவடிக்கை மேற்கொள்ளப்படும் என இதன் மூலம் தெரிவித்துக் கொள்ளப்படுகிறது.

  
நிலவருவாய் ஆய்வாளர்  
நிலவருவாய் ஆய்வாளர்,  
ஊதியூர் உள்வட்டம்,  
காங்கயம் வட்டம்.

முதலிபாளையம் கிராமத்தில் அ1 விளம்பரம் செய்து பொதுமக்கள் கையொப்பம் பெற்ற மீள சமர்ப்பிக்குமாறு முதலிபாளையம் கிராம நிர்வாக அலுவலர் கேட்டுக் கொள்ளப்படுகிறார்.

  
நிலவருவாய் ஆய்வாளர்  
நிலவருவாய் ஆய்வாளர்,  
ஊதியூர் உள்வட்டம்,  
காங்கயம் வட்டம்.

பெறுநர்

கிராம நிர்வாக அலுவலர்,  
முதலிபாளையம்.

1. சிப்பன்

2. ரெகிஸ்டர்

3. ரிசர்வ்

4. ரிசர்வ்

திருச்சிபுர் மாவட்ட  
மாநகராட்சி

திருச்சிபுர் மா  
நகராட்சி  
கிராம  
திருமதி  
செல்வ  
சென்

- 5. செல்வசேகர்
- 6. Vinoth
- 7. V. Valaraj
- 8. M. Kanakareethinam
- 9. V. Gomathi
- 10. A. [Signature]

பி.டி

செல்வசேகர் அமைச்சர் தலைமையில் நடைபெற்ற கூட்டத்தில்  
 திருச்சிபுர் மாநகராட்சி கிராம திருமதி செல்வசேகர்  
 தலைமையில் நடைபெற்ற கூட்டத்தில்  
 திருச்சிபுர் மாநகராட்சி கிராம திருமதி செல்வசேகர்  
 தலைமையில் நடைபெற்ற கூட்டத்தில்.

22.07.2023  
 திருச்சிபுர் மாநகராட்சி  
 திருமதி செல்வசேகர்

அனுப்புநர்

திரு.நா.கரேஷ்குமார்,  
வட்டார வளர்ச்சி அலுவலர்,  
(வட்டார ஊராட்சி),  
குண்டாம் 638 702

பெறுநர்

துணை இயக்குநர்,  
புவியியல் மற்றும் சுரங்கத்துறை  
திருப்பூர்.

ந.க.எண்: 4372/2022/அ2

நாள் : 01.02.2024

அய்யா,

பொருள் : கனிமங்களும் கரங்கங்களும் - சிறுகனிமம் - சாதாரண கற்கள் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - முதலிபாளையம் கிராமம் - புல எண்கள். 986/B1(P)-ல் 1.21.46 ஹெக்டர் பட்டா நிலப்பரப்பில் சாதாரண கற்கள்/கிராவல் மண், மண் வெட்டி எடுக்க குவாரி குத்தகை உரிமம் கோரி ஜி.சீலா க/பெ குளசேகரன், 1/241, பால் சொசைட்டி எதிரில், குப்புசாமி நாயுடுபுரம், செம்மிபாளையம், பல்வடம் என்பவர் மனு செய்துள்ளதற்கு சான்று அறிக்கை கோரியது - அறிக்கை அனுப்புதல் - தொடர்பாக

பார்வை : துணை இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, திருப்பூர் அவர்களின் ந.க.எண். 112/2023/கனிமம் நாள் 08.01.2024

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பார்வையில் காணும் கடிதத்தில் தெரிவித்துள்ளவாறு திருப்பூர் மாவட்டம், காங்கயம் வட்டம், முதலிபாளையம் கிராமம், புல எண்கள் 986/B1(P)-ல் 1.21.46 ஹெக்டர் பரப்பளவு உள்ள பட்டா பூமியிலிருந்து 300 மீட்டர் சுற்றளவிற்குள் அங்கீகரிக்கப்பட்ட குடியிருப்பு மனைகள் (Layout) மற்றும் அங்கீகரிக்கப்பட்ட கட்டுமானங்கள் ஏதுமில்லை என்ற விபரத்தை பணிவுடன் தெரிவித்துக்கொள்கிறேன்.

1.2.24  
வட்டார வளர்ச்சி அலுவலர் (வன)  
குண்டாம்

1.2.24



சான்று

செய்யுதி மாவட்டம், காரைக்கலம் வட்டம்,  
44 முதலிபாளையம் கிராமம் 400 எண் 986/B1, ரூபி  
4.9253 3.65.00 ஏக்கர், மட்டம் எண் 1026 ஆக  
கிராமத்தின் மக்கள் சேவை அலுவலர் உரிமையுடைய  
400 எண் 986/B1, 4.9253 3.65.00 ஏக்கர் நிலத்தை  
300 மட்டம் சட்டமன்றம் அனுப்புகின்ற, கோவில், மாரைக்கலம்  
உரிமையாளர் உரிமையை அல்லது சான்றிதழ் பெறும்.

  
11/03/2024  
கிராம நிர்வாக அலுவலர்  
44, முதலிபாளையம் கிராமம்  
காரைக்கலம் வட்டம்

**TOPOGRAPHICAL VIEW OF MUDALIPALAYAM**  
**ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA**



Name of the Applicant : **Tmt. G. Susila,**  
W/o. Gunasekaran,  
Address : No. 1/241, Milk society opposite,  
Kuppusamynaidupuram,  
Semmpalayam, Palladam  
Tiruppur District,  
Tamil Nadu – 641 662.  
Mobile No. 8508677996.

**Location:**

S.F.No. : 986/B1(Part)  
Extent : 1.21.46Ha  
Village : Mudalipalayam  
Taluk : Kangayam  
District : Tiruppur

Signature of the applicant

  
(G. Susila)

  
15/6/2024  
(Village Administrative Officer)  
44, மதுரை மாவட்டம் காரைக்குடி  
Attestation  
சுற்றுலா துறை



## M/S.HANUMAN EXPLOSIVES PVT.LTD.,

Survey No.898,Chinnamaruthur Village, Dharapuram Taluk, TIRUPUR (Dt), Tamil Nadu  
Licence No: E/SC/TN/22/714(E97779), E/SC/TN/22/737(E97783), E/SC/TN/22/734(E97787),  
E/SC/TN/22/733(E97791), E/SC/TN/22/736(E97794), E/SC/TN/22/735(E97797).

To:

Tmt.G.Susila  
W/o Gunasekaran,  
No.1/241,Milk society opposite,  
Kuppusamynaidupuram,  
Semmipalayam,  
Palladam,  
Tiruppur(DT),  
Tamil Nadu State-641 662.

REF : your letter dated.

SUB : regarding blasting work using explosives in your proposed quarry.

Sir,

We have having explosives licence I form 22 holding No:E/SC/TN/22/733 (E97791) situated in survey SF NO.898,899,905 Chinnamaruthur, Pichaikalpattyvillage,Dharapuram(Tk),Tiruppur(Dt).Our office functions at address No.278/J2, First floor,Karur main road,Mulanur,Dharapuram(TK),Tiruppur(DT),TamilNadu.

We are enacting 2 explosives vans for transporting detonators and class 2 separately for our magazine to our work site and well experienced and licenced blasters and shot firer for safe blasting without untoward incident.

We are willing to undertake work on contract basis at your SF NO.986/B1(part), Area:1.21.46 Ha in Muthalipalayam Village, Kangayam(TK), Tiruppur(DT).

Thanking you

ENCLOSURE

1.LICENCE COPY

FOR HANUMAN EXPLOSIVES

For M/s HANUMAN EXPLOSIVES PVT.LTD.

  
AUTHORISED SIGNATORY

No.278/J2,First floor,Karur main road,Mulanur,Dharapuram(TK),Tiruppur(DT),Tamil Nadu.PIN-638106



भारत सरकार | Government of India

वाणिज्य और उद्योग मंत्रालय | Ministry of Commerce & Industry

पेट्रोलियम तथा विस्फोटक सुरक्षा संगठन (पेसो) | Petroleum & Explosives Safety Organisation (PESO)

पूर्व नाम- विस्फोटक विभाग | Formerly- Department of Explosives

A और D - विंग, ब्लॉक 1-8, दूसरा तल, शास्त्री भवन | A & D - Wing, Block 1-8, 2nd Floor, Shastri Bhavan

26 हड्डोउस रोड, नुंगम्बक्कम चेन्नै | 26 Haddous Road, Nungambakkam Chennai 600006

फोन (Phone):- 28281023 | फैक्स (Fax):- 28284848

संख्या (No.): E/SC/TN/22/733(E97791)

दिनांक (Date): 16/10/2023

सेवा में | To,

M/s.HANUMAN EXPLOSIVES PVT.LTD.,  
NO.278/12,FIRST FLOOR,KARUR MAIN ROAD,MULANUR,DHARAPURAM,TIRUPPUR,TAMIL NADU-638106, Town/Village - MULANUR  
District-TIRUPUR, State-Tamil Nadu, Pincode - 638106

विषय: Survey No.898 (Magazine-4), ग्राम CHINNAMARUTHUR, Dharapuram Taluk, जिला TIRUPUR, राज्य Tamil Nadu में मेसर्स M/s.HANUMAN EXPLOSIVES PVT.LTD. द्वारा विस्फोटक के मैगजीन में उपयोग के लिए कब्जा हेतु विस्फोटक नियम, 2008 के अंतर्गत LE-3 में जारी अनुज्ञप्ति सं E/SC/TN/22/733(E97791) के संशोधन संदर्भ में। (विस्फोटक की मात्रा / मासिक खरीद सीमा में परिवर्तन)

Subject: Possession for Use of Explosives from magazine situated at Survey No.:898 (Magazine-4), CHINNAMARUTHUR, Dharapuram Taluk, Dist. TIRUPUR, Tamil Nadu - Licence No.: E/SC/TN/22/733(E97791) granted in Form LE-3 of Explosives Rules, 2008 - (Amendment of Quantity of Explosives/Monthly Purchase Limit).

महोदय | Sir,

आपका उपर्युक्त विषय पर पत्र संख्या 99678 दिनांक 13/10/2023 का संदर्भ ग्रहण करें।  
Please refer to your letter no. 99678 dated 13/10/2023.

अनुज्ञप्ति संख्या E/SC/TN/22/733(E97791) विस्फोटक की मात्रा / मासिक खरीद सीमा में परिवर्तन के संदर्भ में पथा संशोधित कर भेजी जा रही है।  
The Licence No.: E/SC/TN/22/733(E97791) is forwarded herewith duly amended in respect of followings;

Quantity of Explosives/Monthly Purchase Limit

किसी भी एक समय में लाइसेंस क्षमता निम्नलिखित वर्ग तथा मात्रा से अधिक नहीं होगी।  
The licence capacity at any one time shall not exceed the kinds and quantities mentioned below;

संख्या No	विस्फोटक Explosive(s)	वर्ग Class	प्रभाग Div	उप-प्रभाग Sub Div	क्षमता Capacity	इकाई Unit
1	Nitrate Mixture	2	0	0	3000	Kg.
2	Detonating Fuse	6	2	0	15000	Mtrs
3	Safety Fuse	6	1	0	5000	Mtrs
4	Detonators	6	3	0	30000	Nos.

किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा (अनुच्छेद 3 (ख) और (ग) के अधीन अनुज्ञप्ति के लिए लागू) : 15 गुना  
Quantity of explosives to be purchased in a calendar month[applicable for licence under article 3(b) and (c)]: 15 times as above.

यह अनुज्ञप्ति दिनांक 31 मार्च 2028 तक प्रवृत्त रहेगी।  
This Licence shall remain valid till 31st day of March 2028.

अनुज्ञप्ति के आगामी नवीकरण हेतु कृपया विस्फोटक नियम, 2008 के नियम 112 के अंतर्गत प्रक्रिया का पालन करें। कृपया पावती दें।  
For further revalidation(if required), please follow the procedure under Rule 112 of Explosives Rules, 2008. Receipt of this letter may please be acknowledged.

भवदीय | Your's faithfully

(डा.टी.एस.थनुलिंगम | Dr. T. L. THANULINGAM)

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives

दक्षिणांचल, चेन्नै | South Circle, Chennai

प्रतिलिपि प्रेषित | Copy Forwarded to:

1. District Magistrate, TIRUPUR, Tamil Nadu with reference to his Noc No: R.DIS.NO.5846/2017/C2 Dated: 11/12/2017
2. Superintendent of Police, TIRUPUR, Tamil Nadu.

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives  
दक्षिणांचल, चेन्नै | South Circle, Chennai

(अधिक जानकारी जैसे आवेदन की स्थिति, शुल्क आदि के लिए हमारी वेबसाइट <http://peso.gov.in> देखें।)  
(For more information regarding status, fees and other details please visit our website <http://peso.gov.in>)

**Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.**

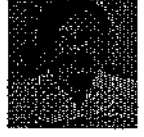
**अनुज्ञापति प्ररूप एल. ई.-3 | LICENCE FORM LE-3**  
(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (घ) देखिए।)  
(See article 3(a) to (d) of Part 1 of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1, 2, 3, 4, 5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रखने के लिए अनुज्ञापति  
Licence to possess : (e) for use, explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazine

अनुज्ञापति सं. (Licence No.) : E/SC/TN/22/733(E97791)  
वार्षिक फीस रूपए (Annual Fee Rs): 7200/-

1. Licence is hereby granted to

M/s.HANUMAN EXPLOSIVES PVT.LTD. (अधिभोगी / Occupier : P.Baskaran), NO.278/J2, FIRST FLOOR, KARUR MAIN ROAD, MULANUR, DHARAPURAM, TIRUPPUR, TAMIL NADU-638106, Town/Village - MULANUR, District-TIRUPPUR, State-Tamil Nadu, Pincode - 638106



को अनुज्ञापति अनुदत्त की जाती है।

2. अनुज्ञापतिधारी की प्रास्थिति | Status of licensee : Company

3. अनुज्ञापति निम्नलिखित प्रयोजनों के लिए विधिमान्य है।  
Licence is valid only for the following purpose.

possess for use of Nitrate Mixture, Detonating Fuse, Safety Fuse, Detonators, - के उपयोग के लिए

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

क्र Sr. No.	नाम और विवरण Name and Description	वर्ग और प्रभाग Class & Division	उप-प्रभाग Sub-division	मात्रा किसी एक समय में Quantity at any one time
1.	Nitrate Mixture	2, 0	0	3000 Kg.
2.	Detonating Fuse	6, 2	0	15000 Mtrs
3.	Safety Fuse	6, 1	0	5000 Mtrs
4.	Detonators	6, 3	0	30000 Nos.

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा [अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञापति के लिए]

(b) Quantity of explosives to be purchased in a calendar month [applicable for licence under article 3(b) and (c)] :

15 times  
as above.

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञापति परिसर की पुष्टि होती है।  
The licensed premises shall conform to the following drawing(s).

रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/733(E97791)  
दिनांक (Dated) 16/10/2023

6. अनुज्ञापति परिसर निम्नलिखित पते पर स्थित हैं। The licensed premises are situated at following address:

Survey No. 898 (Magazine-4), ग्राम (Town/Village) : CHINNAMARUTHUR, Dharapuram Taluk,  
पुलिस थाना (Police Station) : Mulanur

जिला (District)	TIRUPUR	राज्य (State)	Tamil Nadu	पिनकोड (Pincode)	636112
दूरभाष (Phone)		ई. मेल (E-Mail)		फैक्स (Fax)	

7. अनुज्ञापति परिसर में निम्नलिखित सुविधाएं अंतर्विष्ट हैं।

The licensed premises consist of following facilities.

: High Explosives Room, Lobby and Detonators Room

8. अनुज्ञापति समय - समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपाबंधों के अधीन रहते हुए अनुदत्त की जाती है।

The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions, additional conditions and the following Annexures.

1. उपर्युक्त क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विवरण दर्शित करते हुए)।

Drawings (showing site, constructional and other details) as stated in serial No. 5 above.

2. अनुज्ञापति प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञापति की शर्तों और अतिरिक्त शर्तों।

Conditions and Additional Conditions of this licence signed by the licensing authority.

3. दूरी प्ररूप DE-2 | Distance Form DE-2.

9. यह अनुज्ञापति तारीख 31 मार्च 2023 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 2023.

यह अनुज्ञापति, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपवर्णित इस अनुज्ञापति की शर्तों का अधिक्रमण करने या यदि अनुज्ञापति परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निर्लंबित या प्रतिसंहत की जा सकती है, जहां वह लागू हो।

This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

तारीख | The Date - 21/12/2018

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

**Amendments :**

- Change in Postal Address dated : 03/11/2021
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 25/04/2022
- Amendment in Drawings/Facilities/Premises dated : 25/04/2022
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 11/11/2022
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 16/10/2023

नवीनीकरण के पृष्ठांकन के लिए स्थान  
Space for Endorsement of Renewal

नवीकरण की तारीख Date of Renewal	समाप्ति की तारीख Date of Expiry	अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प Signature of licensing authority and stamp
08/03/2023	31/03/2028	Sd/- Jt. Chief Controller of Explosives, South Circle, Chennai

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

**Note :- This is system generated document does not require physical signature. Applicant may take printout for**

मैगजीन में वर्ग 1,2,3,4,5,6, और 7 के विस्फोटकों को बिक्री या प्रयोग हेतु रखने के लिए प्ररूप एल.ई. 3 (अनुच्छेद 3 (ख) से (ग)) में मुख्य विस्फोटक नियंत्रक या विस्फोटक नियंत्रक द्वारा प्रदान किए जाने वाले अनुज्ञापति सं. E/SC/TN/22/733(E97791) की शर्तों निम्नलिखित हैं।

The following are the conditions of licence number E/SC/TN/22/733(E97791) to possess for sale or use, explosives of Class 1,2,3, 4, 5, 6 and 7 in a magazine in Form LE-3 (articles 3(b) to (c)) granted by Chief controller of Explosives or Controller of Explosives.

- परिसर में किसी भी समय विस्फोटकों की मात्रा अनुज्ञापन योग्य सामर्थ्य से अधिक नहीं होगी।  
The quantity of explosives on the premises at any one time shall not exceed the licensable capacity.
- विस्फोटकों के भंडारण के लिए प्रयुक्त होने वाली मैगजीन अनुसूची III और अनुज्ञापति के उपाबंध में विनिर्दिष्ट सुरक्षा दूरी बनाए रखना होगा।  
The magazine used for storage of explosives shall maintain safety distance specified in Schedule III and annexure to the licence.
- मैगजीन का प्रयोग उन सभी विस्फोटकों के, जो इस अनुज्ञापति में विनिर्दिष्ट हैं, रखे जाने के लिए और ऐसे रखे जाने से संबद्ध आधान या औजार या उपकरणों के रखे जाने के लिए ही किया जाएगा; अन्यथा नहीं।  
The magazine shall be used only for keeping all explosives specified in this licence and of receptacles for, or tools or implements for work connected with the keeping of such explosives.
- पैकजों को खोलने का कार्य और विस्फोटकों को तोलने तथा पैक करने का कार्य मैगजीन में नहीं किया जाएगा।  
The opening of packages and the weighing and packing of explosives shall not be carried on in the magazine.
- दो या दो से अधिक वर्णन के विस्फोटकों को, जिन्हें मैगजीन में रखे जाने की अनुज्ञा दी जा सकती है, मैगजीन में तभी रखे जाएंगे जब उनमें से प्रत्येक को, ऐसे पदार्थ या स्वरूप का कोई मध्यवर्ती विभाजक लगाकर या उनके बीच ऐसा मध्यवर्ती स्थान छोड़कर, परस्पर पृथक कर दिया जाए कि किसी वजह से विस्फोटक में लगने वाली आग या होने वाला विस्फोट किसी अन्य वर्णन के विस्फोटक तक न पहुंच सके: परंतु—  
(घ) 2 (नाइट्रेट मिश्रण), वर्ग 3 (नाइट्रो योगिक) के विभिन्न विस्फोटक, वर्ग 6 प्रथम प्रभाग के अंतर्गत आने वाले सुरक्षा पलीते और वर्ग 6 प्रभाग 2 के अंतर्गत आनेवाले विस्फोटक प्रेरक पलीते, जिनमें कोई खुला लोहा या इस्पात नहीं है, एक दूसरे के साथ बिना किसी मध्यवर्ती विभाजक या स्थापन के रखे जा सकते हैं।  
(ङ) वर्ग 6 प्रभाग 3 के अंतर्गत आनेवाले विस्फोटक प्रेरक अलग रखे जाएंगे।  
(च) वर्ग 1 के अंतर्गत आने वाले बारूद को अलग रखा जाएगा।  
Two or more description or explosives which may be permitted to be kept in the magazine shall be kept only if they are separated from each other by an intervening partition of such substance or character, or by such intervening space, as will effectually prevent explosion or fire in the one communicating with the other; Provided that—  
(d) the various explosives of Class 2 (nitrate-mixture), Class 3 (nitro-compound), safety fuses belonging to Class 6 Division 1 and detonating fuses belonging to Class 6 Division 2 as do not contain any exposed iron or steel, may be kept with each other without any intervening partition or space;  
(e) Detonators belonging to Class 6 Division 3 shall be kept separately.  
(f) Gun powder belonging to Class 1 shall be kept separately.
- वर्ग 3 (नाइट्रो योगिक) के विस्फोटकों को, उनके विनिर्माण की तारीख से एक वर्ष बीत जाने के पश्चात सिवाय अनुज्ञापन प्राधिकारी की विशेष मंजूरी के मैगजीन में नहीं रखा जाएगा।  
Explosives of Class 3 (nitro compound) shall not be kept in the magazine after the expiration of one year from the date of their manufacture except with the special sanction of licensing authority.
- वर्ग 3 (नाइट्रो योगिक) के विस्फोटकों को, उनके विनिर्माण की तारीख से एक वर्ष बीत जाने के पश्चात मैगजीन में तभी रखा जाएगा जब कि किसी विस्फोटक नियंत्रक ने इसके लिए विशेष मंजूरी दे दी हो।  
(i) जब ऐसी मंजूरी दे दी गई हो तो प्रत्येक निरीक्षण पर किसी विस्फोटक नियंत्रक से ऐसा लिखित प्रमाणपत्र अभिप्राप्त कर लिया जाए जिसमें दी गई मंजूरी के अंतर्गत आनेवाली अवधि दर्शित की गई हो और ऐसे प्रमाणपत्र के अनुज्ञापिधारी अपने पास रखेगा और मांग की जाने पर प्रस्तुत करेगा।  
(ii) जब कोई विस्फोटक मानक शुद्धता का न रह जाने के कारण या द्रवणीकरण या नाइट्रो ग्लोअसरीन या द्रव नाइट्रो योगिक के निकल जाने के किन्हीं प्रकार होने के कारण मैगजीन में भण्डारित किए जाने के उपयुक्त नहीं रह जाता है तो अनुज्ञापिधारी अपने ही व्यय पर ऐसे विस्फोटक के निपटारे के लिए ऐसे निदेशों का अनुपालन करेगा जो मुख्य नियंत्रक या विस्फोटक नियंत्रक जारी करें।  
Explosives of Class 3 (nitro compound) shall not be kept in the magazine after the expiration of one year from the date of their manufacture except with the special sanction of the Controller of Explosives.  
(i) When such sanction has been given, a written certificate showing the period covered by the sanction shall be obtained from the Controller of Explosives at each inspection, and shall be kept by the licensee and produced on demand.  
(ii) When an explosive owing to its being no longer of standard purity or owing to signs of liquefaction or of exuded nitro-glycerin or liquid nitro-glycerin or liquid nitrocompound is no longer fit for storage in the magazine or store house the licensee shall comply, at his own expense, with such directions as to its disposal as the Chief Controller or Controller of Explosives may issue.
- मैगजीन के भीतरी भाग या उसमें लगी बेंचों, शेल्फों और उसकी फिटिंग का इस प्रकार सश्रमण किया जाएगा या उन्हें इस प्रकार अंतरित या अवतरित किया जाएगा कि विस्फोटक का किसी लोहे या इस्पात के साथ संपर्क रोका जा सके। भीतरी भाग में लगी बेंचें, शेल्फें और फिटिंग यथासाध्य ग्रिट से मुक्त एवं साफ रखे जाएंगे तथा ऐसे विस्फोटक, जो जल से खतरनाक रूप में प्रभावित हो सकते हैं, इस बाबत सम्यक सावधानी बरती जाएगी कि वहां कोई जल मौजूद न रहे: परंतु किसी लोहे या इस्पात के खुले होने के विरुद्ध सावधानी से संबंधित इस शर्त का वह भाग ऐसे किसी भवन में बाध्यकर नहीं होगा जिसमें वर्ग 6 (गोला बारूद) के प्रथम के विस्फोटक से भिन्न कोई विस्फोटक रखा गया है।  
The interior of the magazine and the benches, shelves and fittings therein shall be so constructed or so lined or covered as to prevent the exposure of any iron or steel contact with the explosives. Such interior, benches, shelves and fittings shall so far as is reasonably practicable, be kept free from grit and shall otherwise be clean; and in the case of any explosives liable to be dangerously affected by water, due precautions shall be taken to exclude water there from; Provided that so much of this condition as relates to precautions against the exposure of any iron or steel shall not be obligatory in a building in which no explosive other than explosive of the 1st Division 6th (Ammunition) Class is kept.
- यदि तड़ित चालक का परीक्षण विस्फोटक नियंत्रक करता है तो अनुज्ञापिधारी ऐसे परीक्षण के लिए विहित फीस का सदाय करेगा यदि परीक्षण असमाधानकारी साबित होता है तो उतनी ही फीस अनुज्ञापिधारी द्वारा पश्चात्कर्ता प्रत्येक परीक्षण के लिए तब तक दी जाती रहेगी जब तक कि परीक्षण अधिकारी तड़ित चालक को समाधानप्रद घोषित नहीं कर देता: परंतु किसी एक परीक्षण के लिए देय फीस किसी एक दिन के दौरान किसी चालक के किए गए सभी परीक्षणों के लिए प्रभाय होगा: परंतु यह और कि यदि दो या अधिक तड़ित चालक एक ही मैगजीन से संबद्ध हैं तो ऐसे सभी चालकों के परीक्षण के लिए फीस ऐसी किसी फीस से अधिक नहीं होगी जो किसी एक तड़ित चालक के परीक्षण के लिए हर स्थिति में विहित की गई है।  
If the lighting conductor is tested by the Controller of Explosives, the licensee shall pay the fees prescribed for test. In the even of the test proving unsatisfactory, the same fees shall be payable by the licensee for each subsequent test until the lighting conductor is passed by the testing officer as satisfactory: Provided that the fees payable for a single test shall be charged for all tests made on a conductor during any one day:  
Provided further that where two or more lighting conductors are attached to one and the same magazine, the fee for the testing of all such conductors shall not exceed the fee prescribed in this condition for testing a single lighting conductor.
- उपयुक्त तथा जब रहित कार्यकरण बस्तों, उपयुक्त जूतों के प्रयोग द्वारा तथा तलाशी लेकर या अन्यथा अथवा ऐसे किन्हीं साधनों द्वारा इस बाबत सम्यक उपबंध किया जाएगा कि फैक्ट्री परिसर में अग्नि, दियासलाई अथवा ऐसी कोई वस्तुएं या पदार्थ, जिससे विस्फोट हो सकता है या आग लग सकती हो, किन्तु इस शर्त के कारण ऐसी संरचना, स्थिति या स्वरूप में किसी कृत्रिम बत्ती का प्रवेश वर्जित नहीं है जिससे आग लगने या विस्फोट होने का खतरा न हो: परंतु इस शर्त का वह भाग, जो लोहे या इस्पात के अपवर्जन को लागू होता है, ऐसे किसी भवन के संबंध में बाध्य कर नहीं होगा जिससे भिन्न कोई विस्फोटक नहीं रखा गया है।  
Due provisions shall be made, by the use of suitable working clothes without pockets, suitable shoes and by searching or otherwise or by such means, for preventing the introduction into danger area of the factory premises of fire, Lucifer matches or any substance or article likely to cause explosion or fire, but this condition shall not prevent the introduction of an artificial light of such construction, position or character as not to cause any danger of fire or explosion: Provided that so much of this condition as applies to the exclusion of iron or steel, shall not be obligatory in a building in which no explosive other than an explosive of the 1st Division of the 6th (Ammunition) Class is kept.

their records.

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

Safety distances required to be kept clear around magazine for high explosives or fire works or factory licence number E/SC/TN/22/733(E97791) in form LE-3 granted to M/s.HANUMAN EXPLOSIVES PVT.LTD., NO.278/J2,FIRST FLOOR,KARUR MAIN ROAD,MULANUR,DHARAPURAM,FIRUPPUR,TAMIL NADU-638106, Tamil Nadu-636112 .

Type of Structure(s)	Safety distances meters	
<b>Inside Safety Distances(ISD)</b>		
1 Room or Workshop used in Connection with the Magazine	M	UM
2 Any other Explosives Magazine or store House or Factory of the Applicant	37	55
3 Magazine Office		
<b>Middle Safety Distances(MSD)</b>		
4 Magazine Keeper's or Chowkidar's Dwelling house		
5 Railway including Minerals and Private Railways		
6 Canal (in active use) or other navigable water		
7 Dock or Pier or Jetty		
8 Public Highway or Public Road		152
9 Private Road which is PRINCIPAL means of access to a Temple, Mosque, Church, Gurudwara or other places of worships, Hospital, College, School or Factory		
10 River Embankment or Sea Embankment or Public Well		
11 Reservoir or Bounded tank/rope way		
12 Windmillor or Solar panel for Power Generation		
<b>Outside Safety Distances(OSD)</b>		
13 Dwelling House		
14 Govt. and Public Building		
15 Temple, Mosque, Church or Gurudwara or other Places of Worships		
16 Shops, Market place, Public recreation and Sports Ground, College, School, Hospital, Theater, Cinema or other Building where the public are accustomed to assemble		
17 Factory		
18 Buildings or Works used for the Storage in Bulk of Petroleum, Sprit, gas, or other inflammable or hazardous substances		
19 Building or Works used for Storage and Manufacture of Explosives or of articles which contain Explosives		304
20 Aerodrome		
21 Furnace, Kiln or Chimney		
22 Quarry or mine pit head		
23 Power House or Electric Substation		
24 Wireless Station		
25 Warehouse or other Storage Building		
26 Any other Protected works		
<b>Overhead Electric lines</b>		
27 Electric Power over head Transmission Lines above 440V		90
28 Electric Power over head Transmission Lines upto 440V		15

The Date : 21/12/2018

For Joint Chief Controller of Explosives  
South Circle, Chennai

**Amendments :**

- Change in Postal Address dated : 03/11/2021
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 25/04/2022
- Amendment in Drawings/Facilities/Premises dated : 25/04/2022
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 11/11/2022
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 16/10/2023

**Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.**

11. अनुज्ञापिथारी प्ररूप आर.ई.-3 और आर.ई.-4 या आर.ई.-5, जेसी स्थिति हो, में सभी विस्फोटकों का अभिलेख और लेखा रखेगा और विस्फोटक नियम, 2008 के अधीन प्राधिकृत किसी भी अधिकारी के समक्ष उसके द्वारा ऐसा करने की मांग की जाने पर स्टाक पुस्तक और अभिलेख प्रस्तुत करेगा। स्टाक पुस्तक विहित प्रोफार्मा में पृष्ठ संख्यांकित होगी।  
The licensee shall keep records and accounts of all explosives in Forms RE-3 and RE-4 or RE-5, as the case may be, and exhibit the stock books and records to any of the officers authorised under the Explosives Rules, 2008 whenever such officer may call upon him to do so. The stock books in the prescribed proforma shall be page numbered.
12. परिसरों में कोई परिवर्तन या तबदीली अनुज्ञापन प्राधिकारी के पूर्वानुमोदन बिना नहीं की जाएगी और अनुज्ञापिथारी ऐसी किसी शर्त का अनुपालन करेगा जो इस निमित्त अनुज्ञापन प्राधिकारी विनिर्दिष्ट करें।  
No changes or alterations shall be carried out to the premises without prior approval of the licensing authority and the licensee shall comply with any condition that may be specified by the licensing authority in this behalf.
13. मैगजीन सभी समयों पर अच्छी मरम्मत की स्थिति में बनाई रखी जाएगी (या अच्छी हालत में बनाई रखी जाएगी)। यदि किसी कारणवश किसी विस्फोटक के भण्डारण के लिए मैगजीन अनुपयुक्त हो जाती है तो अनुज्ञापिथारी इस बात की सूचना अनुज्ञापन प्राधिकारी को तुरंत देगा।  
Magazine shall at all times be kept in state of good repair (or maintained in good condition). The licensee shall report to licensing authority forthwith, if the magazine becomes unfit for storage of any explosives for any reason whatsoever.  
मैगजीन का अनुज्ञापिथारी इन नियमों के नियम 24 के उप-नियम 3 के अनुसार त्रैमासिक विवरणी प्रस्तुत करेगा।  
The licensee of the magazine shall submit quarterly return as per sub-rules (3) and (4) of rule 24 of these rules.
14. यदि सुरक्षा दूरी का कोई अधिक्रमण होता है तो उसकी सूचना अनुज्ञापन प्राधिकारी को आवश्यक सलाह और कार्यवाही के लिए तुरंत दी जाएगी।  
Any encroachment of the safety distance shall be immediately communicated to the licensing authority for necessary advice and action.
15. यदि कोई विस्फोटक विनष्ट हुआ अथवा अनुपयोगी जाया जाता है तो उसकी सूचना अनुज्ञापन प्राधिकारी को, सलाह प्राप्त करने के लिए, तुरंत दी जाएगी।  
The licensing authority shall be immediately informed for advice if any explosive is found deteriorated or unserviceable.
16. विस्फोटकों के पैकेटों के चट्टे इस प्रकार लगाए जाएंगे कि कम से कम एक व्यक्ति भण्डार किए गए सभी पैकेटों की हालत की जांच करने और प्रत्येक पैकेज की विनिर्माण विशिष्टियों को पढ़ने के लिए उनके बीच से होकर आ जा सके।  
The explosive packages shall be stocked in such a way so as to allow movement of at least one person to check the condition of all packages stored and to read the manufacture particulars of each package.  
तलित चालकों की भूमि के लिए प्रतिरोध यथासंभव न्यूनतम होगा और किसी भी दशा में 10 ओहम से अधिक नहीं होगा।  
The resistance of the lightning conductor to earth shall be as low as possible and in no case be more than 10 ohms.
17. मैगजीन के चारों ओर 15 मीटर की दूरी के अंतर्गत कोई शुल्क घास या झाड़ी या ज्वलनशील सामग्री नहीं रहने दी जाएगी।  
A distance of 15 meters surrounding the magazine or store house shall be kept clear of dried grass or bush or flammable materials.
18. विस्फोटकों के प्रत्येक पैकेट की, जब उसे मैगजीन के भीतर लिया जा रहा हो, ठीक दशा जानने के लिए परीक्षा की जाएगी।  
Every package of explosive at the time of bringing inside the magazine shall be examined for its sound condition.
19. किसी मैगजीन / भंडारगृह में किसी एक समय में चार व्यक्तियों से अधिक को नहीं रहने दिया जाएगा।  
Not more than 4 persons shall be allowed inside the magazine or store house at any one time.
20. विस्फोटकों के खाली पैकेटों को शीघ्रतया वहां से हटा दिया जाएगा और नष्ट कर दिया जाएगा।  
Empty packages of the explosives shall be removed at the earliest and destroyed.
21. अनुज्ञापिथारी और कर्मचारियों को परिसर के भीतर आपातकाल के दौरान की जाने वाली प्रक्रियाओं से अवगत होना चाहिए।  
The licensee and the employee shall be conversant with procedure to be taken during the emergency within the premises.
22. निरीक्षण या नमूना अधिकारी को सभी युक्तियुक्त समयों पर अनुज्ञापन परिसर में अबाध रूप से पहुंचने दिया जाएगा और यह सुनिश्चित करने के लिए कि अधिनियम और इन नियमों के उपबंधों और सुरक्षा स्थितियों को सम्यक्तः अनुपालन किया जा रहा है, अधिकारी को प्रत्येक सुविधा प्रदान की जाएगी।  
Free access to the licensed premises shall be given at all reasonable times to any inspecting or sampling officer and every facility shall be afforded to the officer for ascertaining that the provisions of the Act and these rules and the safety conditions are duly observed.
23. यदि अनुज्ञापन प्राधिकारी या विस्फोटक नियंत्रक अनुज्ञापिथारक को अनुज्ञापन परिसरों या मशीनरी, टूल या उपकरण में ऐसी कोई मरम्मत या परिवर्तन या परिवर्तन करने या सिफारिशों को लागू करने को लिखित रूप में सूचित करता है जो परिसर के अंदर या बाहर या व्यक्तियों की सुरक्षा के लिए आवश्यक है, अनुज्ञापिथारक सिफारिशों को निष्पादित करेगा और विनिर्दिष्ट अवधि के भीतर अनुपालन रिपोर्ट ऐसे प्राधिकारी को देगा।  
If the licensing authority or a Controller of Explosives informs in writing, the holder of the licence to execute any repairs or to make any additions or alterations to the licensed premises or machinery, tools or apparatus or carry out recommendations, which are in the opinion of such authority may pose unacceptable risk and so necessary for the safety of either on-site or off-site of the premises or persons, the holder of the licence shall execute the recommendations and report compliance within the period specified by such authority.
24. अनुज्ञापिथारी मैगजीन में रखने और बिक्री के लिए प्राधिकृत विस्फोटक सूची में उल्लिखित अनुज्ञापन फैक्टरी या कंपनी से प्राधिकृत विस्फोटक / आतिशबाजी या सुरक्षा पल्लो खरीदेगा।  
The licensee shall purchase authorised explosives/ fireworks or safety fuse as mentioned in the list authorised explosives from a licensed factory or company for possession and sale from the magazine.
25. निम्न से अधिक खनि स्तर उत्पादित करने वाले आतिशबाजियों पटाखों की बिक्री और रखने के लिए -  
(क) जो फटने की जगह से चार मीटर की दूरी पर है, 125 डी.बी. (ए1) या 145 डी.बी. (सी) पी.के. प्रतिबंधित होंगे;  
(ख) श्रृंखला (सुड़े हुए पटाख) को गठन करने वाले व्यक्तिगत पटाखों के लिए उपर्युक्त उल्लिखित सीमा 5 लॉग<sub>10</sub> (एन) डी.बी. (सी) पी.के. प्रतिबंधित होंगे;  
The possession and sale of fire-crackers generating noise level exceeding;  
a) 125 dB(A) or 145 dB(C)pk at 4 meters distance from the point of bursting shall be prohibited;  
b) For individual fire-cracker constituting the series (joined fire-crackers), the above mentioned limit be reduced by 5 log<sub>10</sub> (N) dB, where N = number of crackers joined together.
26. आग या विस्फोट द्वारा दुर्घटना या नुकसान पटाखों की कमी या चोरी, तुरंत पास के पुलिस थाने और अनुज्ञापन प्राधिकारी और अनुज्ञापन प्राधिकारी के स्थानीय कार्यालय को रिपोर्ट की जाएगी।  
Accidents by fire or explosion and losses, shortage or theft of explosives shall be immediately reported to the nearest police station and the licensing authority and local office of the licensing authority.

**अतिरिक्त शर्तें / Additional Conditions :**

1. अनुज्ञापिथारी विदेशी मूल के आतिशबाजी को ना प्रदर्शित करेगा, ना रखेगा और ना ही उसकी बिक्री करेगा। The licensee shall not exhibit, possess and sell fireworks of foreign origin.

कृते संयुक्त मुख्य विस्फोटक नियंत्रक  
For Joint Chief Controller of Explosives  
दक्षिणार्क, चेन्नै। South Circle, Chennai

**Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.**



Government of India  
Ministry of Environment, Forest and Climate Change  
(Issued by the State Environment Impact Assessment  
Authority(SEIAA), TAMIL NADU)

To,

The -1

SRI MUTHUKUMAR BLUE METALS

No.94-C, Kundadam, Uthiyur Road, Kolimanguli Village, Dharapuram  
Taluk, Tiruppur District -638703

**Subject:** Grant of Environmental Clearance (EC) to the proposed Project Activity  
under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC)  
in respect of project submitted to the SEIAA vide proposal number  
SIA/TN/MIN/433715/2023 dated 17 Aug 2023. The particulars of the environmental  
clearance granted to the project are as below.

1. EC Identification No.	EC23B001TN149236
2. File No.	10153
3. Project Type	New
4. Category	B
5. Project/Activity including Schedule No.	1(a) Mining of minerals
6. Name of Project	Muthukumar Blue Metals Rough stone and Gravel Quarry Extent:2.45.0ha S.F.No. 986/B2A (P) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District
7. Name of Company/Organization	SRI MUTHUKUMAR BLUE METALS
8. Location of Project	TAMIL NADU
9. TOR Date	N/A

The project details along with terms and conditions are appended herewith from page  
no 2 onwards.

Date: 27/12/2023

(e-signed)  
Thiru.Deepak S.Bilgi  
Member Secretary  
SEIAA - (TAMIL NADU)

*Note: A valid environmental clearance shall be one that has EC identification  
number & E-Sign generated from PARIVESH.Please quote identification  
number in all future correspondence.*

*This is a computer generated cover page.*







THIRU.DEEPAK S. BILGI, I.F.S.  
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT  
ASSESSMENT AUTHORITY-TAMILNADU  
3<sup>rd</sup> Floor, Panagal Maaligai,  
No.1, Jeenis Road, Saidapet,  
Chennai - 600 015.  
Phone No. 044-24359973  
Fax No. 044-24359975

**ENVIRONMENTAL CLEARANCE**

**Lr.No. SEIAA-TN/F.No.10153/1(a)/EC.No:6170/2023,dated:07.11.2023.**

**Sir/Madam**

**Sub:** SEIAA, TN – Proposed Rough Stone and Gravel Quarry lease over an extent of 2.45.0 Ha in S.F.Nos. 986/B2A (P) (Patta land) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu by M/s. Sri Muthukumar Blue Metals under project category – “B2” and Schedule S.No. 1(a) Mining of Mineral Project – Issue of Environmental Clearance – Regarding.

- Ref:** 1. Online Proposal No SIA/TN/MIN/433715/2023, dated: 19.06.2023.  
2. Application seeking Environmental Clearance dated:23.06.2023.  
3. Minutes of the 402<sup>nd</sup> Meeting of SEAC held on 17.08.2023.  
4. Minutes of the 653<sup>rd</sup> Meeting of SEIAA held on 11.09.2023  
5. Minutes of the 417<sup>th</sup> Meeting of SEAC held on 18.10.2023.  
6. Minutes of the 671<sup>st</sup> Meeting of SEIAA held on 07.11.2023.

**Details of Minor Mineral Activity: -**

This is in reference to your application 1<sup>st</sup> & 2<sup>nd</sup> cited, the proposal for obtaining Environmental Clearance for mining/quarrying of minor minerals based on the particulars furnished in your application as shown below.

  
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Sl. No	Salient Features of the Proposal	
1.	Name of the Owner/Firm	M/s. Sri Muthukumar Blue Metals, No. 94-C, Kundadam, Uthiyur Road, Kolumanguli Village, Dharapuram Taluk, Tiruppur District – 638 703.
2.	Type of quarrying	: Rough Stone and Gravel Quarry
3.	S.F Nos. of the quarry site	: 986/B2A (P)
4.	Village in which situated	: Mudalipalayam
5.	Taluk in which situated	: Kangayam
6.	District in which situated	: Tiruppur
7.	Extent of quarry (in ha.)	: 2.45.0 Ha
8.	Latitude & Longitude of all corners of the quarry site	: 10°52'22.03"N to 10°52'28.08"N 77°31'06.45"E to 77°31'11.48"E
9.	Topo Sheet No.	: 58 F/09
10.	Type of mining	: Opencast Mechanized Method.
11.	Period of Current mine Plan	: 10 years
12.	Production (quantity in m <sup>3</sup> )	3,97,320m <sup>3</sup> of rough stone & 38,250m <sup>3</sup> of gravel
13.	Depth of Mine	42m below ground level
14.	Depth of water table	: 62m – 58m
15.	Man Power requirement per day:	: 22 Nos.
16.	Water requirement: 1. Drinking Purpose 2. Dust suppression 3. Green belt	1.0 KLD 0.2 KLD 0.5 KLD 0.3 KLD
17.	Power requirement	: 1,72,562 litres of HSD for the first five years
18.	Precise area communication approved by the Assistant	: Rc.No. 98/Mines/2023 Dated:03.05.2023.

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	Director, Dept.of Geology and Mining with date	
19.	Mining Plan approved by the Assistant Director, Dept.of Geology and Mining with date	: Rc.No. 98/Mines/2023 Dated:17.05.2023.
20.	500m cluster letter issued by the Assistant Director, Dept. of Geology and Mining with date	: Rc.No. 98/Mines/2023 Dated:17.05.2023
21.	VAO Certificate Regarding Structures within 300m Radius	: Letter dated: 19.05.2023.
22.	Project Cost (excluding EMP cost)	: Rs. 47,17,000/-
23.	EMP cost (in Rs. Lakh).	: Capital Cost – Rs. 37,48,500/- Recurring Cost – Rs. 30,28,801/-
24.	CER cost (in Rs. Lakh).	: Rs 5,00,000 /-
<p><b><u>Validity:</u></b></p> <p><b>This Environmental Clearance is accorded for the quantity of 3,97,320m<sup>3</sup> of rough stone &amp; 38,250m<sup>3</sup> of gravel up to the restricted depth of 42m below ground level (Bench 'x' in Section XY-AB not allowed) and the annual peak production should not exceed 42,025m<sup>3</sup> of rough stone &amp; 13,250m<sup>3</sup> of gravel.</b></p> <p><b>The Environmental Clearance issued is valid as per the approved mine plan period and as per MoEF&amp;CC's notification S.O.1533(E) dated.14.09.2006 and S.O. 1807(E) dated 12.04.2022</b></p>		

**AFFIDAVIT FURNHSED BY THE PROPONENT**

We, M/s. Sri Muthukumar Blue Metals, residing at No. 94-C, Kundadam, Uthiyur Road, Kolumanguli Village, Dharapuram Taluk, Tiruppur – 638 703, solemnly declare and sincerely affirm that:

We have apply for getting Environment Clearance to SEIAA, Tamil Nadu State for quarry lease for quarrying of Rough stone and Gravel Quarry Project over an Extent of 2.45.0Ha of Patta land in S.F.No. 986/B2A (P) of Mudalipalayam Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State.

  
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1. We swear to state and confirm that within 10km area of the quarry site, we have applied for environment clearance, none of the following is situated:
  - a. Protected areas notified under the wild life (Protection) Act, 1972,
  - b. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and Control of Pollution) Act, 1974.
  - c. Eco-Sensitive areas as notified.
  - d. Interstate Boundary
2. We will spend the amount of Rs.5 Lakhs towards Corporate Environment Responsibility (Revised CER) for the following activities to the Panchayat Union Primary School, Kolumanguzhi Village, Dharapuram- 638703., before commencement of quarrying activities.

Sl. No.	Description	Cost break up
1	Renovation of Existing Toilets and Maintenance	2,00,000/-
2	Renovation of school ground and providing Sports equipment's to school students	2,50,000/-
3	Plantation along the School Boundary @ 100 Nos	25,000/-
4	Providing Environmental related books to School Library	25,000/-
<b>TOTAL</b>		<b>5,00,000/-</b>

3. The total area of following quarries located within 500m radius from the periphery of my quarry site details as shown below:

**I. Existing Quarries:**

S. No.	Name of the Lease	Village	S.F. No	Extent in Hects.	Collector's Proceeding No. & Date	Lease Period
1	B.Rajamani	Mudhali Palayam	984/2A2 (P) 984/2B (P)	1.21.4	443/Mines/2017 Dated 05.10.2018	05.10.2018 - 04.09.2023

**II. Abandoned/Expired Quarries:**

S. No.	Name of the Lease	Village	S.F. No	Extent in Hects.	Collector's Proceeding No. & Date	Lease Period
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1.	T. Guna Sekaran	Mudhali Palayam	986/B1 (Part)	0.96.0	384/ Mines/2016/D ated 16.04.2018	16.04.2018- 15.04.2023
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### III. Present Proposed quarries

S. No.	Name of the Lease	Village	S.F. No	Extent in Hects.	Collector's Proceeding No. & Date	Lease Period
1.	Sri Muthukumar Blue Metals	Mudhali Palayam	986/B2A (Part)	2.45.0	--	Proposed quarry

4. There will not be hindrance or disturbance to the people living during quarrying activities and transportation of the mineral.
5. There is no approved habitation within 300m radius from the periphery of our quarry.
6. We swear that afforestation will be carried out during the course of quarrying operation and maintained.
7. The required insurance will be taken in the name of the laborers working in our quarry site.
8. The existing road from the main road to quarry is in good condition and the same is being maintained and utilized for Transportation of Rough stone.
9. We will not engage any child labor in my quarry site and we aware that engaging child labor is punishable under the law.
10. All types of safety / protective equipment will be provided to all the laborers working in our quarry.
11. No permanent structures, temples etc., are located within 500m radius from the periphery of our quarry.

We ensure to do all the social and Environment Commitment as mentioned in the scheme of mining to the best of our knowledge.

### **DETAILS OF QUARRIES LOCATED WITHIN 500M RADIUS FROM THE PROPOSED QUARRY:**

The Project Proponent has submitted a copy of the letter obtained from the Assistant Director, Department of Geology & Mining, Tiruppur District. In his/her letter Rc.No. 98/Mines/2023 Dated:17.05.2023, he/she has stated that the details of other quarries within a radius 500m from the boundary of the proposed quarry site as follows:

  
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**I. Existing Quarries:**

S. No.	Name of the Lease	Village	S.F. No	Extent in Hects.	Collector's Proceeding No. & Date	Lease Period
1	B.Rajamani	Mudhali Palayam	984/2A2 (P) 984/2B (P)	1.21.4	443/Mines/2017 Dated 05.10.2018	05.10.2018-04.09.2023

**II. Abandoned/Expired Quarries:**

S. No.	Name of the Lease	Village	S.F. No	Extent in Hects.	Collector's Proceeding No. & Date	Lease Period
1.	T. Guna Sekaran	Mudhali Palayam	986/BI (Part)	0.96.0	384/ Mines/2016/Dated 16.04.2018	16.04.2018 - 15.04.2023

**III. Present Proposed quarries**

S. No.	Name of the Lease	Village	S.F. No	Extent in Hects.	Collector's Proceeding No. & Date	Lease Period
1.	Sri Muthukumar Blue Metals	Mudhali Palayam	986/B2A (Part)	2.45.0	--	Proposed quarry

**DISCUSSION BY SEIAA AND THE REMARKS: -**

The subject was placed in the 671<sup>st</sup> authority meeting held on 07.11.2023. The authority noted that the subject was appraised in the 417<sup>th</sup> SEAC meeting held on 18.10.2023. Based on the presentation and the details furnished by the project proponent, the SEAC decided to re-iterate the recommendations already made in 402<sup>nd</sup> SEAC meeting held on 17.08.2023 subject to the conditions stated in the minutes of 402<sup>nd</sup> SEAC meeting in addition to the specific conditions stated therein.

After detailed discussions, the Authority taking into account the recommendations of SEAC and also the safety aspects and to ensure sustainable, scientific and systematic mining, decided to grant Environmental Clearance for the quantity of 3,97,320m<sup>3</sup> of rough stone & 38,250m<sup>3</sup> of gravel up to the restricted depth of 42m below ground level (Bench 'x' in Section XY-AB not allowed)

  
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and the annual peak production should not exceed 42,025m<sup>3</sup> of rough stone & 13,250m<sup>3</sup> of gravel. This is also subject to the conditions imposed by SEAC, normal conditions stipulated by MOEF&CC in addition to the following conditions and the conditions in Annexure 'A' of this minutes.

1. Keeping in view of MoEF&CC's notification S.O.1533(E) dated.14.09.2006 and S.O. 1807(E) dated 12.04.2022, this Environmental Clearance is valid as per the approved mine plan period.
2. The EC granted is subject to review by District Collector, Mines Dept. and TNPCB on completion of every 5 years and also during the mine plan period, till the project life so as to review the EC conditions and to ensure that they have all been adhered to and implemented.
3. The project proponent shall submit a Certified Compliance Report obtained from IRO of MoEF&CC to the monitoring, regulatory and other concerned authorities including SEIAA, while seeking a renewal of the mining plan to cover the project life.
4. There should be regular monitoring of air quality, water quality, ground water level and noise quality and reports regarding the same should be submitted to TNPCB, SEIAA & IRO of MoEF&CC once in every 6 months.
5. The proponent shall strictly adhere to the mining plan and half yearly and annual returns shall be submitted to the Director of Geology and Mining Department with copy marked to TNPCB, SEIAA & IRO of MoEF&CC.
6. Biodiversity in and around the project area should be monitored frequently and detailed biodiversity report should be submitted every year to SEIAA & IRO of MoEF&CC.
7. The progressive and final mine closure plan including the green belt implementation and environmental norms should be strictly followed as per the EMP and as per the amount committed and approved in EC for EMP. Status of progressive mine closure and green belt implementation should be included in the half yearly compliance report submitted to TNPCB, SEIAA & IRO of MoEF&CC.
8. As per the OM vide F. No. IA3-22/1/2022-IA-III [E- 172624] Dated: 14.06.2022, the Project Proponents are directed to submit the six-monthly compliance on the environmental conditions prescribed in the prior environmental clearance letter(s) through newly developed compliance module in the PARIVESH Portal from the respective login.
9. The amount allocated for EMP should be kept in a separate account and both the capital and recurring expenditures should be done year wise for the works identified, approved and as

  
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committed. The work & expenditure made under EMP should be elaborated in the bi-annual compliance report submitted and also should be brought to the notice of concerned authorities during inspections.

**Annexure 'A'**

**a) EC Compliance**

1. The Environmental Clearance is accorded based on the assurance from the project proponent that there will be full and effective implementation of all the undertakings given in the Application Form, Pre-feasibility Report, mitigation measures as assured in the Environmental Impact Assessment/ Environment Management Plan and the mining features including Progressive Mine Closure Plan as submitted with the application.
2. All the conditions as presented by the proponent in the PPT during SEAC appraisal should be addressed in Full.
3. The proponent shall submit Compliance Reports on the status of compliance of the stipulated EC conditions including results of monitored data. It shall be sent to the respective Regional Office of Ministry of Environment, Forests and Climate Change, Govt. of India and also to the Office of State Environment Impact Assessment Authority (SEIAA).
4. Concealing the factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

**b) Applicable Regulatory Frameworks**

5. The project proponent shall strictly adhere to the provisions of Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act, 2002, Biological diversity Rules, 2004 & TN Forest Act, 1882 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

  
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**SEIAA-TN**



**c) Safe mining Practices**

6. The AD/DD, Dept. of Geology & Mining shall ensure operation of the proposed quarry after the submission slope stability study conducted through the reputed research & Academic Institutions such as NIRM, IITs, NITS Anna University, and any CSIR Laboratories etc.
7. The AD/DD, Dept. of Geology & Mining & Director General of Mine safety shall ensure strict compliance and implementation of bench wise recommendations/action plans as recommended in the scientific slope stability study of the reputed research & Academic Institutions as a safety precautionary measure to avoid untoward accidents during mining operation.
8. A minimum buffer distance specified as per existing rules and statutory orders shall be maintained from the boundary of the quarry to the nearest dwelling unit or other structures, and from forest boundaries or any other ecologically sensitive and archeologically important areas or the specific distance specified by SEIAA in EC as per the recommendations of SEAC depending on specific local conditions.

**d) Water Environment – Protection and mitigation measures**

9. The proponent shall ensure that the activity does not disturb the water bodies and natural flow of surface and groundwater, nor cause any pollution, to water sources in the area.
10. The proponent shall ensure that the activities do not impact the water bodies/wells in the neighboring open wells and bore wells. The proponent shall ensure that the activities do not in any way affect the water quantity and quality in the open wells and bore wells in the vicinity or impact the water table and levels. The proponent shall ensure that the activities do not disturb the river flow, nor affect the Odai, Water bodies, Dams in the vicinity.
11. Water level in the nearest dug well in the downstream side of the quarry should be monitored regularly and included in the Compliance Report.
12. Quality of water discharged from the quarry should be monitored regularly as per the norms of State Pollution Control Board and included in the Compliance Report.
13. Rain Water Harvesting facility should be installed as per the prevailing provisions of TNMBR/TNCDBR, unless otherwise specified. Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project.
14. Regular monitoring of flow rates and water quality upstream and downstream of the springs and perennial nallahs flowing in and around the mine lease area shall be carried out and reported in the compliance reports to SEIAA.

  
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15. Regular monitoring of ground water level and water quality shall be carried out around the mine area during mining operation. At any stage, if it is observed that ground water table is getting depleted due to the mining activity; necessary corrective measures shall be carried out.
16. Garland drains and silt traps are to be provided in the slopes around the core area to channelize storm water. De-silting of Garland canal and silt traps have to be attended on a daily basis. A labour has to be specifically assigned for the purpose. The proponent shall ensure the quality of the discharging storm water as per the General Effluent Discharge Standards of CPCB.

**e) Air Environment – Protection and mitigation measures**

17. The activity should not result in CO<sub>2</sub> release and temperature rise and add to micro climate alternations.
18. The proponent shall ensure that the activities undertaken do not result in carbon emission, and temperature rise, in the area.
19. The proponent shall ensure that Monitoring is carried out with reference to the quantum of particulate matter during excavation; blasting; material transport and also from cutting waste dumps and haul roads.

**f) Soil Environment – Protection and mitigation measures**

20. The proponent shall ensure that the operations do not result in loss of soil biological properties and nutrients.
21. The proponent shall ensure that activity does not deplete the indigenous soil seed bank and disturb the mycorrhizal fungi, soil organism, soil community nor result in eutrophication of soil and water.
22. The activities should not disturb the soil properties and seed and plant growth. Soil amendments as required to be carried out, to improve soil health.
23. Bio remediation using microorganisms should be carried out to restore the soil environment to enable carbon sequestration.
24. The proponent shall ensure that the mine restoration is done using mycorrhizal VAM, vermin-composting, Biofertilizers to ensure soil health and biodiversity conservation.
25. The proponent shall ensure that the topsoil is protected and used in planting activities in the area.

  
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26. The proponent shall ensure that topsoil to be utilized for site restoration and Green belt alone within the proposed area.
27. The top soil shall be temporarily stored at earmarked place (s) and used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. At critical points, use of geotextile shall be undertaken for stabilization of the dump. Protective wall or gabions should be made around the dump to prevent erosion / flow of sediments during rains. The entire excavated area shall be backfilled.
28. Activities should not result in invasion of site by exotic and alien plant and animal species and disturb the native biodiversity and soil micro flora and fauna.

**g) Noise Environment – Protection and mitigation measures**

29. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
30. The sound at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Hence, the PP shall ensure that the biological clock of the villages are not disturbed because of the mining activity.

**h) Biodiversity - Protection and mitigation measures**

31. The proponent should ensure that there is no disturbance to the agriculture plantations, social forestry plantations, waste lands, forests, sanctuary or national parks. There should be no impact on the land, water, soil and biological environment and other natural resources due to the mining activities.
32. No trees in the area should be removed and all the trees numbered and protected. In case trees fall within the proposed quarry site the trees may be transplanted in the Greenbelt zone. The proponent shall ensure that the activities in no way result in disturbance to forest and trees in vicinity. The proponent shall ensure that the activity does not disturb the movement of grazing animals and free ranging wildlife. The proponent shall ensure that the activity does not disturb the biodiversity, the flora & fauna in the ecosystem. The proponent shall ensure that the activity does not result in invasion by invasive alien species. The proponent shall ensure that the activities do not disturb the resident and migratory birds. The proponent shall

  
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ensure that the activities do not disturb the vegetation and wildlife in the adjoining reserve forests and areas around.

33. The proponent shall ensure that the activities do not disturb the agro biodiversity and agro farms. Actions to be taken to promote agroforestry, mixed plants to support biodiversity conservation in the mine restoration effort.
34. The proponent shall ensure that all mitigation measures listed in the EIA/EMP are taken to protect the biodiversity and natural resources in the area.
35. The proponent shall ensure that the activities do not impact green lands/grazing fields of all types surrounding the mine lease area which are food source for the grazing cattle.

**i) Climate Change**

36. The project activity should not in any way impact the climate and lead to a rise in temperature.
37. There should be least disturbance to landscape resulting in land use change, contamination and alteration of soil profiles leading to Climate Change.
38. Intensive mining activity should not add to temperature rise and global warming.
39. Operations should not result in GHG releases and extra power consumption leading to Climate Change.
40. Mining through operational efficiency, better electrification, energy use, solar usage, use of renewable energy should try to decarbonize the operations.
41. Mining Operation should not result in droughts, floods and water stress, and shortages, affecting water security both on site and in the vicinity.
42. Mining should not result in water loss from evaporation, leaks and wastage and should support to improve the ground water.
43. Mining activity should be flood proof with designs and the drainage, pumping techniques shall ensure climate-proofing and socio-economic wellbeing in the area and vicinity.

**j) Reserve Forests & Protected Areas**

44. The activities should provide nature based support and solutions for forest protection and wildlife conservation.
45. The project activities should not result in forest fires, encroachments or create forest fragmentation and disruption of forest corridors.
46. There should be no disturbance to the freshwater flow from the forest impacting the water table and wetlands.

  
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47. The project proponent should support all activities of the forest department in creating awareness to local communities on forest conservation.
48. The project activities should not alter the geodiversity and geological heritage of the area.
49. The activities should not result in temperature rise due to increased fossil fuels usage disrupting the behaviour of wildlife and flora.
50. The activities should support and recognise the rights and roles of indigenous people and local communities and also support sustainable development.
51. The project activities should support the use of renewables for carbon capture and carbon storage in the project site and forest surrounds.
52. The project activities should not result in changes in forest structure, habitats and genetic diversity within forests.

**k) Green Belt Development**

53. The proponent shall ensure that in the green belt development more indigenous trees species (Appendix as per the SEAC Minutes) are planted.
54. The proponent shall ensure the area is restored and rehabilitated with native trees as recommended in SEAC Minutes (in Appendix).

**l) Workers and their protection**

55. The project proponent is responsible for implementing all the provisions of labour laws applicable from time to time to quarrying /Mining operations. The workers on the site should be provided with on-site accommodation or facilities at a suitable boarding place, protective equipment such as ear muffs, helmet, etc.
56. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.
57. The workers shall be employed for working in the mines and the working hours and the wages shall be implemented/enforced as per the Mines Act, 1952.

**m) Transportation**

58. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a bypass road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road

  
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movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.

59. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

**n) Storage of wastes**

60. The project proponent shall store/dump the waste generated within the earmarked area of the project site for mine closure as per the approved mining plan.

**o) CER/EMP**

61. The CER should be fully Implemented and fact reflected in the Half-yearly compliance report.

62. The EMP shall also be implemented in consultation with local self-government institutions & Govt. departments.

63. The follow-up action on the implementation of CER Shall be included in the compliance report.

**p) Directions for Reclamation of mine sites**

64. The mining closure plan should strictly adhere to appropriate soil rehabilitation measures to ensure ecological stability of the area. Reclamation/Restoration of the mine site should ensure that the Geotechnical, physical, chemical properties are sustainable that the soil structure composition is buildup, during the process of restoration.

  
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65. The proponent shall ensure that the mine closure plan is followed as per the mining plan and the mine restoration should be done with native species, and site restored to near original status. The proponent shall ensure that the area is ecologically restored to conserve the ecosystems and ensure flow of goods and services.
66. A crucial factor for success of reclamation site is to select sustainable species to enable develop a self-sustaining eco system. Species selected should easily establish, grow rapidly, and possess good crown and preferably be native species. Species to be planted in the boundary of project site should be un palatable for cattle's/ goats and should have proven capacity to add leaf-litter to soil and decompose. The species planted should be adaptable to the site conditions. Should be preferably pioneer species, deciduous in nature to allow maximum leaf-litter, have deep root system, fix atmospheric nitrogen and improve soil productivity. Species selected should have the ability to tolerate altered pit and toxicity of and site. They should be capable of meeting requirement of local people in regard to fuel fodder and should be able to attract bird, bees and butterflies. The species should be planted in mixed association.
67. For mining area reclamation plot culture experiments to be done to identify/ determine suitable species for the site.
68. Top soil with a mix of beneficial microbes (Bacteria/Fungi) to be used for reclamation of mine spoils. AM Fungi (Arbuscular mycorrhizal fungi), plant growth promoting Rhizo Bacteria and nitrogen fixing bacteria to be utilized.
69. Soil and moisture conservation and water harvesting structures to be used where ever possible for early amelioration and restoration of site.
70. Top soil is most important for successful rehabilitation of mined sites. Topsoil contains majority of seeds and plant propagation, soil microorganism, Organic matter and plant nutrients. Wherever possible the topsoil should be immediately used in the area of the for land form reconstruction, to pre mining conditions.
71. Over burdens may be analyzed and tested for soil characteristics and used in the site for revegetation. Wherever possible seeds, rhizome, bulbs, etc of pioneering spices should be collected, preserved and used in restoring the site.
72. Native grasses seeds may be used as colonizers and soil binders, to prevent erosion and allow diverse self- sustaining plant communities to establish. Grasses may offer superior tolerance to drought, and climatic stresses.

  
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73. Reclamation involves planned topographical reconstruction of site. Care to be taken to minimize erosion and runoff. Topsoils should have necessary physical, chemical, ecological, properties and therefore should be stored with precautions and utilized for reclamation process. Stocked topsoil should be stabilized using grasses to protect from wind. Seeds of various indigenous and local species may be broadcasted after topsoil and treated overburden are spread.
74. Alkaline soils, acidic soils, Saline soils should be suitably treated/amended using green manure, mulches, farmyard manure to increase organic carbon. The efforts should be taken to landscape and use the land post mining. The EMP and mine closure plan should provide adequate budget for re-establishing the site to pre-mining conditions. Effective steps should be taken for utilization of overburden. Mine waste to be used for backfilling, reclamation, restoration, and rehabilitation of the terrain without affecting the drainage and water regimes. The rate of rehabilitation should be similar to rate of mining. The land disturbed should be reshaped for long term use. Mining should be as far as possible be eco-friendly. Integration of rehabilitation strategies with mining plan will enable speedy restoration.
75. Efforts should be taken to aesthetically improve the mine site. Generally, there are two approaches to restoration i.e Ecological approach which allows tolerant species to establish following the succession process allowing pioneer species to establish. The other approach i.e plantation approach is with selected native species are planted. A blend of both methods may be used to restore the site by adding soil humus and mycorrhiza.
76. Action taken for restoration of the site should be specifically mentioned in the EC compliances.

**CONDITIONS IMPOSED BY SEAC:**

- 1) The prior Environmental Clearance granted for this mining project shall be valid for the project life including production value as laid down in the mining plan approved and renewed by competent authority, from time to time, subject to a maximum of thirty years, whichever is earlier, vide MoEF&CC Notification S.O, 1807(E) dated 12.04.2022.
- 2) The PP shall carry out the small dia blasting with maximum of 30 to 40 holes per round after obtaining the prior permission from the Director of Mines Safety, DGMS-Chennai Region.
- 3) Due to the existence of structures within a radial distance of 500 m, the PP shall carry out the scientific studies within a period of six months from the commencement of quarrying operations

  
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after obtaining prior permission from the Director of Mines Safety/Chennai Region, to design the controlled blast parameters for reducing the blast-induced ground/air- vibrations and eliminating the fly rock from the blasting operations carried out in the proposed quarry, by involving anyone of these reputed Research and Academic Institution such as CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance without any deviation.

- 4) For securing the safety of persons employed in the mine, the PP shall carry out the scientific studies to assess the slope stability of the benches and the existing quarry wall during the 3<sup>rd</sup> year and 8<sup>th</sup> year of quarrying operations, by involving anyone of these reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engg -IIT(Madras), NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus, etc. A copy of such scientific study report shall be submitted to the SEIAA, MoEF, TNPCB, AD/Mines-DGM and DMS, Chennai as a part of Environmental Compliance without any deviation.
- 5) The PP shall not adopt the 'Deep-hole large diameter drilling and blasting' without obtaining the prior permission obtained from the Director of Mines Safety, DGMS-Chennai Region.
- 6) The PP shall furnish a Standard Operating Procedures (SoP) for carrying out the blasting operations to the concerned AD (Mines) at the time of execution of lease.
- 7) As accepted by the Project Proponent the CER cost of **Rs. 5 Lakhs** and the amount shall be spent for the activities as committed towards the Panchayat Union Primary School, Kolumanguzhi Village before obtaining CTO from TNPCB.
- 8) The PP shall inform send the 'Notice of Opening' of the quarry to the Director of Mines Safety, Chennai Region before obtaining the CTO from the TNPCB.
- 9) The Project Proponent shall abide by the annual production scheduled specified in the approved mining plan and if any deviation is observed, it will render the Project Proponent liable for legal action in accordance with Environment and Mining Laws.
- 10) The proponent shall appoint the statutory competent persons relevant to the proposed quarry size as per the provisions of Mines Act 1952 and Metalliferous Mines Regulations, 1961, as amended from time to time.

  
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- 11) Within a period one month from the execution of lease deed, the PP shall ensure that the persons deployed in the quarry including all the contractual employees/truck drivers shall undergo initial/periodical training in the DGMS approved GVTC situated in Trichy / Salem / Hosur.
- 12) The PP shall construct a garland drain of size, gradient and length around the proposed quarry incorporating garland canal, silt traps, siltation pond and outflow channel connecting to a natural drain should be provided prior to the commencement of mining. Garland drain, silt-traps, siltation ponds and outflow channel should be de-silted periodically and geo-tagged photographs of the process should be included in the HYCR.
- 13) Monitoring of drainage water should be carried out at different seasons by an NABL accredited lab and clear water should only be discharged into the natural stream. Geo-tagged photographs of the drainage and sampling site should be submitted along with HYCR.
- 14) The proponent shall install the 'S3 (or) G2' type of fencing all around the boundary of the proposed working quarry with gates for entry/exit before the commencement of the operation as recommended in the DGMS Circular, 11/1959 and shall furnish the photographs showing the same before obtaining the CTO from TNPCB.
- 15) The Proponent shall submit a conceptual 'Slope Stability Action Plan' incorporating the benches & accessible haul road approved by the concerned AD (Mines) for the proposed quarry to the DEE/TNPCB at the time of obtaining the CTO.
- 16) The PP shall ensure that the persons employed in the quarry whether permanent, temporary or contractual are undergoing the initial/periodical medical examination in the DGMS approved OHS Clinics/Hospitals as per the DGMS Circular No. 01 of 2011 before they are engaged in mining activities.
- 17) The PP shall ensure that the persons employed in the quarry whether permanent, temporary or contractual are provided with adequate PPEs before engaged in mining operations.
- 18) The PP shall meticulously carry out the mitigation measures as spelt out in the approved EMP.
- 19) Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology should be adopted by considering the wind direction.

  
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- 20) The Project Proponent shall ensure that the funds earmarked for environmental protection measures are kept in a separate bank account and should not be diverted for other purposes. Year-wise expenditure should be included in the HYCR.
- 21) The Project Proponent shall send a copy of the EC to the concerned Panchayat/local body.
- 22) Perennial maintenance of haulage road/village / Panchayat Road shall be done by the project proponent as required, in coordination with the concerned Govt. Authority.
- 23) Perennial sprinkling arrangements shall be in place on the haulage road for fugitive dust suppression. Fugitive emission measurements should be carried out during the mining operation at regular intervals and submit the consolidated report to TNPCB once in six months.
- 24) The Proponent shall ensure that the noise level is monitored during mining operation at the project site for all the machineries deployed and adequate noise level reduction measures are undertaken accordingly. The report on the periodic monitoring shall be included in the HYCR.
- 25) Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology to be adopted by considering the wind direction.
- 26) 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. 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.
- 27) 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.
- 28) **Noise and Vibration Related:** (i) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (ii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone.

  
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- 29) The PP shall carry out maximum of only one round of controlled blast per day, restricted to the maximum of 30 to 40 number of holes per round with maintaining maximum charge per delay in such a manner that the blast-induced ground vibration level (Peak Particle Velocity) measured in the houses/structures located at a distance of 500 m shall not exceed 2.0 mm/s and no fly rock shall travel beyond 20 m from the site of blasting.
- 30) The PP shall also ensure that the blasting operations are not carried out on a 'day after day' basis and a minimum 24 hours break should be observed between blasting days to reduce the environmental impacts effectively.
- 31) If 'Deep-hole large diameter drilling and blasting' is required, then the PP shall obtain special permission from DGMS.
- 32) The PP shall ensure that the blasting operations shall be carried out during a prescribed time interval with a prior notice to the habitations situated around the proposed quarry after having posted the sentries/guards adequately to confirm the non-exposure of public within the danger zone of 500 m from the boundary of the quarry. The PP shall use the jack hammer drill machine fitted with the dust extractor for the drilling operations such that the fugitive dust is controlled effectively at the source.
- 33) The PP shall ensure that the blasting operations are carried out by the blaster/Mine Mate/Mine Foreman employed by him in accordance with the provisions of MMR 1961 and it shall not be carried out by the persons other than the above statutory personnel.
- 34) The proponent shall undertake in a phased manner restoration, reclamation and rehabilitation of lands affected by the quarrying operations and shall complete this work before the conclusion of such operations as per the Environmental Management Plan & the approved Mine Closure Plan.
- 35) Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB.
- 36) The operation of the quarry should not affect the agricultural activities & water bodies near the project site and a 50 m safety distance from water body should be maintained without carrying any activity. The proponent shall take appropriate measures for "Silt Management" and prepare a SOP for periodical de-siltation indicating the possible silt content and size in case of any agricultural land exists around the quarry.
- 37) The proponent shall provide sedimentation tank / settling tank with adequate capacity for runoff management.

  
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- 38) The proponent shall ensure that the transportation of the quarried granite stones shall not cause any hindrance to the Village people/Existing Village Road and shall take adequate safety precautionary measures while the vehicles are passing through the schools / hospital. The Project Proponent shall ensure that the road may not be damaged due to transportation of the quarried granite stones; and transport of granite stones will be as per IRC Guidelines with respect to complying with traffic congestion and density.
- 39) To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of the mining operation.
- 40) The Project Proponent shall comply with the provisions of the Mines Act, 1952, MMR 1961 and Mines Rules 1955 for ensuring safety, health and welfare of the people working in the mines and the surrounding habitants.
- 41) The project proponent shall ensure that the provisions of the MMDR Act, 1957 & the MCDR 2017 and Tamilnadu Minor Mineral Concession Rules 1959 are complied by carrying out the quarrying operations in a skillful, scientific and systematic manner keeping in view proper safety of the labour, structure and the public and public works located in that vicinity of the quarrying area and in a manner to preserve the environment and ecology of the area.
- 42) The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be informed to the District AD/DD (Geology and Mining) District Environmental Engineer (TNPCB) and the Director of Mines Safety (DMS), Chennai Region by the proponent without fail.
- 43) The Project Proponent shall abide by the annual production scheduled specified in the approved mining plan and if any deviation is observed, it will render the Project Proponent liable for legal action in accordance with Environment and Mining Laws.
- 44) All the conditions imposed by the Assistant/Deputy Director, Geology & Mining, concerned District in the mining plan approval letter and the Precise area communication letter issued by concerned District Collector should be strictly followed.
- 45) That the grant of this E.C. is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the project proponent.

  
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- 46) As per the directions contained in the OM F.No.22-34/2018-IA.III dated 16th January 2020 issued by MoEFCC, the Project Proponent shall, undertake re-grassing the mining area and any other area which may have been disturbed due to his mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. The compliance of this direction shall be included in the Half Yearly Compliance Report which will be monitored by SEAC at regular intervals.
- 47) The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- 48) If the R.F is located very close to the proposed quarry site, the PP shall develop Green Belt (Thick Tree plantation in two to three rows) along the boundary of the mine lease area before obtaining the CTO from the TNPCB.
- 49) The proponent shall construct and maintain proper fencing all around the boundary of the proposed working quarry adjacent to the direction of the location of the Reserved Forest before the commencement of the operation and shall furnish the photographs showing the same before obtaining the CTO from TNPCB.
- 50) The PP shall take steps so that the overburden, waste rock, rejects and fines generated during the mining operations shall be stored in separate dumps positioned in opposite direction to the location of the reserved forest.
- 51) The PP shall ensure that such waste/reject dumps shall be properly secured to prevent escape of material there from in harmful quantities which may cause degradation of environment and to prevent causation of floods.
- 52) The PP shall select the site for dumps on impervious ground to ensure minimum leaching effects due to precipitations.
- 53) The PP shall take necessary steps that wherever possible, the waste rock, overburden etc. shall be back-filled into the mine excavations with a view to restoring the land to its original use as far as possible.
- 54) Wherever back-filling of waste rock in the area excavated during mining operations is not feasible, the PP shall take adequate steps in discussion with the concerned DFO to suitably terrace the waste dumps ensuring the stability through vegetation to consolidate the green belt development in the areas adjacent to the reserved forest location.

  
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- 55) The PP shall carry out the scientific investigations in order to keep the ground and noise vibrations caused by blasting operations and movement of HEMM such as Excavators, Trucks within safe limit.
- 56) The PP shall not perform secondary breakage involving the drilling & blasting in the quarrying operations and it can be replaced with non-conventional methods such as noise-controlled rock breakers, usage of non-explosive expansive materials/chemicals, Hydraulic Splitting based on the suitable scientific studies carried out by any reputed scientific and academic institutions.
- 57) The PP shall take adequate steps to control the air pollution due to fines, dust, smoke or gaseous emissions during the quarrying operations within 'Permissible Limits' specified under the environmental laws.
- 58) The Quarrying and Mining activities shall be restricted in the Eco-sensitive Zone of 60 m from the boundary of the Reserved area and hence the PP shall not even indulge in constructing the haul roads in these areas.
- 59) No development on existing steep hill slopes or slopes with a high degree of erosion shall be permitted. Hence, the PP shall not carry out the quarrying on steep hill slopes with a gradient of 20° or more or areas with a high degree of erosion on forestland.
- 60) The PP shall give an affidavit at the time of lease execution that there will be no felling of trees (or) any encroachment will not be made on these Reserved Forest lands and also within the Eco-sensitive Zone of 60 m without the prior permission of the State Government in case of reserve forest land as per the procedures laid down by the State Government.
- 61) The PP shall not use plastic carry bags within the quarry area.
- 62) The PP shall ensure that all the haul roads within the quarry lease shall be provided with adequate number of road side drains and these drains shall be kept free from blockage for runoff disposals. This run off from the road side drainage shall relate to the natural drainage system in the area.
- 63) The PP shall adhere to the provisions of the MoEF had issued Notification No. S.O. 1545 dated 25th June 2009 regulating certain activities in the eco-sensitive zone to conserve and protect the reserved forest area from ecological and environmental point of view.

  
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**SPECIAL MITIGATION MEASURES FOR THE QUARRIES LOCATED IN CLOSE PROXIMITY TO THE WINDMILLS**

Sl. No	Existing (or) Virgin Quarry	
	Wind Mills located at a distance of 150 m to 300 m	Wind Mills located beyond 300 m Up to 500 m
1.	Appointment of I/II Class Mines Manager Certificate of Competency under MMR 1961.	Appointment of I/II Class Mines Manager Certificate of Competency under MMR 1961.
2.	Special precautions are to be taken during blasting within danger zone such as posting guards, etc.	Blast design parameters should be mentioned in mining plan/scheme, and may be reviewed by a competent mining engineer.
3.	Blast design parameters should be mentioned in mining plan/scheme.	MCPD and total charge should be fixed such that it should not exceed 1.3 kg and 26.50 kg respectively.
4.	The recommendations of scientific organisation need to be incorporated in the mining plan/scheme before its approval.	Fresh scientific study may be conducted if mine management wants to increase the MCPD and total explosive charge above the quantity of 1.30 kg and 26.50 kg respectively. Continuous monitoring using seismograph should also be done in such cases by the mine management.
5.	Engagement of blasting in-charge having Diploma/Degree in mining engineering for day-to-day blasting.	Engagement of blasting in-charge having Diploma/Degree in mining engineering for day-to-day blasting.
6.	Training of the blasting crew on controlled blasting practices before engaged in operation.	Training of the blasting crew on controlled blasting practices before engaged in operation.
7.	Submission of monthly report on blast design pattern and detailed explosive consumption as well as volume of rock excavation to a statutory body viz. DGMS, DMG, PESO or SPCB.	Submission of monthly report on blast design pattern and detailed explosive consumption as well as volume of rock excavation to a statutory body viz. DGMS, DMG, SPCB. Report of recorded ground vibration need to be added in monthly report.

  
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8.	Report of recorded ground vibration need to be added in monthly report which shall be sent to all the statutory body viz. DGMS, DMG, SPCB.	Report of recorded ground vibration need to be added in monthly report which shall be sent to all the statutory body viz. DGMS, DMG, SPCB.
9.	Small diameter emulsion cartridge of 25 mm diameter (125 gm weight per cartridge) shall be used. However, ANFO explosives may also be used as main explosive charge.	Small diameter emulsion cartridge of 25 mm diameter (125 gm weight per cartridge) shall be used. However, ANFO explosives may also be used as main explosive charge.
10.	Electronic (or) Non-electric detonators (Nonel) shall be used in all the blasts for in-hole explosive initiation and surface hole-to-hole firing.	Non-electric detonators (Nonel) shall be used in all the blasts for in-hole explosive initiation and surface hole-to-hole firing.
11.	Max. number of holes in a round: 30.	Max. number of holes in a round: 40 to 60.

  
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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, ஆனைக்குன்றிமணி
3	<i>Albizia lebbek</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 tomentosa</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	புள்ளை
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, Manjallavu	கோங்கு, மஞ்சள் இலவு
17	<i>Cordia dichotoma</i>	Naruvuli	நருவுளி.
18	<i>Cretova adansonii</i>	Mavalingum	மாலைலங்கம்
19	<i>Dillenia indica</i>	Uva, Uzha	உசா
20	<i>Dillenia pentagyna</i>	SiruUva, Sitruzha	சீறு 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 tiliaceon</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 கொட்டை மரம்
30	<i>Limonia acidissima</i>	Vila maram	வில்ல மரம்
31	<i>Litsea glutinos</i>	Pisinpattai	சுரம்பா, பிசின்பட்டை
32	<i>Madhuca longifolia</i>	Illuppai	இலுப்பை
33	<i>Manilkara hexandra</i>	UlakkaiPaalai	உலக்கை பாலை
34	<i>Mimusops elengi</i>	Magizhamaram	மகிழ்மரம்
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 syvestre</i>	Eachai	சச்சமரம்
39	<i>Pongamia pinnat</i>	Pungam	புங்கம்

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40	<i>Prenna mollissima</i>	Mururai	முள்ளை
41	<i>Prenna serratifolia</i>	Narumunai	நறு முள்ளை
42	<i>Prenna tomentosa</i>	Malipoovarasu	மலை பூவாக
43	<i>Prosopis cinerea</i>	Vanni maram	வள்ளி மரம்
44	<i>Pterocarpus marsupium</i>	Vengai	வேங்கை
45	<i>Pterospermum canescens</i>	Vennangu, Tada	வெண்ணாங்கு
46	<i>Pterospermum xylocarpum</i>	Polavu	பூவடி
47	<i>Pathranjiva roxburghii</i>	Karipala	கரிபாலா
48	<i>Salvadora persica</i>	Ugaa Maram	ஊகா மரம்
49	<i>Sapindus emarginatus</i>	Manipungan, Soapukai	மணிபுங்குளை 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	தாண்டி
56	<i>Terminalia arjuna</i>	Ven marudhu	வெண் மருது
57	<i>Toona ciliata</i>	Sandhana vembu	சந்தன வேம்பு
58	<i>Thespesia populnea</i>	Puyarasu	பூவாக
59	<i>Walsuratrifoliata</i>	valsura	வாலசூரா
60	<i>Wrightia tinctoria</i>	Veppalai	வெப்பலை
61	<i>Pithecellobium dulce</i>	Kodukkapuli	கொடுக்காய்ப்பளி

Appendix –II

Display Board

(Size 6' x5' with Blue Background and White Letters)

சார்ப்பம்

அங்கங்களில் குவாரி செயல்பாடுகளுக்கான அனுமதி சீர்க்கடை நிபந்தனைகளுக்கு உட்பட்டு வழங்கப்பட்டுள்ளது. SEIAA - , தேதி: 2022.08.10. அனுமதி \_\_\_\_\_ தேதி வரை செயல்தக்கதாக உள்ளது.

பகலம் பகுதி வளர்ச்சி செயல்பாடுகளை அங்கத் திட்டம்	குவாரியின் எல்லைகள் அற்றி வேலி அமைக்க வேண்டும். அங்கப்பகுதியில் ஆழம் தளமாட்டி தீயிருந்து திட்டத்திற்கு சேலம் இடக்க வேண்டும். கைத்தில் மாசு ஏற்படாதவாறு அங்க பணிகளை மேற்கொள்ள வேண்டும்.
நடவடிக்கை செயல்பாடு பராமரிக்கப்பட வேண்டிய மரங்கள் வகைகளாக:	வாகைகள் செல்லும் பாதையில் மாசு ஏற்படாத அளவிற்கு தண்ணீர் முன்றுமாக தண்ணீர் வாரிகளின் மூலமாக அல்லப்போது தேயிலை வேண்டும். இளர்ச்சி அளவையும் தூசி மாசுபாட்டையும் குறைப்பதற்காக குவாரியின் எல்லைகள் அற்றி அடத்தியான பகலம் பகுதியை ஏற்படுத்த வேண்டும்.
அங்கத்தில் செயல்பாடுகளை உடனடியாக செயல்படுத்தப்பட வேண்டும்.	அங்கத்தில் இருந்து ஏற்படும் இளர்ச்சி அளவு 85 சி.சி.மீ. (85) அளவிற்கு மேல் ஏற்படாதவாறு தகத்த கட்டுப்பாடுகளை மேற்கொள்ள வேண்டும்.
அங்கம் உட்பட விதிகள் வகை சீர் அங்கத்தில் உடனடியாக செயல்படுத்த தகத்த பத்துகாய் கருவிகள் வழங்கப்படுகின்றன.	அங்கம் உட்பட விதிகள் வகை சீர் அங்கத்தில் உடனடியாக செயல்படுத்த தகத்த பத்துகாய் கருவிகள் வழங்கப்படுகின்றன.
சிறுமல் தளவாது பத்துகாய் கருவிகள் வகை சீர் செயல்படுத்த தகத்த பத்துகாய் கருவிகள் வழங்கப்படுகின்றன.	சிறுமல் தளவாது பத்துகாய் கருவிகள் வகை சீர் செயல்படுத்த தகத்த பத்துகாய் கருவிகள் வழங்கப்படுகின்றன.
அங்கப்பகுதியில் அங்கம் உடனடியாக செயல்படுத்த தகத்த பத்துகாய் கருவிகள் வழங்கப்படுகின்றன.	அங்கப்பகுதியில் அங்கம் உடனடியாக செயல்படுத்த தகத்த பத்துகாய் கருவிகள் வழங்கப்படுகின்றன.
அங்கப்பகுதியில் அங்கம் உடனடியாக செயல்படுத்த தகத்த பத்துகாய் கருவிகள் வழங்கப்படுகின்றன.	அங்கப்பகுதியில் அங்கம் உடனடியாக செயல்படுத்த தகத்த பத்துகாய் கருவிகள் வழங்கப்படுகின்றன.
அங்கம் நடவடிக்கைகளை முடித்தபின்னர் அங்கம் பகுதி மற்றும் அங்க நடவடிக்கைகளை இடையூறு ஏற்படக்கூடிய வேறு ஏற்பு பகுதியையும் மறுகட்டுமானம் செய்து தளவாதுகளை விவகார ஆலயத்தில் வளர்ச்சிக்கு ஏற்ற வகையில் பகலம் பகுதியை உருவாக்க வேண்டும்.	முடிந்தபின்னர் அங்கம் பகுதி (http://www.seiaa.org) மீண்டும் இணைப்பதற்கு பகலம் பகுதியை மீண்டும் ஏற்படுத்த தகத்த பத்துகாய் கருவிகள் வழங்கப்படுகின்றன. உடனடியாக அங்கம் உடனடியாக செயல்படுத்த தகத்த பத்துகாய் கருவிகள் வழங்கப்படுகின்றன.

  
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## STANDARD CONDITIONS

### 1. Part-A: Conditions to be Complied before commencing mining operations: -

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
  - I. The project has been accorded Environmental Clearance.
  - II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
  - III. Environmental Clearance may also be seen on the website of the SEIAA.
  - IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.
2. Mining activity should be reviewed by the District Collector after three years and decide for further extension.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.
9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7AM and 5 PM.

  
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12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 50mts. from any civil structure shall be kept from the periphery of any excavation area.
14. Depth of quarrying should be as per approved mining plan.
15. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
16. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
19. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
20. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF& CC, GoI on 16.11.2009.
21. The following measures are to be implemented to reduce Air Pollution during transportation of mineral
  - i. Roads shall be graded to mitigate the dust emission.
  - ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust
22. The following measures are to be implemented to reduce Noise Pollution
  - i. Proper and regular maintenance of vehicles and other equipment
  - ii. Limiting time exposure of workers to excessive noise.
  - iii. The workers employed shall be provided with protection equipment and earmuffs etc.
  - iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

  
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- v. All noise generating machinery the compressor, generator to be enclosed in acoustic enclosure so as to reduce noise in working area.
23. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoEF& CC, GoI to control noise to the prescribed levels.
24. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
25. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
26. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
27. The following measures are to be adopted to control erosion of dumps: -
- i. Retention/ toe walls shall be provided at the foot of the dumps.
  - ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.
28. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous& other wastes (Management, and Trans Boundary Movement) Rules, 2016 and its amendments thereof to the recyclers authorized by TNPCB.
29. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
30. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
31. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.

  
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32. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
33. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
34. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
35. It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 5 hectares within the mining lease period of this application.
36. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 300m radius from the periphery of the quarry site.
37. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
38. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
39. Bunds to be provided at the boundary of the project site.
40. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.
41. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
42. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
43. The Project Proponent shall provide solar lighting system to the nearby villages.
44. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.

  
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45. Safety equipments to be provided to all the employees.
46. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
47. The Assistant/Deputy Director, Department of Geology & mining shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
48. The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.
49. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.
50. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.
51. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
52. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
53. The Proponent shall ensure that the project activity including blasting, mining transportation etc should in no way have adverse impact to the other forests, such as reserve forests and social forests, tree plantation and bio diversity, surrounding water bodies etc.
54. The proponent shall provide Green Belt development at the rate of not less than 400 trees/Hectare. The tree saplings shall be not less than 3m height.
55. The fugitive emissions should be monitored during the mining activity and should be reported to TNPCB once in a month and the operation of the quarry should no way impact the agriculture activity & water bodies near the project site.
56. All the commitment made by the project proponent in the proposal shall be strictly followed.
57. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

**Part B: General Conditions:**

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.

  
MEMBER SECRETARY  
SEIAA, TN



2. The Proponent shall obtain the Consent from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.

  
**MEMBER SECRETARY**  
**SEIAA-TN**

13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.
16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the Environmental Clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this Environmental Clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the Environmental Clearance.
20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
21. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act, 2002 and Biological diversity Rules,

  
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SEIAA-TN

2004 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

22. Any other conditions stipulated by other Statutory/Government authorities shall be complied.
23. Any appeal against this Environmental Clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
24. The Environmental Clearance is issued based on the documents furnished by the project proponent. In case any documents found to be incorrect/not in order at a later date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.

  
MEMBER SECRETARY  
SEIAA-TN

**Copy to:**

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Industries Department, Tamil Nadu.
4. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
5. The Chairman, TNPC Board, 76, Mount Salai, Guindy, Chennai-32
6. The District Collector Tiruppur District.
7. The Commissioner of Geology and Mines, Guindy, Chennai-32
8. Assistant Director, Department of Geology & Mining, Tiruppur District.
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. File Copy

**Signature Not Verified**

Digitally signed by: Thiru. Deepak S. Bilgi  
Designation: Member Secretary  
Date and Time: 12/27/2023 3:35:58 PM

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/001	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/001
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ1 Core zone - Project Area 10°52'27.45"N 77°31'3.77"E</b>		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2024	7:00-7:00	45.2	21.2	5.6	20.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2024	7:15-7:15	42.1	20.6	5.9	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.03.2024	7:00-7:00	42.3	22.4	6.0	22.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.03.2024	7:15-7:15	41.7	21.2	6.2	21.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.03.2024	7:00-7:00	42.3	20.7	6.4	18.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
14.03.2024	7:15-7:15	41.9	21.8	6.9	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.03.2024	7:00-7:00	42.5	22.4	7.0	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
21.03.2024	7:15-7:15	43.2	21.6	7.6	21.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.03.2024	7:00-7:00	43.7	22.7	5.9	20.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
28.03.2024	7:15-7:15	42.6	21.4	5.4	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.04.2024	7:00-7:00	43.0	23.1	6.3	18.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2024	7:15-7:15	43.9	21.3	6.4	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.04.2024	7:00-7:00	42.6	22.5	7.0	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.04.2024	7:15-7:15	41.9	22.4	7.3	18.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.04.2024	7:00-7:00	40.9	21.6	6.9	20.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2024	7:15-7:15	41.7	20.7	6.7	19.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.04.2024	7:00-7:00	42.9	22.6	5.9	18.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.04.2024	7:15-7:15	41.7	20.8	5.3	19.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
01.05.2024	7:00-7:00	43.5	21.9	6.3	20.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.05.2024	7:15-7:15	44.0	20.2	6.9	21.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.05.2024	7:00-7:00	41.7	22.6	5.7	22.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.05.2024	7:15-7:15	42.9	20.5	5.1	18.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.05.2024	7:00-7:00	42.6	21.3	6.9	20.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2024	7:15-7:15	41.3	20.1	6.3	21.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.05.2024	7:00-7:00	40.7	22.8	7.0	20.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25-05-2024	7:15-7:15	41.3	21.2	7.5	22.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<100	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit ;DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*

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Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

## TEST REPORT

<b>Report No</b>	EHS360/TR/2022-23/001	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/001
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ1 Core zone - Project Area 10°52'27.45"N 77°31'3.77"E</b>		

Date	Period. hrs	SPM (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	C6H6 (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )
01.03.2024	7:00-7:00	63.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2024	7:15-7:15	64.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.03.2024	7:00-7:00	65.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.03.2024	7:15-7:15	62.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.03.2024	7:00-7:00	61.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
14.03.2024	7:15-7:15	62.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.03.2024	7:00-7:00	60.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
21.03.2024	7:15-7:15	62.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.03.2024	7:00-7:00	65.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
28.03.2024	7:15-7:15	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.04.2024	7:00-7:00	66.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2024	7:15-7:15	65.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.04.2024	7:00-7:00	63.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.04.2024	7:15-7:15	64.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.04.2024	7:00-7:00	65.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2024	7:15-7:15	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.04.2024	7:00-7:00	62.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.04.2024	7:15-7:15	61.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
01.05.2024	7:00-7:00	63.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.05.2024	7:15-7:15	64.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.05.2024	7:00-7:00	62.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.05.2024	7:15-7:15	61.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.05.2024	7:00-7:00	65.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2024	7:15-7:15	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.05.2024	7:00-7:00	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25-05-2024	7:15-7:15	60.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	<200	<100	<60	<80	<80

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

A-17  
Name: Santhosh Kumar A  
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/002	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangayam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/002
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ 2 – Core Zone - Project Area - 10°52'30.70"N 77°31'10.53"E</b>		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2024	7:00-7:00	42.2	22.7	6.3	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2024	7:15-7:15	41.7	21.6	7.0	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.03.2024	7:00-7:00	43.1	23.5	6.2	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.03.2024	7:15-7:15	41.8	21.6	7.3	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.03.2024	7:00-7:00	42.7	22.7	6.4	19.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
14.03.2024	7:15-7:15	43.2	21.5	7.3	22.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.03.2024	7:00-7:00	41.6	22.6	6.9	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
21.03.2024	7:15-7:15	43.8	23.0	7.8	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.03.2024	7:00-7:00	42.7	22.7	6.5	20.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
28.03.2024	7:15-7:15	43.2	23.6	5.9	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.04.2024	7:00-7:00	42.9	22.7	5.3	20.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2024	7:15-7:15	41.7	21.2	6.1	21.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.04.2024	7:00-7:00	42.6	23.8	5.3	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.04.2024	7:15-7:15	43.7	22.6	6.7	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.04.2024	7:00-7:00	44.2	21.7	6.0	19.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2024	7:15-7:15	43.5	22.9	5.2	20.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.04.2024	7:00-7:00	45.2	21.0	6.7	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.04.2024	7:15-7:15	41.7	22.4	5.4	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
01.05.2024	7:00-7:00	44.8	23.6	7.1	20.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.05.2024	7:15-7:15	43.6	21.0	6.4	20.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.05.2024	7:00-7:00	41.6	22.4	7.9	19.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.05.2024	7:15-7:15	40.3	23.6	6.8	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.05.2024	7:00-7:00	42.7	22.7	6.7	20.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2024	7:15-7:15	41.9	21.5	7.5	20.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.05.2024	7:00-7:00	43.1	21.5	6.3	19.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25-05-2024	7:15-7:15	42.8	20.8	7.2	22.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<100	<60	<80	<80	<100	<400

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

## TEST REPORT

<b>Report No</b>	EHS360/TR/2022-23/002	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/002
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	AAQ 2 – Core Zone - Project Area - 10°52'30.70"N 77°31'10.53"E		

Date	Period. hrs	SPM (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	C6H6 (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )
01.03.2024	7:00-7:00	61.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2024	7:15-7:15	62.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.03.2024	7:00-7:00	63.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.03.2024	7:15-7:15	64.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.03.2024	7:00-7:00	58.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
14.03.2024	7:15-7:15	60.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.03.2024	7:00-7:00	61.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
21.03.2024	7:15-7:15	63.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.03.2024	7:00-7:00	62.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
28.03.2024	7:15-7:15	63.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.04.2024	7:00-7:00	61.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2024	7:15-7:15	62.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.04.2024	7:00-7:00	60.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.04.2024	7:15-7:15	61.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.04.2024	7:00-7:00	63.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2024	7:15-7:15	64.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.04.2024	7:00-7:00	63.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.04.2024	7:15-7:15	64.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
01.05.2024	7:00-7:00	65.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.05.2024	7:15-7:15	64.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.05.2024	7:00-7:00	62.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.05.2024	7:15-7:15	63.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.05.2024	7:00-7:00	61.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2024	7:15-7:15	60.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.05.2024	7:00-7:00	62.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25-05-2024	7:15-7:15	63.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	<200	<100	<60	<80	<80

**Note:** BDL: Below Detection Limit ;DL: Detection Limit  
**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by

Authorised Signatory

Name: Santhosh Kumar A  
 Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report.  
 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client.  
 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/003	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/003
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ3 – Mudhalipalayam - 10°53'3.31"N 77°32'59.19"E</b>		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2024	7:00-7:00	41.7	20.3	6.3	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2024	7:15-7:15	42.8	21.7	5.8	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.03.2024	7:00-7:00	40.9	22.9	6.1	20.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.03.2024	7:15-7:15	41.5	22.7	5.7	21.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.03.2024	7:00-7:00	43.7	21.4	6.4	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
14.03.2024	7:15-7:15	44.9	20.6	5.9	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.03.2024	7:00-7:00	43.5	21.0	7.0	22.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
21.03.2024	7:15-7:15	42.7	22.4	6.9	18.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.03.2024	7:00-7:00	44.1	21.7	7.5	19.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
28.03.2024	7:15-7:15	44.8	22.6	6.8	21.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.04.2024	7:00-7:00	43.0	20.7	7.3	20.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2024	7:15-7:15	42.6	21.4	6.6	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.04.2024	7:00-7:00	41.5	22.9	5.6	22.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.04.2024	7:15-7:15	42.8	21.5	6.1	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.04.2024	7:00-7:00	44.9	22.1	5.8	23.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2024	7:15-7:15	43.6	21.3	6.3	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.04.2024	7:00-7:00	41.7	23.8	5.4	20.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.04.2024	7:15-7:15	42.2	22.4	6.8	22.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
01.05.2024	7:00-7:00	42.6	22.6	7.0	23.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.05.2024	7:15-7:15	43.8	23.0	6.9	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.05.2024	7:00-7:00	42.3	20.7	7.8	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.05.2024	7:15-7:15	43.2	21.3	6.6	22.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.05.2024	7:00-7:00	43.9	23.5	5.9	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2024	7:15-7:15	44.6	22.6	6.7	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.05.2024	7:00-7:00	42.5	22.9	5.6	20.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25-05-2024	7:15-7:15	43.8	21.4	6.4	19.0	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<100	<60	<80	<80	<100	<400

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/003	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/003
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ3 – Mudhalipalayam - 10°53'3.31"N 77°32'59.19"E</b>		

Date	Period. hrs	SPM (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	C6H6 (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )
01.03.2024	7:00-7:00	65.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2024	7:15-7:15	64.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.03.2024	7:00-7:00	62.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.03.2024	7:15-7:15	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.03.2024	7:00-7:00	65.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
14.03.2024	7:15-7:15	66.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.03.2024	7:00-7:00	65.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
21.03.2024	7:15-7:15	66.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.03.2024	7:00-7:00	63.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
28.03.2024	7:15-7:15	61.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.04.2024	7:00-7:00	62.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2024	7:15-7:15	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.04.2024	7:00-7:00	61.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.04.2024	7:15-7:15	63.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.04.2024	7:00-7:00	60.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2024	7:15-7:15	61.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.04.2024	7:00-7:00	62.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.04.2024	7:15-7:15	63.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
01.05.2024	7:00-7:00	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.05.2024	7:15-7:15	65.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.05.2024	7:00-7:00	63.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.05.2024	7:15-7:15	62.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.05.2024	7:00-7:00	63.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2024	7:15-7:15	62.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.05.2024	7:00-7:00	60.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25-05-2024	7:15-7:15	61.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	<200	<100	<60	<80	<80

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by

*[Signature]*

Authorised Signatory

*[Signature]*  
Name: Santhosh Kumar A  
Designation : Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/004	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/004
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ4 – Idayankinaru -.10°50'36.55"N 77°28'22.17"E</b>		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2024	7:00-7:00	43.8	21.5	6.3	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2024	7:15-7:15	42.6	22.2	6.5	19.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.03.2024	7:00-7:00	44.9	21.7	5.2	18.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.03.2024	7:15-7:15	43.7	21.6	5.8	20.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.03.2024	7:00-7:00	44.5	21.8	7.1	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
14.03.2024	7:15-7:15	42.6	21.2	7.6	19.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.03.2024	7:00-7:00	44.8	22.3	6.7	18.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
21.03.2024	7:15-7:15	45.2	22.4	6.3	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.03.2024	7:00-7:00	43.7	21.7	8.2	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
28.03.2024	7:15-7:15	44.3	21.3	7.9	19.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.04.2024	7:00-7:00	42.9	22.6	6.3	18.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2024	7:15-7:15	44.5	21.4	7.2	19.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.04.2024	7:00-7:00	42.6	21.8	7.4	20.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.04.2024	7:15-7:15	43.7	21.6	7.6	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.04.2024	7:00-7:00	44.4	22.2	6.8	18.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2024	7:15-7:15	45.2	21.4	6.7	19.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.04.2024	7:00-7:00	43.1	22.6	6.1	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.04.2024	7:15-7:15	44.6	21.8	7.5	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
01.05.2024	7:00-7:00	44.5	21.2	6.8	18.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.05.2024	7:15-7:15	45.3	22.4	5.5	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.05.2024	7:00-7:00	42.4	21.7	5.1	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.05.2024	7:15-7:15	43.5	21.4	5.8	21.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.05.2024	7:00-7:00	44.8	21.6	4.6	20.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2024	7:15-7:15	43.6	21.2	4.9	21.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.05.2024	7:00-7:00	42.9	22.3	5.0	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25-05-2024	7:15-7:15	44.5	21.8	4.3	19.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<100	<60	<80	<80	<100	<400

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/004	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/004
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ4 – Idayankinaru - 10°50'36.55"N 77°28'22.17"E</b>		

Date	Period. hrs	SPM ( $\mu\text{g}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	C6H6 ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )
01.03.2024	7:00-7:00	62.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2024	7:15-7:15	61.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.03.2024	7:00-7:00	63.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.03.2024	7:15-7:15	62.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.03.2024	7:00-7:00	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
14.03.2024	7:15-7:15	62.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.03.2024	7:00-7:00	63.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
21.03.2024	7:15-7:15	62.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.03.2024	7:00-7:00	64.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
28.03.2024	7:15-7:15	63.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.04.2024	7:00-7:00	64.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2024	7:15-7:15	63.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.04.2024	7:00-7:00	62.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.04.2024	7:15-7:15	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.04.2024	7:00-7:00	65.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2024	7:15-7:15	62.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.04.2024	7:00-7:00	64.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.04.2024	7:15-7:15	63.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
01.05.2024	7:00-7:00	64.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.05.2024	7:15-7:15	65.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.05.2024	7:00-7:00	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.05.2024	7:15-7:15	62.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.05.2024	7:00-7:00	63.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2024	7:15-7:15	62.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.05.2024	7:00-7:00	61.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25-05-2024	7:15-7:15	63.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
<b>NAAQ* Standard</b>		<200	<200	<100	<60	<80	<80

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by

*[Signature]*

Authorised Signatory

*[Signature]*  
Name: Santhosh Kumar A  
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/005	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/005
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ5 – Vengipalayam - 10°53'7.61"N 77°27'57.51"E</b>		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2024	7:00-7:00	44.7	21.6	5.6	20.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2024	7:15-7:15	43.7	21.5	5.1	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.03.2024	7:00-7:00	42.8	22.07	6.6	22.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.03.2024	7:15-7:15	41.6	21.9	7.2	21.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.03.2024	7:00-7:00	43.1	22.4	7.8	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
14.03.2024	7:15-7:15	42.8	21.2	7.0	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.03.2024	7:00-7:00	45.9	21.6	6.6	20.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
21.03.2024	7:15-7:15	44.5	21.8	6.7	21.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.03.2024	7:00-7:00	44.7	21.1	6.0	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
28.03.2024	7:15-7:15	43.2	22.2	7.2	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.04.2024	7:00-7:00	42.8	21.7	7.4	22.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2024	7:15-7:15	41.5	21.3	6.9	20.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.04.2024	7:00-7:00	43.7	21.8	6.3	22.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.04.2024	7:15-7:15	44.8	21.9	6.5	21.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.04.2024	7:00-7:00	46.5	22.2	7.1	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2024	7:15-7:15	45.8	21.3	8.0	23.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.04.2024	7:00-7:00	42.9	21.5	6.9	20.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.04.2024	7:15-7:15	41.5	21.2	7.7	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
01.05.2024	7:00-7:00	40.8	22.4	7.3	22.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.05.2024	7:15-7:15	41.5	21.6	7.7	24.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.05.2024	7:00-7:00	44.0	21.3	6.5	21.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.05.2024	7:15-7:15	43.9	21.7	6.8	22.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.05.2024	7:00-7:00	44.2	21.9	7.0	24.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2024	7:15-7:15	43.9	21.3	6.9	20.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.05.2024	7:00-7:00	44.1	21.7	6.4	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25-05-2024	7:15-7:15	45.0	21.5	5.3	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<100	<60	<805	<80	<100	<400

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/005	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/005
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ5 – Vengipalayam - 10°53'7.61"N 77°27'57.51"E</b>		

Date	Period. hrs	SPM (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	C6H6 (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )
01.03.2024	7:00-7:00	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2024	7:15-7:15	65.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.03.2024	7:00-7:00	63.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.03.2024	7:15-7:15	62.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.03.2024	7:00-7:00	64.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
14.03.2024	7:15-7:15	63.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.03.2024	7:00-7:00	61.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
21.03.2024	7:15-7:15	62.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.03.2024	7:00-7:00	60.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
28.03.2024	7:15-7:15	62.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.04.2024	7:00-7:00	63.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2024	7:15-7:15	62.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.04.2024	7:00-7:00	64.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.04.2024	7:15-7:15	65.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.04.2024	7:00-7:00	63.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2024	7:15-7:15	62.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.04.2024	7:00-7:00	63.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.04.2024	7:15-7:15	62.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
01.05.2024	7:00-7:00	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.05.2024	7:15-7:15	62.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.05.2024	7:00-7:00	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.05.2024	7:15-7:15	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.05.2024	7:00-7:00	62.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2024	7:15-7:15	64.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.05.2024	7:00-7:00	65.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25-05-2024	7:15-7:15	63.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
<b>NAAQ* Standard</b>		<200	<200	<100	<60	<80	<80

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by

*[Signature]*

Authorised Signatory

*[Signature]*

Name: Santhosh Kumar A  
Designation : Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/006	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/006
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ 6 – Sengondampalayam 10°55'2.45"N 77°31'0.43"E</b>		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2024	7:00-7:00	43.2	19.5	6.2	20.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2024	7:15-7:15	42.1	19.8	7.1	22.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.03.2024	7:00-7:00	44.8	19.4	5.1	21.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.03.2024	7:15-7:15	45.0	19.0	7.5	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.03.2024	7:00-7:00	42.8	19.5	5.9	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
14.03.2024	7:15-7:15	44.6	21.9	5.4	20.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.03.2024	7:00-7:00	45.1	21.6	6.7	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
21.03.2024	7:15-7:15	43.2	21.7	7.9	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.03.2024	7:00-7:00	42.8	18.0	6.1	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
28.03.2024	7:15-7:15	44.6	21.1	6.4	21.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.04.2024	7:00-7:00	43.2	18.8	7.4	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2024	7:15-7:15	42.7	18.0	6.8	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.04.2024	7:00-7:00	42.5	19.6	7.2	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.04.2024	7:15-7:15	43.6	21.1	6.4	20.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.04.2024	7:00-7:00	44.7	20.1	7.6	20.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2024	7:15-7:15	42.5	21.8	7.4	21.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.04.2024	7:00-7:00	43.3	21.6	6.5	22.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.04.2024	7:15-7:15	44.9	19.5	5.2	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
01.05.2024	7:00-7:00	42.5	21.7	5.6	23.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.05.2024	7:15-7:15	43.1	20.6	5.1	20.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.05.2024	7:00-7:00	44.5	19.5	5.5	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.05.2024	7:15-7:15	42.6	21.4	7.9	22.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.05.2024	7:00-7:00	43.8	19.6	6.1	22.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2024	7:15-7:15	42.7	21.7	5.6	20.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.05.2024	7:00-7:00	44.2	19.5	5.4	21.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25-05-2024	7:15-7:15	43.7	18.1	6.9	21.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<100	<60	<80	<80	<100	<400

**Note:** BDL: Below Detection Limit ; DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

A 17

Name: Santhosh Kumar A  
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/006	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part), 986/B1(Part), Mudalipalayam village, Kangayam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/006
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	<b>AAQ 6 – Sengondampalayam 10°55'2.45"N 77°31'0.43"E</b>		

Date	Period. hrs	SPM ( $\mu\text{g}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	C6H6 ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )
01.03.2024	7:00-7:00	66.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2024	7:15-7:15	65.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.03.2024	7:00-7:00	62.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.03.2024	7:15-7:15	63.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.03.2024	7:00-7:00	62.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
14.03.2024	7:15-7:15	63.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.03.2024	7:00-7:00	63.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
21.03.2024	7:15-7:15	64.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.03.2024	7:00-7:00	63.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
28.03.2024	7:15-7:15	64.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.04.2024	7:00-7:00	66.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2024	7:15-7:15	65.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.04.2024	7:00-7:00	64.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.04.2024	7:15-7:15	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.04.2024	7:00-7:00	65.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2024	7:15-7:15	66.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.04.2024	7:00-7:00	64.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.04.2024	7:15-7:15	63.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
01.05.2024	7:00-7:00	65.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.05.2024	7:15-7:15	66.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.05.2024	7:00-7:00	65.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.05.2024	7:15-7:15	64.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.05.2024	7:00-7:00	66.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2024	7:15-7:15	67.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.05.2024	7:00-7:00	68.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25-05-2024	7:15-7:15	67.9	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	<200	<100	<60	<80	<80

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

## TEST REPORT

<b>Report No</b>	EHS360/TR/2022-23/007	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk,Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/007
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	AAQ 7 Sirukinar- 10°50'15.29"N 77°32'56.17"E		

Date	Period. hrs	PM10(µg/m3)	PM2.5(µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.03.2024	7:00-7:00	44.5	21.0	6.6	19.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.03.2024	7:15-7:15	45.6	22.3	6.1	18.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
06.03.2024	7:00-7:00	43.8	21.8	7.1	20.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.03.2024	7:15-7:15	42.8	22.9	6.4	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
13.03.2024	7:00-7:00	43.1	23.4	7.9	19.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
14.03.2024	7:15-7:15	42.9	22.5	6.1	18.5	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
20.03.2024	7:00-7:00	41.5	21.7	7.6	20.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
21.03.2024	7:15-7:15	42.6	22.9	6.6	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
27.03.2024	7:00-7:00	43.8	20.8	6.3	22.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
28.03.2024	7:15-7:15	44.7	21.6	6.5	23.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
04.04.2024	7:00-7:00	45.9	23.4	7.7	20.2	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
05.04.2024	7:15-7:15	46.8	22.5	6.2	19.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
10.04.2024	7:00-7:00	45.1	21.8	6.8	21.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
11.04.2024	7:15-7:15	45.0	22.7	7.5	22.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
18.04.2024	7:00-7:00	46.1	23.4	6.6	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
19.04.2024	7:15-7:15	44.7	22.6	7.4	21.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
24.04.2024	7:00-7:00	43.0	21.7	6.9	20.1	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25.04.2024	7:15-7:15	45.1	21.8	7.4	19.8	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
01.05.2024	7:00-7:00	46.2	22.0	6.2	20.9	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
02.05.2024	7:15-7:15	43.9	22.9	5.7	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
07.05.2024	7:00-7:00	43.2	23.4	7.6	22.3	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
08.05.2024	7:15-7:15	42.8	21.6	6.7	21.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
16.05.2024	7:00-7:00	41.0	20.8	7.4	20.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
17.05.2024	7:15-7:15	42.3	23.4	6.6	19.4	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
23.05.2024	7:00-7:00	42.8	22.4	7.5	20.7	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
25-05-2024	7:15-7:15	43.5	26.7	5.6	21.6	BDL(DL:5.0)	BDL(DL:1.0)	BDL(DL:1.14)
NAAQ* Standard		<100	<100	<60	<80	<80	<400	<4

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.



## TEST REPORT

<b>Report No</b>	EHS360/TR/2022-23/007	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 5182	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Air	<b>Sample Code</b>	EHS360/007
<b>Sample Description</b>	Ambient Air Quality Monitoring	<b>Sample Condition</b>	Good
<b>Sampling Location</b>	AAQ 7 Sirukinar- 10°50'15.29"N 77°32'56.17"E		

Date	Period. hrs	SPM (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	C6H6 (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )
01.03.2024	7:00-7:00	63.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.03.2024	7:15-7:15	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
06.03.2024	7:00-7:00	62.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.03.2024	7:15-7:15	63.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
13.03.2024	7:00-7:00	64.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
14.03.2024	7:15-7:15	65.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
20.03.2024	7:00-7:00	66.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
21.03.2024	7:15-7:15	67.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
27.03.2024	7:00-7:00	66.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
28.03.2024	7:15-7:15	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
04.04.2024	7:00-7:00	65.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
05.04.2024	7:15-7:15	61.0	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
10.04.2024	7:00-7:00	62.3	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
11.04.2024	7:15-7:15	65.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
18.04.2024	7:00-7:00	61.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
19.04.2024	7:15-7:15	63.2	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
24.04.2024	7:00-7:00	62.1	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25.04.2024	7:15-7:15	64.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
01.05.2024	7:00-7:00	63.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
02.05.2024	7:15-7:15	63.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
07.05.2024	7:00-7:00	62.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
08.05.2024	7:15-7:15	61.4	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
16.05.2024	7:00-7:00	62.5	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
17.05.2024	7:15-7:15	63.8	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
23.05.2024	7:00-7:00	64.7	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
25-05-2024	7:15-7:15	65.6	BDL (DL:0.1)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:0.1)	BDL (DL:0.1)
NAAQ* Standard		<200	<200	<100	<60	<80	<80

**Note:** BDL: Below Detection Limit ;DL: Detection Limit

**Remarks:** The values observed for the pollutants given above are within the CPCB standards.

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

A-17  
Name: Santhosh Kumar A  
Designation: Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 008	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangayam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 9989	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Noise Level Monitoring	<b>Sample Code</b>	EHS360/ 008
<b>Sample Description</b>	Ambient Noise	<b>Sample Collected Date</b>	25-05-2024

Location	N1 – Core Zone - 10°52'27.13"N 77°31'3.67"E			N2 –Core zone - 10°52'30.58"N 77°31'11.85"E		
	Min	Max	Result	Min	Max	Result
Parameter	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	40.5	43.2	42.1	41.5	42.3	41.5
07:00-08:00	42.1	45.3	44.0	40.3	44.1	40.3
08:00-09:00	41.3	44.1	42.9	43.1	46.3	43.1
09:00-10:00	43.5	45.6	44.7	40.2	45.2	40.2
10:00-11:00	40.2	43.2	42.0	43.1	45.3	43.1
11:00-12:00	43.5	45.1	44.4	44.1	47.2	44.1
12:00-13:00	41.3	43.6	42.6	41.2	44.2	41.2
13:00-14:00	40	44.3	42.7	42.2	45.1	42.2
14:00-15:00	41.2	43.2	42.3	41.1	43.2	41.1
15:00-16:00	43.1	45.2	44.3	40.3	44.1	40.3
16:00-17:00	42.5	43.6	43.1	41.2	43.2	41.2
17:00-18:00	40.2	42.2	41.3	42.3	44.3	42.3
18:00-19:00	41.3	45.6	44.0	40.3	42.5	40.3
19:00-20:00	42.3	44.5	43.5	41.2	43.2	41.2
20:00-21:00	39.1	42.1	40.9	37.1	39.8	37.1
21:00-22:00	38.2	40.3	39.4	36.4	38.7	36.4
22:00-23:00	34.5	37.5	36.3	36.4	39.8	36.4
23:00-00:00	35.2	38.4	37.1	35.1	37.2	35.1
00:00-01:00	34.5	36.2	35.4	34.2	36.1	34.2
01:00-02:00	33.2	36.4	35.1	37.2	39.2	37.2
02:00-03:00	31.2	35.2	33.6	34.2	38.6	34.2
03:00-04:00	32	37.5	35.6	36.5	38.7	36.5
04:00-05:00	34.5	36.2	35.4	34.2	36.4	34.2
05:00-06:00	33.4	35.2	34.4	35.6	38.4	35.6
Result	Day Means		<b>42.4</b>	Day Means		<b>42.3</b>
	Night Means		<b>35.2</b>	Night Means		<b>36.7</b>

**Note:** CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)  
The Noise level in the above location exists within the permissible limits of CPCB.

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 009	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 9989	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Noise Level Monitoring	<b>Sample Code</b>	EHS360/ 009
<b>Sample Description</b>	Ambient Noise	<b>Sample Collected Date</b>	25-05-2024

Location	N3-Mudhallpalayam-10°53'3.13"N77°32'59.03"E			N4 – Idayankinaru - 10°50'36.66"N 28°21'68"E		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	38.6	41.3	40.2	39.2	40.2	39.7
07:00-08:00	37.2	40.2	39.0	38.1	42.3	40.7
08:00-09:00	36.4	41.2	39.4	36.2	39.1	37.9
09:00-10:00	35.5	41.3	39.3	37.1	38.2	37.7
10:00-11:00	34.2	38.6	36.9	34.2	37.3	36.0
11:00-12:00	33.2	38.2	36.4	32.2	36.2	34.6
12:00-13:00	37.5	40.2	39.1	33.2	35.4	34.4
13:00-14:00	36.5	42.3	40.3	31.1	33.2	32.3
14:00-15:00	37.5	44.2	42.0	39.6	42.3	41.2
15:00-16:00	36.5	43.2	41.0	42.3	44.2	43.4
16:00-17:00	35.5	45.2	42.6	44.1	46.2	45.3
17:00-18:00	34.2	42.6	40.2	42.1	47.1	45.3
18:00-19:00	38.6	42.1	40.7	43.2	44.3	43.8
19:00-20:00	38.1	44.3	42.2	40.2	42.3	41.4
20:00-21:00	39.1	41.2	40.3	37.4	40.1	39.0
21:00-22:00	38.2	43.2	41.4	35.6	38.2	37.1
22:00-23:00	37.4	39.2	38.4	34.1	36.2	35.3
23:00-00:00	35.6	37.5	36.7	34.6	36.7	35.8
00:00-01:00	34.2	36.5	35.5	33.5	35.4	34.6
01:00-02:00	33.2	35.4	34.4	32.1	35.6	34.2
02:00-03:00	32.6	35.6	34.4	31.2	36.7	34.8
03:00-04:00	31.2	34.5	33.2	33.5	38.9	37.0
04:00-05:00	34.5	36.2	35.4	33.4	38.9	37.0
05:00-06:00	35.2	38.6	37.2	34.2	37.5	36.2
Result	Day Means		<b>40.0</b>	Day Means		<b>39.1</b>
	Night Means		<b>35.3</b>	Night Means		<b>35.6</b>

Note: CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)  
The Noise level in the above location exists within the permissible limits of CPCB.

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by

Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 010	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 9989	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Noise Level Monitoring	<b>Sample Code</b>	EHS360/ 010
<b>Sample Description</b>	Ambient Noise	<b>Sample Collected Date</b>	25-05-2024

Location	N5-Vengipalayam 10°53'7.36"N 77°27'57.62"E			N6 – Sengondampalayam -10°55'2.00"N 77°31'0.31"E		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	36.6	38.2	37.5	38.5	40.2	39.4
07:00-08:00	38.2	35.6	37.1	37.2	42.3	40.5
08:00-09:00	37.2	38.2	37.7	35.6	42.1	40.0
09:00-10:00	34.1	39.4	37.5	33.2	37.2	35.6
10:00-11:00	33.6	36.5	35.3	35.2	38.2	37.0
11:00-12:00	34.2	35.2	34.7	31.2	34.5	33.2
12:00-13:00	35.6	36.4	36.0	35.6	36.6	36.1
13:00-14:00	38.2	39.1	38.7	37.4	39.6	38.6
14:00-15:00	37.2	39.9	38.8	36.5	39.6	38.3
15:00-16:00	36.1	38.2	37.3	35.5	42.3	40.1
16:00-17:00	35.6	39.2	37.8	39.6	43.5	42.0
17:00-18:00	34.5	39.2	37.5	38.6	40.2	39.5
18:00-19:00	38.6	39.7	39.2	37.2	35.1	36.3
19:00-20:00	36.5	38.5	37.6	34.2	36.2	35.3
20:00-21:00	32.2	44.2	41.5	31.2	34.5	33.2
21:00-22:00	33.6	45.3	42.6	32.1	36.2	34.6
22:00-23:00	34.2	36.2	35.3	32.2	36.8	35.1
23:00-00:00	35.2	37.2	36.3	30.1	35.2	33.4
00:00-01:00	32.1	33.6	32.9	32.1	33.4	32.8
01:00-02:00	32.3	33.4	32.9	33.4	35.4	34.5
02:00-03:00	37.6	39.2	38.5	32.5	36.6	35.0
03:00-04:00	37.2	39.5	38.5	33.2	39.1	37.1
04:00-05:00	36.6	39.7	38.4	34.5	38.6	37.0
05:00-06:00	37.2	39.2	38.3	33.6	39.5	37.5
Result	Day Means		<b>37.8</b>	Day Means		<b>37.3</b>
	Night Means		<b>36.5</b>	Night Means		<b>35.3</b>

Note: CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)  
The Noise level in the above location exists within the permissible limits of CPCB.

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by

*[Signature]*

Authorised Signatory

*[Signature]*  
Name: Santhosh Kumar A  
Designation : Quality Manager

- Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 011	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	IS 9989	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Noise Level Monitoring	<b>Sample Code</b>	EHS360/ 011
<b>Sample Description</b>	Ambient Noise	<b>Sample Collected Date</b>	25-05-2024

Location	N7 - Sirukinar - 10°50'15.36"N 77°32'55.86"E		
Parameter	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)
06:00-07:00	dB(A)	dB(A)	dB(A)
07:00-08:00	39.2	40.2	39.7
08:00-09:00	37.4	38.3	37.9
09:00-10:00	36.6	39.2	38.1
10:00-11:00	38.2	40.6	39.6
11:00-12:00	39.5	42.1	41.0
12:00-13:00	37.6	41.3	39.8
13:00-14:00	38.5	43.1	41.4
14:00-15:00	36.9	40.3	38.9
15:00-16:00	35.5	42.3	40.1
16:00-17:00	37.4	41.2	39.7
17:00-18:00	35.6	40.3	38.6
18:00-19:00	34.2	42.1	39.7
19:00-20:00	33.6	36.5	35.3
20:00-21:00	35.6	37.4	36.6
21:00-22:00	34.1	36.2	35.3
22:00-23:00	33.2	35.1	34.3
23:00-00:00	31.5	33.2	32.4
00:00-01:00	33.2	35.4	34.4
01:00-02:00	33.2	36.2	35.0
02:00-03:00	31.4	35.2	33.7
03:00-04:00	30.2	32.6	31.6
04:00-05:00	32.6	34.2	33.5
05:00-06:00	33.1	35.6	34.5
Result	Day Means		<b>38.1</b>
	Night Means		<b>34.2</b>

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 012	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 012
<b>Sample Description</b>	Soil 1	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	Core Zone		

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	6.8
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	402 µmhos/cm
03	Water Holding Capacity	By Gravimetric Method	46.8 %
04	Bulk Density	By Cylindrical Method	1.08 g/cm <sup>3</sup>
05	Porosity	By Gravimetric Method	45.5 %
06	Calcium as Ca	Food and Agriculture organization of the united Nation Rome 2007 : 2018	102.5 mg/kg
07	Magnesium as Mg		38 mg/kg
08	Chloride as Cl	APHA 23 <sup>rd</sup> Edn 2019 4500 Cl B	82.7 mg/kg
09	Soluble Sulphate as SO <sub>4</sub>	IS 2720 Part 27 : 1977 (Reaff:2015)	0.016 %
10	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	2.15 mg/kg
11	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	405 mg/kg
12	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.46 %
13	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	0.85 %

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by




Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 012	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 012
<b>Sample Description</b>	Soil 1	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	Core Zone		

S. No	Test Parameters	Protocols	Results
14	<b>Texture :</b>		
	Clay	Gravimetric Method	35.6 %
	Sand		27.6 %
	Silt		36.8 %
15	Manganese as Mn	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	18.9 mg/kg
16	Zinc as Zn		1.02 mg/kg
17	Boron as B		1.2 mg/kg
18	Potassium as K		31.4 mg/kg
19	Cadmium as Cd		BDL (DL : 1.0 mg/kg)
20	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
21	Copper as Cu		BDL (DL : 1.0 mg/kg)
22	Lead as Pb		1.05 mg/kg
23	Iron as Fe		3.47 mg/kg
24	Cation Exchange Capacity		USEPA 9080 – 1986

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 013	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 013
<b>Sample Description</b>	Soil 2	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Soil – 2 - Core Zone</b>		

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	7.05
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	310 µmhos/cm
03	Water Holding Capacity	By Gravimetric Method	40.9 %
04	Bulk Density	By Cylindrical Method	0.87 g/cm <sup>3</sup>
05	Porosity	By Gravimetric Method	36.7 %
06	Calcium as Ca	Food and Agriculture organization of the united Nation Rome 2007 : 2018	121.4 mg/kg
07	Magnesium as Mg		51.9 mg/kg
08	Chloride as Cl	APHA 23 <sup>rd</sup> Edn 2019 4500 Cl B	68 mg/kg
09	Soluble Sulphate as SO <sub>4</sub>	IS 2720 Part 27 : 1977 (Reaff:2015)	0.0011 %
10	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	1.6 mg/kg
11	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	320.8 mg/kg
12	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.12 %
13	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	0.65 %

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

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Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 013	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 013
<b>Sample Description</b>	Soil 2	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Soil – 2 - Core Zone</b>		

S. No	Test Parameters	Protocols	Results
14	<b>Texture :</b>		
	Clay	Gravimetric Method	34.3 %
	Sand		28.8%
	Silt		36.9 %
15	Manganese as Mn	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	18.4 mg/kg
16	Zinc as Zn		2.01 mg/kg
17	Boron as B		1.07 mg/kg
18	Potassium as K		32.5 mg/kg
19	Cadmium as Cd		BDL (DL : 1.0 mg/kg)
20	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
21	Copper as Cu		BDL (DL : 1.0 mg/kg)
22	Lead as Pb		0.70 mg/kg
23	Iron as Fe		3.97 mg/kg
24	Cation Exchange Capacity		USEPA 9080 – 1986

\*\*\*\*\*End of Report\*\*\*\*\*



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Name: Santhosh Kumar A  
Designation : Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 014	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 014
<b>Sample Description</b>	Soil 3	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Soil – 3 - Mudhalipalayam</b>		

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	6.78
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	376 µmhos/cm
03	Water Holding Capacity	By Gravimetric Method	43.7 %
04	Bulk Density	By Cylindrical Method	0.91 g/cm <sup>3</sup>
05	Porosity	By Gravimetric Method	41.1 %
06	Calcium as Ca	Food and Agriculture organization of the united Nation Rome 2007 : 2018	62.1 mg/kg
07	Magnesium as Mg		32.6 mg/kg
08	Chloride as Cl	APHA 23 <sup>rd</sup> Edn 2019 4500 Cl B	41.5 mg/kg
09	Soluble Sulphate as SO <sub>4</sub>	IS 2720 Part 27 : 1977 (Reaff:2015)	0.0018 %
10	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	1.09 mg/kg
11	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	387.5 mg/kg
12	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.96 %
13	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.14 %

\*\*\*\*\*End of Report\*\*\*\*\*

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Designation : Quality Manager

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**TESTREPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 014	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangayam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 014
<b>Sample Description</b>	Soil 3	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Soil – 3 - Mudhalipalayam</b>		

S.No	Test Parameters	Protocols	Results
14	<b>Texture :</b>		
	Clay	Gravimetric Method	36.2%
	Sand		28.9 %
	Silt		34.9 %
15	Manganese as Mn	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	22.5 mg/kg
16	Zinc as Zn		1.85 mg/kg
17	Boron as B		2.08 mg/kg
18	Potassium as K		28.7 mg/kg
19	Cadmium as Cd		BDL (DL : 1.0 mg/kg)
20	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
21	Copper as Cu		BDL (DL : 1.0 mg/kg)
22	Lead as Pb		1.17 mg/kg
23	Iron as Fe		1.69 mg/kg
24	Cation Exchange Capacity		USEPA 9080 – 1986

\*\*\*\*\*End of Report\*\*\*\*\*

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Name: Santhosh Kumar A  
Designation : Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 015	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk,Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 015
<b>Sample Description</b>	Soil 4	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Soil – 4 – Idayankinaru</b>		

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	6.97
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	285 µmhos/cm
03	Water Holding Capacity	By Gravimetric Method	42.5 %
04	Bulk Density	By Cylindrical Method	0.81 g/cm <sup>3</sup>
05	Porosity	By Gravimetric Method	41.8 %
06	Calcium as Ca	Food and Agriculture organization of the united Nation Rome 2007 : 2018	66.7 mg/kg
07	Magnesium as Mg		30.2 mg/kg
08	Chloride as Cl	APHA 23 <sup>rd</sup> Edn 2019 4500 Cl B	56.5 mg/kg
09	Soluble Sulphate as SO <sub>4</sub>	IS 2720 Part 27 : 1977 (Reaff:2015)	0.0017 %
10	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	1.15 mg/kg
11	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	326.8 mg/kg
12	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.84 %
13	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.07 %

\*\*\*\*\*End of Report\*\*\*\*\*

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*[Signature]*  
Name : Santhosh Kumar A  
Designation : Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 015	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 015
<b>Sample Description</b>	Soil 4	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Soil – 4 – Idayankinaru</b>		

S. No	Test Parameters	Protocols	Results
14	<b>Texture :</b>		
	Clay	Gravimetric Method	36.5 %
	Sand		24.6 %
	Silt		38.9 %
15	Manganese as Mn	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	27.6 mg/kg
16	Zinc as Zn		1.28 mg/kg
17	Boron as B		1.42 mg/kg
18	Potassium as K		38 mg/kg
19	Cadmium as Cd		BDL (DL : 1.0 mg/kg)
20	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
21	Copper as Cu		BDL (DL : 1.0 mg/kg)
22	Lead as Pb		1.09 mg/kg
23	Iron as Fe		3.68 mg/kg
24	Cation Exchange Capacity		USEPA 9080 – 1986

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

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Designation : Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 016	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 016
<b>Sample Description</b>	Soil 5	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Soil – 5 – Sengondampalayam</b>		

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	7.56
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	336.8 µmhos/cm
03	Water Holding Capacity	By Gravimetric Method	46.9 %
04	Bulk Density	By Cylindrical Method	1.09 g/cm <sup>3</sup>
05	Porosity	By Gravimetric Method	47.5 %
06	Calcium as Ca	Food and Agriculture organization of the united Nation Rome 2007 : 2018	55.6 mg/kg
07	Magnesium as Mg		36 mg/kg
08	Chloride as Cl	APHA 23 <sup>rd</sup> Edn 2019 4500 Cl B	60.4 mg/kg
09	Soluble Sulphate as SO <sub>4</sub>	IS 2720 Part 27 : 1977 (Reaff:2015)	0.0014 %
10	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	2.18 mg/kg
11	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	349.5 mg/kg
12	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.99 %
13	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.16 %

\*\*\*\*\*End of Report\*\*\*\*\*



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Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 016	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 016
<b>Sample Description</b>	Soil 2	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Soil – 5 – Sengondampalayam</b>		

S. No	Test Parameters	Protocols	Results
14	<b>Texture :</b>		
	Clay	Gravimetric Method	34.4 %
	Sand		28.7 %
	Silt		36.9 %
15	Manganese as Mn	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	18.5 mg/kg
16	Zinc as Zn		1.92 mg/kg
17	Boron as B		1.21 mg/kg
18	Potassium as K		37 mg/kg
19	Cadmium as Cd		BDL (DL : 1.0 mg/kg)
20	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
21	Copper as Cu		BDL (DL : 1.0 mg/kg)
22	Lead as Pb		1.08 mg/kg
23	Iron as Fe		3.68 mg/kg
24	Cation Exchange Capacity		USEPA 9080 – 1986

\*\*\*\*\*End of Report\*\*\*\*\*

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Name: Santhosh Kumar A  
Designation : Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 017	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangayam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 017
<b>Sample Description</b>	Soil 6	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Soil – 6 - Sirukinar</b>		

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	7.65
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	415 µmhos/cm
03	Water Holding Capacity	By Gravimetric Method	44.8 %
04	Bulk Density	By Cylindrical Method	1.03 g/cm <sup>3</sup>
05	Porosity	By Gravimetric Method	42.1 %
06	Calcium as Ca	Food and Agriculture organization of the united Nation Rome 2007 : 2018	49.6 mg/kg
07	Magnesium as Mg		23.7 mg/kg
08	Chloride as Cl	APHA 23 <sup>rd</sup> Edn 2019 4500 Cl B	41.6 mg/kg
09	Soluble Sulphate as SO <sub>4</sub>	IS 2720 Part 27 : 1977 (Reaff:2015)	0.0018 %
10	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	2.84 mg/kg
11	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	415.4 mg/kg
12	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	2.49 %
13	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.45 %

\*\*\*\*\*End of Report\*\*\*\*\*

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Name: Santhosh Kumar A  
Designation : Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 017	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Soil	<b>Sample Code</b>	EHS360/ 017
<b>Sample Description</b>	Soil 6	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 KG	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Good	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Soil – 6 - Sirukinar</b>		

S. No	Test Parameters	Protocols	Results
14	<b>Texture :</b>		
	Clay	Gravimetric Method	36.7 %
	Sand		25.5 %
	Silt		37.8 %
15	Manganese as Mn	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	27 mg/kg
16	Zinc as Zn		1.28 mg/kg
17	Boron as B		3.60 mg/kg
18	Potassium as K		34.8 mg/kg
19	Cadmium as Cd		BDL (DL : 1.0 mg/kg)
20	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
21	Copper as Cu		BDL (DL : 1.0 mg/kg)
22	Lead as Pb		0.89 mg/kg
23	Iron as Fe		2.67 mg/kg
24	Cation Exchange Capacity		USEPA 9080 – 1986

\*\*\*\*\*End of Report\*\*\*\*\*

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Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 018	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part), 986/B1(Part), Mudalipalayam village, Kangayam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/018
<b>Sample Description</b>	Surface Water (SW-1)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Amaravathi River</b>		

S.No.	Parameters	Test Method	RESULTS
<b>Discipline: Chemical</b>			
1	Colour	IS 3025 Part 4:1983	12 Hazen
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	8.12
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1487 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	9.4 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	877 mg/l
7	Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009	496 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	129.8 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	41.8 mg/l
10	Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986	425.5 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	501.6 mg/l
12	Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986	98.1 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.68 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.37 mg/l
16	Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988	7.8 mg/l

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/018	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/018
<b>Sample Description</b>	Surface Water (SW-1)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	Amaravathi River		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014	BDL (DL:0.01 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	BOD @ 27°C for 3 days	IS 3025 Part 44:1993 (Reaff:2019)	13.6 mg/l
32	Chemical Oxygen Demand	IS 3025 Part 58:2006 (Reaff:2017)	38 mg/l
33	Dissolved Oxygen	IS 3025 Part 38:1989 (Reaff:2019)	5.8 mg/l
34	Barium as Ba	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL:0.05 mg/l)
35	Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Reaff. 2019)	2.7 mg/l
36	Sulphide as H <sub>2</sub> S	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:0.01 mg/l)
37	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
38	Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
39	Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	16.5 mg/l
	<b>Discipline: Biological</b>	<b>Group: Water</b>	
40	Total Coliform	APHA 23 <sup>rd</sup> Edn. 2017:9221B	350 MPN/100ml
41	<i>Escherichia coli</i>	APHA 23 <sup>rd</sup> Edn. 2017:9221F	115 MPN/100ml

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by

Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 019	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangayam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/019
<b>Sample Description</b>	Surface Water (SW-2)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	Near Project Area		

S.No.	Parameters	Test Method	RESULTS
<b>Discipline:</b> Chemical			
1	Colour	IS 3025 Part 4:1983	< 5
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.16
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1178 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	<1 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	695 mg/l
7	Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009	448 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	120 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	36.9 mg/l
10	Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986	258.5 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	168.6 mg/l
12	Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986	60.2 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.28 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.28 mg/l
16	Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988	5.2 mg/l

\*\*\*\*\*End of Report\*\*\*\*\*

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Verified by




Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

## TEST REPORT

<b>Report No</b>	EHS360/TR/2022-23/019	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/019
<b>Sample Description</b>	Surface Water (SW-2)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	Near Project Area		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	BOD @ 27°C for 3 days	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
32	Chemical Oxygen Demand	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
33	Dissolved Oxygen	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
34	Barium as Ba	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
35	Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
36	Sulphide as H <sub>2</sub> S	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
37	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
38	Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
39	Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	BDL (DL:0.0005 mg/l)
	<b>Discipline:</b> Biological	<b>Group:</b> Water	
40	Total Coliform	APHA 23 <sup>rd</sup> Edn. 2017:9221B	118 MPN/100ml
41	<i>Escherichia coli</i>	APHA 23 <sup>rd</sup> Edn. 2017:9221F	< 1.8 MPN/100ml

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by

Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

## TEST REPORT

<b>Report No</b>	EHS360/TR/2022-23/020	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangayam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/020
<b>Sample Description</b>	Ground Water (WW-1)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	Near Project Area		

S.No.	Parameters	Test Method	RESULTS
	<b>Discipline:</b> Chemical		
1	Colour	IS 3025 Part 4:1983	< 5
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.16
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1178 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	<1 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	695 mg/l
7	Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009	448 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	120 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	36.9 mg/l
10	Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986	258.5 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	168.6 mg/l
12	Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986	60.2 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.28 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.28 mg/l
16	Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988	5.2 mg/l

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

Verified by




Authorised Signatory

A S K  
Name: Santhosh Kumar A  
Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 020	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/020
<b>Sample Description</b>	Ground Water (WW-1)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Near Project Area</b>		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	BOD @ 27°C for 3 days	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
32	Chemical Oxygen Demand	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
33	Dissolved Oxygen	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
34	Barium as Ba	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
35	Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
36	Sulphide as H <sub>2</sub> S	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
37	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
38	Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
39	Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	BDL (DL:0.0005 mg/l)
	<b>Discipline: Biological</b>	<b>Group: Water</b>	
40	Total Coliform	APHA 23 <sup>rd</sup> Edn. 2017:9221B	118 MPN/100ml
41	<i>Escherichia coli</i>	APHA 23 <sup>rd</sup> Edn. 2017:9221F	< 1.8 MPN/100ml

Verified by



Authorised Signatory

Name: Santhosh Kumar A  
Designation : Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 021	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/021
<b>Sample Description</b>	Ground Water (WW-2)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Sirukinar</b>		

S.No.	Parameters	Test Method	RESULTS
<b>Discipline: Chemical</b>			
1	Colour	IS 3025 Part 4:1983	< 5
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.21
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1355 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	<1 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	799 mg/l
7	Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009	404 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	109 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	32.1 mg/l
10	Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986	320.6 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	475.8 mg/l
12	Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986	71.2 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.31 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.27 mg/l
16	Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988	4.7 mg/l

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by

Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.



## TEST REPORT

<b>Report No</b>	EHS360/TR/2022-23/ 021	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangayam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/021
<b>Sample Description</b>	Ground Water (WW-2)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	Sirukinar		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
32	Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
33	Sulphide as H <sub>2</sub> S	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
34	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
35	Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
36	Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
	<b>Discipline:</b> Biological	<b>Group:</b> Water	
37	Total Coliform	APHA 23 <sup>rd</sup> Edn. 2017:9221B	173 MPN/100ml
38	<i>Escherichia coli</i>	APHA 23 <sup>rd</sup> Edn. 2017:9221F	< 1.8 MPN/100ml

\*\*\*\*\*End of Report\*\*\*\*\*

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Verified by



Authorised Signatory

A S K

Name: Santhosh Kumar A  
Designation : Quality Manager

Note: 1. The test results are only to the sample submitted for test. 2. Any correction of the test report in full or part shall invalidate the report. 3. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. 4. Perishable samples will be discarded immediately after reporting. 5. Under no circumstance's lab accepts any liability or loss/damage caused by use or misuse of test report after invoicing or issued of test report.

**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 021	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/021
<b>Sample Description</b>	Ground Water (WW-3)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Sengondampalayam</b>		

S.No	Parameters	Test Method	RESULTS
<b>Discipline: Chemical</b>			
1	Colour	IS 3025 Part 4:1983	< 5
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.51
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1175 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	<1 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	693 mg/l
7	Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009	368 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	99.3 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	29.1 mg/l
10	Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986	265.5 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	382.5 mg/l
12	Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986	68.5 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.29 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.34 mg/l
16	Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988	4.9 mg/l

\*\*\*\*\*End of Report\*\*\*\*\*

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Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

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## TEST REPORT

<b>Report No</b>	EHS360/TR/2022-23/ 021	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangayam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/021
<b>Sample Description</b>	Ground Water (WW-3)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Sengondampalayam</b>		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
32	Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
33	Sulphide as H <sub>2</sub> S	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
34	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
35	Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
36	Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
	<b>Discipline:</b> Biological	<b>Group:</b> Water	
37	Total Coliform	APHA 23 <sup>rd</sup> Edn. 2017:9221B	184 MPN/100ml
38	<i>Escherichia coli</i>	APHA 23 <sup>rd</sup> Edn. 2017:9221F	< 1.8 MPN/100ml

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

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Authorised Signatory

A S K

Name: Santhosh Kumar A  
Designation : Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 022	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk,Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/022
<b>Sample Description</b>	Ground Water (BW-1)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Near Project Area</b>		

S.No	Parameters	Test Method	RESULTS
	<b>Discipline: Chemical</b>		
1	Colour	IS 3025 Part 4:1983	< 5
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.64
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1279 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	<1 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	754 mg/l
7	Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009	312 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	65.9 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	35.9 mg/l
10	Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986	273.3 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	223.5 mg/l
12	Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986	45.8 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.52 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.26 mg/l
16	Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988	3.2 mg/l

\*\*\*\*\*End of Report\*\*\*\*\*

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Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

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## TEST REPORT

<b>Report No</b>	EHS360/TR/2022-23/ 022	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/022
<b>Sample Description</b>	Ground Water (BW-1)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	Near Project Area		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
32	Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
33	Sulphide as H <sub>2</sub> S	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
34	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
35	Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
36	Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
	<b>Discipline: Biological</b>	<b>Group: Water</b>	
37	Total Coliform	APHA 23 <sup>rd</sup> Edn. 2017:9221B	114 MPN/100ml
38	<i>Escherichia coli</i>	APHA 23 <sup>rd</sup> Edn. 2017:9221F	< 1.8 MPN/100ml

\*\*\*\*\*End of Report\*\*\*\*\*

Page 1 of 1

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Authorised Signatory

A S K

Name: Santhosh Kumar A  
Designation: Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 023	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/023
<b>Sample Description</b>	Ground Water (BW-2)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Mudhalipalayam</b>		

S.No.	Parameters	Test Method	RESULTS
	<b>Discipline: Chemical</b>		
1	Colour	IS 3025 Part 4:1983	< 5
2	Odour	IS 3025 Part 5:2018	Agreeable
3	pH at 25°C	IS 3025 Part 11:1983	7.62
4	Conductivity @ 25°C	IS 3025 Part 14:2013	1314 µmhos/cm
5	Turbidity	IS 3025 Part 10:1984	< 1 NTU
6	Total Dissolved Solids	IS 3025 Part 16:1984	775 mg/l
7	Total Hardness as CaCO <sub>3</sub>	IS 3025 Part 21:2009	324 mg/l
8	Calcium as Ca	IS 3025 Part 40:1991	92.9 mg/l
9	Magnesium as Mg	IS 3025 Part 46:1994	22.3 mg/l
10	Total Alkalinity as CaCO <sub>3</sub>	IS 3025 Part 23:1986	245.2 mg/l
11	Chloride as Cl	IS 3025 Part 32:1988	253.7 mg/l
12	Sulphate as SO <sub>4</sub>	IS 3025 Part 24:1986	51.8 mg/l
13	Iron as Fe	IS 3025 Part 53:2003	0.49 mg/l
14	Residual Free Chlorine	IS 3025 Part 26:1986	BDL (DL:0.1 mg/l)
15	Fluoride as F	APHA 23 <sup>rd</sup> Edn. 2017:4500 F,D	0.27 mg/l
16	Nitrate as NO <sub>3</sub>	IS 3025 Part 34:1988	4.6 mg/l

\*\*\*\*\*End of Report\*\*\*\*\*

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Authorised Signatory

Name: Santhosh Kumar A  
Designation: Quality Manager

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**TEST REPORT**

<b>Report No</b>	EHS360/TR/2022-23/ 023	<b>Report Date</b>	31-05-2024
<b>Site Location</b>	<b>M/S. MUDALIPALAYAM ROUGH STONE AND GRAVEL QUARRY</b> S.F. No: 984/2A1(Part) ,986/B1(Part), Mudalipalayam village, Kangeyam takuk, Tiruppur District		
<b>Sampling Method</b>	SOP Method	<b>Sample Drawn by</b>	Laboratory
<b>Sample Name</b>	Water	<b>Sample Code</b>	EHS360/023
<b>Sample Description</b>	Ground Water (BW-2)	<b>Sample Collected Date</b>	25-05-2024
<b>Qty. of Sample Received</b>	2 Litres	<b>Sample Received On</b>	25-05-2024
<b>Sample Condition</b>	Fit for Analysis	<b>Test Commenced On</b>	27-05-2024
<b>Sampling Location</b>	<b>Mudhalipalayam</b>		

S.No.	Parameters	Test Method	RESULTS
17	Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
18	Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
19	Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
20	Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
21	Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
22	Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
23	Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
24	Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
25	Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
26	Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
27	Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
28	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	IS 3025 Part 43-1992(Reaff: 2019)	BDL (DL:0.0005 mg/l)
29	Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
30	Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
31	Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
32	Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
33	Sulphide as H <sub>2</sub> S	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
34	Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
35	Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
36	Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
	<b>Discipline:</b> Biological	<b>Group:</b> Water	
37	Total Coliform	APHA 23 <sup>rd</sup> Edn. 2017:9221B	109 MPN/100ml
38	<i>Escherichia coli</i>	APHA 23 <sup>rd</sup> Edn. 2017:9221F	< 1.8 MPN/100ml

\*\*\*\*\*End of Report\*\*\*\*\*



Verified by

*[Signature]*

Authorised Signatory

*[Signature]*

Name: Santhosh Kumar A  
Designation: Quality Manager

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## National Accreditation Board for Education and Training



# Certificate of Accreditation

### Geo Exploration & Mining Solutions, Salem

No. 17, Advaita Ashram Road, Fairlands, Salem – 636 004, Tamilnadu, India.

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 opencast only	1	1 (a) (i)	A
2	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	B
3	Building and construction projects	38	8(a)	B

**Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated Jan 06, 2023 and posted on QCI-NABET website.**

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACO/23/2684 dated Feb 20, 2023. The accreditation needs to be renewed before the expiry date by Geo Exploration & Mining Solutions, Salem following due process of assessment.

Sr. Director, NABET  
Dated: Feb 20, 2023

Certificate No.  
NABET/EIA/2225/RA 0276

Valid up to  
August 06, 2025

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