

# DRAFT ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENT MANAGEMENT PLAN

FOR OBTAINING

Environmental Clearance under EIA Notification – 2006

Schedule Sl. No. 1 (a) (i): Mining Project

“B1” CATEGORY – MINOR MINERAL – CLUSTER – NON-FOREST LAND

CLUSTER EXTENT = 11.57.50 hectares

At

Gopanapalli Village, Hosur Taluk,

Krishnagiri District, Tamil Nadu State

ToR Lr No. SEIAA-TN/F.No.10058/SEAC/ToR-1505/2023 Dated: 31.07.2023

NAME AND ADDRESS OF THE PROPOSED PROJECT PROPONENT

Name and Address	Extent & S.F.No.	Mineral Production
M/s. Victory Rocks D.No. 4/637, Dasarapalli Village, Denkanikottai Taluk, Krishnagiri District - 635118.	1.33.5Ha & 327/3	Rough stone -74553

## ENVIRONMENTAL CONSULTANT

GEO TECHNICAL MINING SOLUTIONS



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NABET ACC. NO: NABET/EIA/23-26/RA 0319

Valid till: Dec, 31.12.2026



## ENVIRONMENTAL LAB

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Baseline Study Period –December 2023 through February 2024



GEO TECHNICAL MINING SOLUTIONS

## TERMS OF REFERENCE (ToR) COMPLIANCE

**ToR issued vide Lr No. SEIAA-TN/F.No.10058/SEAC/ToR-1505/2023 Dated:31.07.2023**

### for M/s. Victory Rocks Rough Stone Quarry

1	<p>As per Metalliferous mines Regulation 1961, under Chapter XI, 106(2) (a) “..... the face shall be benched and the sides shall be sloped at an angle of not more than 60 degrees from the horizontal. The height of any bench shall not exceed six meters and the breadth thereof shall not be less than the height.....”</p> <p>Hence, the proponent shall review the mining plan with bench height and width as per metalliferous mines regulation 1961 and a revised mining plan/scheme of mining approved by the concerned assistant director of dept. of geology shall be submitted with a bench geometry of not less than 6m height x 6m width.</p>	The revised mining plan which is approved by the Deputy Director department of Geology and Mining, Krishnagiri are attached in the Annexure III.												
2	<p>For the existing quarry, the PP shall obtain a letter from the concerned AD(Mines) which include the following information.</p> <table><tr><td>(i)</td><td>Original pit dimension</td></tr><tr><td>(ii)</td><td>Quantity achieved Vs EC Approved Quantity</td></tr><tr><td>(iii)</td><td>Balance Quantity as per Mineable Reserve calculated.</td></tr><tr><td>(iv)</td><td>Mined out Depth as on date Vs EC permitted depth</td></tr><tr><td>(v)</td><td>Details of illegal/illicit mining</td></tr><tr><td>(vi)</td><td>Non-compliance/Violation in the quarry during the past working</td></tr></table>	(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)	Non-compliance/Violation in the quarry during the past working	The details of AD (Mines) letter will be submitted during final EIA report.
(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)	Non-compliance/Violation in the quarry during the past working													

	(vii)	Quantity of material mined outside the mine lease area (or) in the adjacent quarry/land.	
	(viii)	Existing condition of Safety zone/benches	
2	Details of any penalties levied on the PP for any violation in the quarry operation.		There is no any penalty/violation for this quarry operation.
3	The PP shall submit Certified Compliance Report obtained from the office of the concerned DEE/TNPCB (or) IRO, MoEF & CC, Chennai and appropriate mitigating measures for the non-compliance items, if any.		CCR details will be submitted during final EIA report.
4	The Project Proponent shall furnish the revised EMP for remaining life of the mine in the format prescribed by the SEAC.		A detailed Environment Management Plan has been prepared and provided in Tables 10.1 & 10.2 under Chapter X in the EIA report page 128-132.
5	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-IT-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 Slope Stability report will be submitted during final EIA report.

## ANNEXURE-I

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 outside the mine lease area
	(viii)	Condition of Safety zone/benches
	(ix)	Revised/Modified Mining plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.
2	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site	
3	The 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	
4	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the	

The details of AD (Mines) letter will be submitted during final EIA report.

The VAO certificate is attached in the **Annexure IV.**

The DFO letter will be submitted in the final EIA report.

The Slope Stability report will be submitted in the final EIA report.



	<p>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.</p>	
5	<p>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.</p>	<p>The Slope Stability report will be submitted in the final EIA report.</p>
6	<p>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>The affidavit for blasting will be submitted in the final EIA report.</p>
7	<p>The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle</p>	<p>A conceptual design of blasting has been given in the Section 2.6 under</p>

	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.	Chapter II in the EIA report page 18-25.
8	The EIA coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.	The details will be submitted in the final EIA report.
9	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,	
10	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	The details of AD (Mines) letter will be submitted during final EIA report.
11	Quantity of minerals mined out.	
	Highest production achieved in any one year	
	Detail of approved depth of mining.	
	Actual depth of the mining achieved earlier.	
	Name of the person already mined in that lease area.	
	If EC and CTO already obtained, the copy of the same shall be submitted	
	Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	
12	All corner coordinates of the mine lease area. superimposed on a High-Resolution Imagery/Toposheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should	All corner coordinates of the mine lease area have been superimposed on a high-resolution Google Earth Image, as shown in Figure 2.4 under Chapter II in the EIA report page 13.

	clearly show the land use and other ecological features of the study area (core and buffer zone).	
13	The PP shall carry out Drone video survey covering the cluster, green belt, fencing etc.,	The drone video will be submitted during final EIA presentation.
14	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Photographs of adequate fencing, green belt will be included in the final EIA report.
15	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, The anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	The Resources and Reserves of Rough Stone were calculated based on cross-section method by plotting sections to cover the maximum lease area for the proposed project. The plate used for reserve estimation has been presented in Figure 2.5 results of geological resources and reserves have been shown in Table 2.3. under Chapter II in the EIA report page 14-18.
16	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act, 1952 and the MMR,1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	Details of manpower required for this project have been given in Table 2.14 under Chapter II in the EIA report page 25.
17	The Project Proponent shall conduct the hydro-geological study considering the	Detailed hydrogeological study was carried out. The results have been

	<p>contour map of the water table detailing the number of ground water pumping &amp; open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1km (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>discussed Section 3.2.2 under Chapter III, in the EIA report page 38-48.</p>
18	<p>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>The baseline data were collected for the environmental components including land, soil, water, air, noise, biology, socio-economy, and traffic and the results have been discussed under Chapter III in the EIA report page 26-89.</p>
19	<p>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. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.</p>	<p>Results of cumulative impact study due to mining operations are given in Section 7.4 - 7.9 under Chapter VII in the EIA report page 117-121.</p>
20	<p>Rain water harvesting management with recharging details along with water</p>	<p>As part of rainwater harvesting measures, the rain water from garland</p>

	balance (both monsoon & non-monsoon) be submitted.	drainage system will be diverted to nearby check dams after treating the water in settling tanks.
21	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 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 has been discussed in Section 3.1 Chapter III in the EIA report page 27-36. The details of surrounding sensitive ecological features have been provided in Table 3.42 under Chapter III in the EIA report page 87. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Table.2.8 under Chapter II in the EIA report page 21.
22	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.	This condition is not applicable to this project because no dumps have been proposed outside the lease area.
23	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	Not Applicable. Project area/Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.

	and furnished to the effect that the proposed mining activities could be considered.	
24	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	As part of rainwater harvesting measures, the rain water from garland drainage system will be diverted to nearby check dams after treating the water in settling tanks.
25	Impact on local transport infrastructure due to the project should be indicated.	Details regarding the impact of the project on traffic are given in Section 3.7 under Chapter III in the EIA report page 84-86.
26	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.	A detailed tree survey was carried out within 300 m radius and the results have been discussed in Section 3.5 under Chapter III in the EIA report page 63-79.
27	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific	A progressive mine closure plan has been attached with the approved mining plan report in Annexure III. The budget details for the progressive mine closure plan are shown in Table 2.9 under Chapter II in the EIA report page 21.
28	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 EIA coordinator and the FAE for ecology and biodiversity visited the study area and educated the local students about the importance of protecting the biological environment.
29	The purpose of green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise	A detailed greenbelt development plan has been provided in Section.4.6 under

	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.	Chapter IV in the EIA report page 100-104.
30	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/Horticulture 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 FAE of ecology and biodiversity has advised the project proponent that saplings of one year old raised in the eco-friendly bags should be purchased and planted with the spacing of 3m between each plant around the proposed project area as per the advice of local forest authorities/botanist.
31	A Disaster management plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	A disaster management plan for the project has been provided in Section 7.3 under Chapter VII in the EIA report page 116-117.
32	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	A risk assessment plan for the project has been provided in Section 7.2 under Chapter VII in the EIA report page 113-116.
33	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical	Occupational health impacts of the project and preventive measures have been discussed in detail in Section 4.8

	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.	under Chapter IV in the EIA report 104-105.
34	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 are anticipated due to this project. Details of CSR and CER activities have been discussed in Sections 8.6 and 8.7 under Chapter VIII in the EIA report page 124-125.
35	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 of the study area is anticipated and this project shall benefit the socio-economic environment by offering employment for 16 people directly as discussed in Section 8.1 under Chapter VIII in the EIA report page 123.
36	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 in any court against this project.
37	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Benefits of the project details have been given under Chapter VIII in the EIA report page 123-125.
38	If any quarrying operation were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall	The CCR details will be submitted in the final EIA report.



	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.	
39	The PP Shall prepare the EMP for the entire life/lease period of mine and also Furnish the sworn affidavit starting to Abide the EMP for the entire life of mine.	A detailed environment management plan has been prepared following the suggestion made by SEAC, as shown in Chapter X in the EIA report page 127-132. The sworn affidavit stating to abide the EMP for the entire life of mine will be submitted during final EIA presentation.
40	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.	The EIA report has been prepared keeping in mind the fact that concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may lead to withdrawal of this terms of reference besides attracting penal provisions in the Environment (Protection) Act, 1986.
<p>The proposal was placed in the 670th Authority meeting held on 06.11.2023. The authority noted that this proposal was placed for appraisal in the 416th SEAC meeting held on 13.10.2023, the committee has furnished its recommendations for granting ToR with Public hearing subject to the conditions stated therein. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions recommended by SEAC &amp; normal conditions in addition to the conditions in 'Annexure B' of this minute.</p>		

<b>Annexure ‘B’</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.	A cluster management committee including all the proponents of the rough stone quarrying projects within the cluster of 500m radius will be constituted for the effective implementation of green belt development plan, water sprinkling, blasting, etc.
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 members of the cluster management committee will be instructed to carry out EMP in coordination.
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 Section 2.6 under Chapter II in the EIA report page 18-25.
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.	It will be informed to the committee.

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.	It will be advised to the cluster management committee 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 will 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.	A 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 worker/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 committee will submit the fire safety and evacuation plan as discussed in Section 7.3 under Chapter VII in the EIA report page 116-117.
<b>Impact study of mining</b>		
12	Detailed study shall be carried out in the regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following	
	a) Soil health & bio-diversity.	Soil health and biodiversity have been discussed in Sections 3.1.6 and 3.5

		respectively under Chapter III in the EIA report page 33-36 & 63-79.
b)	Climate change leading to Droughts, Floods etc.	Climatic condition of the proposed project area has been discussed in Section 3.3.1 under Chapter III in the EIA report page 48-49.
c)	Pollution leading to release of Greenhouse gases (GHG), rise in Temperature & Livelihood of the local people.	The information about CO <sub>2</sub> emission has been added to Section 4.6 under Chapter IV in the EIA report page 100-104.
d)	Possibilities of water contamination and impact on aquatic ecosystem health.	Possibilities of both surface and ground water contamination have been discussed in Section 4.3 under Chapter IV in the EIA report page 91. The impact on aquatic species has been discussed in Section 4.6 under Chapter IV in the EIA report page 100-104.
e)	Agriculture, Forestry & Traditional practices.	Sorgum, millet, groundnut, and coconut are the primary crops that are cultivated in the study area the 1km radius agriculture details discussed in Chapter III Page No 26-89.
f)	Hydrothermal/Geothermal effect due to destruction in the Environment.	The average geothermal gradient of earth is 25 <sup>0</sup> C/km. As the proposed depth of mining is 40m (20m AGl + 20m AGL) below the local ground level, the temperature will increase by 1 <sup>0</sup> C at the depth of mining.
g)	Bio-geochemical processes and its foot prints including environmental stress.	There are no Bio-geochemical processing activities in and around the lease area.
h)	Sediment geochemistry in the surface streams	The details regarding are discussed in the Table 3.4 under Chapter III in the EIA report page 36.

<b>Agriculture &amp; Agro-Biodiversity</b>		
13	Impact on surrounding agricultural fields around the proposed mining Area.	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, as shown in Section 4.6 under Chapter IV in the EIA report page 100-104.
14	Impact on soil flora & vegetation around the project site	The details on flora have been provided in Section 3.5 under Chapter III in the EIA report page 63-79. 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.	Details of vegetation in the lease area have been provided in Section 3.5 under Chapter III in the EIA report page 63-79. Details about transplantation of plants have been provided in Section 4.6 under Chapter IV in the EIA report page 100-104.
16	The Environmental impact assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed bank and suggest measures to maintain natural ecosystem.	The ecological details have been provided in Section 3.5 under Chapter III in the EIA report page 63-79. and measures have been provided in Section 4.6 under Chapter IV in the EIA report page 100-104.
17	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	All the essential environmental protective measures will be followed by the proponent to manage the surrounding environment

		and restore the ecosystem, as discussed in Chapter IV in the EIA report page 90-107.
18	The Project proponent shall study and furnish the impact of project on plantations in adjoining Patta lands, Horticulture, Agriculture and livestock.	The impact of project on the land environment has been discussed in Section 4.1 under Chapter IV in the EIA report page 90.
<b>Forest</b>		
19	The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.	The project proponent shall do barbed wire fencing work and develop a green belt around the lease area to prevent wildlife from entering the site. There is no reserve forest in the 1 km radius from the lease area.
20	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	The impacts of the project on ecology and biodiversity have been discussed in Section 4.6 under Chapter IV in the EIA report page 100-104.
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	The impacts of the project on standing trees and the existing trees have been discussed in Section 4.6 under Chapter IV in the EIA report page 100-104.
22	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	There are no Protected Areas, National Parks, Corridors and Wildlife pathways near project site. The list of reserve forests within 10 km radius has been provided in Table 3.42 under Chapter III in the EIA report page 87.
<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.	Detailed hydrogeological study was carried out. The results have been discussed Section 3.2 under Chapter III, in the EIA report page 37-48.

	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.	Garland drainage structures will be constructed around the lease area to control the erosion as discussed in Section 4.3 under Chapter IV in the EIA report page 91.
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.	The matter has been discussed under Chapter IV in the EIA report page 90- 107.
26	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and reservoir.	An analysis for food chain in aquatic ecosystem has been discussed in Section 3.5.1 under Chapter IV in the EIA report page 77.
27	The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.	The impacts of the proposed project on the surrounding environment have discussed in Chapter IV in the EIA report page 90-107.
28	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damage to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	The impact of the proposed project on aquatic plants and animals in water bodies has been discussed in Section 4.6.4 under Chapter IV in the EIA report page 103.

29	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The impact of mining on soil environment has been discussed in Section 4.2 under Chapter IV in the EIA report page 91.
30	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	The impacts on water bodies, streams, lakes have been discussed in Section 4.3 under Chapter IV in the EIA report page 91.
<b>Energy</b>		
31	The measures taken to control Noise, Air, Water, Dust and steps adopted to efficiently utilize the Energy shall be furnished.	The measures taken to control noise, air, water, and dust have been given under Chapter IV in the EIA report page 90-107.
<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.	The carbon emission and the measures to mitigate carbon emission have been discussed in Section 4.6 under Chapter IV in the EIA report page 100-104.
33	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	The matter has been discussed in Chapter IV in the EIA report page 90-107.
<b>Mine Closure Plan</b>		
34	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	A progressive mine closure plan has been attached with the approved mining plan report in Annexure III. The budget details for the progressive mine closure plan are shown in Table 2.9 under Chapter II in the EIA report page 21.



<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.	A detailed Environment Management plan has been given under Chapter X in the EIA report page 127-132.
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.	A detailed Environment Management plan has been given in Tables 10.1 & 10.2 under Chapter X in the EIA report page 128-128.
<b>Risk Assessment</b>		
37	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	The risk assessment and management plan for this project has been provided in Section 7.2 under Chapter VII in the EIA report 113-116.
<b>Disaster Management Plan</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/unfavorable accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	The disaster management plan for this project has been provided in Section 7.3 under Chapter VII in the EIA report page 116-117.
<b>Others</b>		
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	The VAO certificate of 300 m radius have been given in the <b>Annexure IV</b> .

	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 concerns raised during the public consultation will be submitted in final EIA 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 & microplastic on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	The matter on plastic waste management has been given in Section 7.10 under Chapter VII in the EIA report page 122.

#### **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.	Not applicable. 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 proposed site for quarrying is a private land. A copy of the document showing that the proponent is the rightful lessee has been enclosed along with the approved mining plan in Annexure III.

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.	All the documents related to mining plan, EIA and public hearing are compatible to each other and have been provided in the Annexure part.
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).	All corner coordinates of the mine lease area have been superimposed on a high-resolution Google Earth Image, as shown in Figure 2.4, under Chapter II in the EIA report page 13.
5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geology 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.	Toposheets of Survey of India have been used for showing sampling locations of air, soil, water, and noise, as shown in Chapter III in the EIA report page 26-89.
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 lease 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	The proponent has framed Environmental Policy and the same has been discussed in Section 10.1 under Chapter X in the EIA report page 127.

	<p>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.</p>	
8	<p>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</p>	<p>It is an opencast quarrying operation proposed to operate in Manual 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° 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.</p>
9	<p>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</p>	<p>The study area considered for this study is of 5 km radius for air, soil, water, and noise level sample collections, while the study area is 10 km radius for ecology and</p>

	be for the life of the mine/ lease period.	biodiversity studies 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 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 has been discussed in Section 3.1 under Chapter III in the EIA report page 27-36. The details of surrounding sensitive ecological features have been provided in Table 3.42 under Chapter III in the EIA report page 87. Land use plan of the project area showing pre- operational, operational and post- operational phases are discussed in Table 2.8 under Chapter II in the EIA report page 21.
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.	It is not applicable as no dumps have been proposed outside the lease area. The entire quarried out rough stone will be transported to the needy customers.
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	It is not applicable as there is no forest land involved within 1km of the proposed project area. The details have been discussed in Table 3.42 under Chapter III in the EIA report page 87.

	<p>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.</p>	
13	<p>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.</p>	<p>It is not applicable as the proposed project area does not involve any forest land.</p>
14	<p>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.</p>	<p>Not Applicable.</p> <p>The project doesn't attract Recognition of Forest Rights Act, 2006 as there are neither forests nor forest dwellers / 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.</p>
15	<p>The vegetation in the RF / PF areas in the study area, with necessary details, should be given.</p>	<p>The details of the RF / PF are discussed in the Table 3.42 under Chapter III in the EIA report page 87. The vegetation details have been discussed Section 3.5.1, under Chapter III in the EIA report page 65-73.</p>
16	<p>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</p>	<p>There is no any wildlife/protected area within 10 km radius from the periphery of the project area. Information regarding the</p>

	the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.	same has been given in Table 3.42 in Chapter III in the EIA report page 87.
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.	There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/ Elephant Reserves within 10 km radius from the periphery of the project area. Information regarding the same has been given in Table 3.42 under Chapter III in the EIA report page 87.
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	A detailed biological study was carried out in both core and buffer zones and the results have been discussed in Section 3.5 under Chapter III in the EIA report page 63-79.

	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 '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.	Not Applicable.  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 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).	Not applicable  The project doesn't attract the CRZ 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 Policy should be kept in view. In respect of SCs/STs and other weaker sections of the	Not Applicable.  There are no approved habitations of SCs/STs and other weaker sections in the lease area. Therefore, R&R Plan / Compensation Plan for the Project Affected People (PAP) are not provided.



	<p>society in the study area, a need-based sample survey, family- wise, should be undertaken to assess their requirements, and action programs prepared and submitted accordingly, integrating the sectoral programs 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&amp;R and socio-economic aspects should be discussed in the report.</p>	
22	<p>One season (non-monsoon) [i.e., March-May (Summer Season); October-December (post monsoon season); December – February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date- wise in the EIA and EMP Report. Site- specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the 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 predominant downwind</p>	<p>Baseline data were collected for the period of December-2023 through February-2024 as per CPCB notification and MoEF &amp; CC Guidelines. Primary baseline data and the results have been included in Sections 3.1-3.8 under Chapter III in the EIA report page 27-87.</p>

	direction. The mineralogical composition of PM10, particularly for free silica, should be given.	
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 predominant wind direction Ma also be indicated on the map.	Air quality modelling for prediction of incremental GLCs of pollutants was carried out using AERMOD view 12.0. The model results have been given in Section 4.4 under the Chapter IV in the EIA report page 92-96.
24	The water requirement for the project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the project should be indicated,	The water requirement for the project, its availability and source have been provided in Table 2.11 under Chapter II in the EIA report page 24.
25	Necessary clearance from the competent authority for drawl of requisite quantity of water for the project should be provided.	Not Applicable. Water for dust suppression, greenbelt development and domestic use will be sourced from accumulated rainwater/seepage water in mine pits and purchased from local water vendors through water tankers on daily requirement basis. Drinking water will be sourced from the approved water vendors.

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.	Part of the working pit will be allowed to collect rain water during the spell of rain. The water thus collected will be used for greenbelt development and dust suppression. The mine closure plan has been prepared for converting the excavated pit into rain water harvesting structure and serve as water reservoir for the project village during draught season.
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 environment including surface water and ground water have been discussed in Section 4.3 under Chapter IV in the EIA report page 91.
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 hydrogeological 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 should be furnished.	Not Applicable.  The ground water table is found at the depth of 65m below ground level. The depth of quarry is 40m (20m AGL + 20m BGL). Therefore, the mining activity will not intersect the ground water table. Data regarding the occurrence of groundwater table have been provided in Section 3.2 under Chapter III in the EIA report page 37-48.
29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if	Not Applicable.  There are no streams, no seasonal or other water bodies passing within the project

	any, and the impact of the same on the hydrology should be brought out.	area. Therefore, no modification or diversion of water bodies is anticipated.
30	Information on site elevation, working depth, groundwater table etc. should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.	The highest elevation of the project area is 896m AMSL. Ultimate depth of the mine is 40m (20m AGL + 20m BGL). Depth to the water level in the area is 65m AGL.
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 prior to 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.	Greenbelt development plan has been given in Section 4.6 under Chapter IV in the EIA report page 100-104.
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	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 significant impact due to the proposed transportation from the project area. Details have been

	<p>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.</p>	<p>provided in Section 3.7 under Chapter III in the EIA report page 84-86.</p>
33	<p>Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.</p>	<p>Infrastructure &amp; other facilities will be provided to the mine workers after the grant of quarry lease and the same has been discussed in Section 2.6.7 under Chapter II in the EIA report page 21.</p>
34	<p>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.</p>	<p>Progressive mine closure plan has been prepared for this project and is given in Section 2.6.4 under Chapter II in the EIA report page 20-21.</p>
35	<p>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>The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.</p>
36	<p>Public health implications of the project and related activities for the population in the impact zone should be</p>	<p>No public health implications are anticipated due to this project. Details of CSR and CER activities have been</p>

	systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	discussed in Sections 8.6 and 8.7 under Chapter VIII in the EIA report page 124-125.
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.	No negative impact on socio-economic environment of the study area is anticipated and this project shall benefit the socio-economic environment by offering employment for 16 people directly as discussed in Section 8.1 under Chapter VIII in the EIA report page 123.
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.	A detailed Environment Management Plan has been prepared and provided in Tables 10.1 & 10.2 under Chapter X in the EIA report page 128-132.
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.	The outcome of public hearing will be submitted during final EIA report.
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.	No litigation is pending in any court against this project.
41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be	Project Cost is Rs.1,96,20,000/- CER Cost is Rs. 5,00,000/-

	clearly spelt out.	In order to implement the environmental protection measures, an amount of Rs.2339367 as capital cost and recurring cost as Rs.1299038 as recurring cost/annum is proposed considering present market price considering present market scenario for the proposed project. After the adjustment of 5% inflation per year, the overall EMP cost for 5 years will be Rs.9517374, as shown in Tables 10.1 & 10.2 under Chapter X in the EIA report page 128-132.
42	A Disaster management plan shall be prepared and included in the EIA/EMP report.	The disaster management plan for this project has been provided in Section 7.3 under Chapter VII in the EIA report page 116-117.
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.	Benefits of the project details have been given under Chapter VIII in the EIA report page 123-125.
44	Besides the above, the below mentioned general points are also to be followed:	
a)	Executive summary of the EIA/EMP report	Executive summary has been enclosed as a separate booklet.
b)	All the documents to be properly referenced with index and continuous page numbering.	All the documents have been 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 have been mentioned.
d)	Project Proponent shall enclose all the analysis/testing reports of water, air, soil,	Original Baseline monitoring report will be submitted in the final EIA report.

	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.	All the documents provided here are in English language.
f)	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	The questionnaire will be submitted in the final EIA 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, which are available on the website of this Ministry, should be followed.	Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IA. II (I) dated 4 <sup>th</sup> August, 2009 have been followed while preparing the EIA report.
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.	No changes are made in the basic scope and the project parameters.



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.	The CCR report will be submitted in the final EIA report.
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.	All the plans including surface & geological plans, and progressive closure plan have been included in Annexure III.

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# **CHAPTER I**

## **INTRODUCTION**

### **1.0 PREAMBLE**

Environmental Impact Assessment (EIA) study is a process used to identify the environmental, social and economic impacts of a project prior to decision-making. EIA systematically examines both beneficial and adverse consequences of the proposed project and ensure that these impacts are considered during the project designing. According to the Ministry of Environment and Forests, Govt. of India, EIA notification S.O. 1533(E) of 14<sup>th</sup> September 2006 and its subsequent amendments as per Gazette Notification S.O. 3977 (E) of 14<sup>th</sup> August 2018, all the mining projects are broadly classified into two categories, i.e., category A and category B, based on the spatial extent of the projects. The category B projects are further divided in to B1 and B2 on the basis of the guidelines issued of the Ministry of Environment and Forests. All mining projects included in category B1 require an EIA report for obtaining environmental clearance from the State Environment Impact Assessment Authority (SEIAA). As the proposed project falls within the cluster of quarries of overall extent of greater than 5 ha and less than 50 ha in the case of non-coal mine lease, the proposed project falls under the category B1 and the project requires preparation and submission of an EIA report after public consultation to SEIAA for obtaining environmental clearance 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.

In compliance with ToR obtained vide Lr No. SEIAA-TN/F.No.10058/SEAC/ToR-1505/2023 Dated: 31.07.2023, this EIA report has been prepared for the project proponent, M/s.Victory Rocks, applied for rough stone quarry lease in the Government Poramboke land falling in S.F.No.327/3, over an extent of 1.33.50ha in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State. This EIA report takes into account the rough stone quarry within the cluster of 500m radius from the periphery of the proposed project site. The cluster contains three proposed projects known as P1, P2 and P3, two Existing Projects E1, E2. All the projects mentioned above have been taken for cluster extent calculation as per MoEF & CC Notification S.O. 2269 (E) Dated 1<sup>st</sup> July 2016. The total extent of all the quarries in the cluster is 11.57.5ha also known as the cluster extent. The quarries involved in the calculation of cluster extent are shown in Figure 1.1.

**Table 1.1 Details of Quarries within the Cluster Area of 500m Radius**

Proposed Quarry					
Code	Name of the Owner	S.F. No	Village	Extent (in hect)	Status
P1	M/s.Victory Rocks	327/3	Gopanapalli	1.33.5	23.03.2020 to 22.03.2030
P1	M/s.Vijay Blue Metals	327/1 (Part)	Gopanapalli	2.62.0	Ternder EC obtained. Lease not yet granted
P3	Mr.C.Manivannan	327/1(Part-2)	Gopanapalli	3.00.0	
Existing Quarry					
E1	Thiru.V.Jayaprakash	327/1 (Part-1)	Gopanapalli	3.00.0	05.08.2016 to 04.08.2026
E2	G.R.Anand Babu	327/2	Gopanapalli	1.62.0	13.06.2018 to 12.06.2023
Total Cluster Extent				11.57.5	---

**Source:**

*DD Letter: Rc.No.178/2018/Mines, Dated:23.05.2023*

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

**1.1 PURPOSE OF THE REPORT**

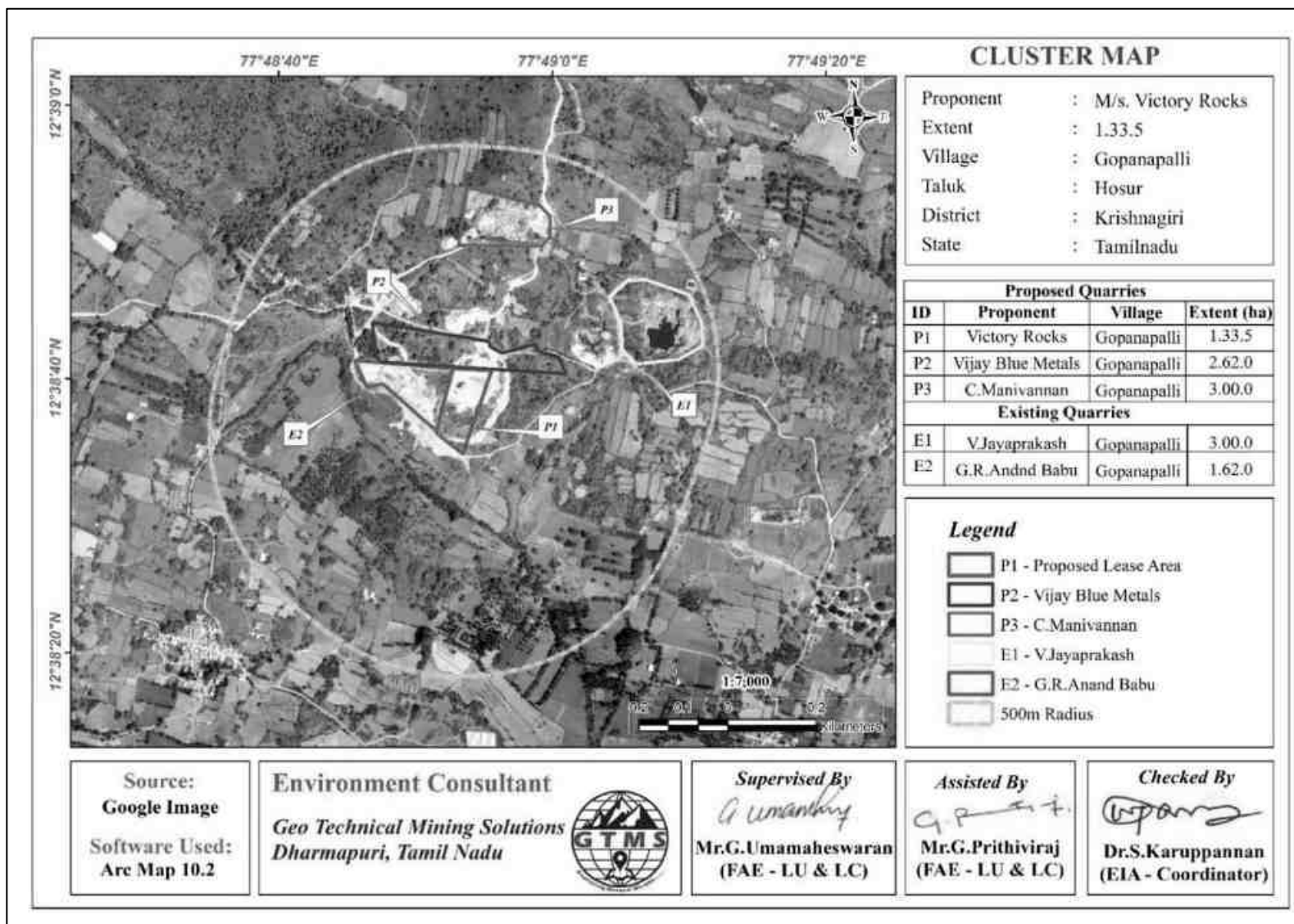
The purpose of the report is to study baseline environmental conditions in and around the proposed project area for the period of **December-2023 through February-2024** according to the provisions of MoEF & CC Office Memorandum dated 29.08.2017 and MoEF & CC Notification, S.O. 996 (E) dated 10.04.2015 to analyse impacts and provide mitigation measures.

**1.2 ENVIRONMENTAL CLEARANCE**

The Environmental Clearance process for the project will comprise of four stages. These stages are screening, scoping, public consultation & appraisal.

**Screening**

Screening is the first stage of the EIA process. In this stage, the State level Expert Appraisal Committee (SEAC) examined the application of EC made by the proponent in Form 1 through online (Proposal No. SIA/TN/ MIN/430765/2023, dated.25.05.2023) and decided that the project requires detailed environmental studies for the preparation of EIA report. Therefore, the proponent submitted application for Terms of Reference (ToR) on 27.05.2023.



**Figure 1.1 Location of Proposed and Existing Rough Stone Quarry in the Cluster of 500m Radius**



### ***Scoping***

The proposal was placed in the 392<sup>th</sup> meeting of SEAC held on 14.07.2023. Based on the presentation and documents furnished by the project proponent, SEAC decided to recommend the proposal for the grant of Terms of Reference (ToR) and the recommendation for ToR is subjected to the outcome of the Honorable NGT, Principal Bench, New Delhi (O.A No.186 of 2016 (M.A.No.350/2016) and O.A. No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No. 758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No.12/2017 & M.A. No. 843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No. 981/2016, M.A.No.982/2016 & M.A.No.384/2017).

### ***Public Consultation***

In this stage, an application along with the draft of EIA and EMP report will be made to the Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing ensuring public participation at the project site or in its close proximity in the district. During public hearing, an opportunity will be given to the people living nearby the project site to express their opinions about the impact of the proposed project on the environment. The outcome of the public hearing meeting will be updated in the final EIA report for appraisal.

### ***Appraisal***

In this stage, an application along with final EIA report including the outcome of the public consultations will be made to the SEIAA. The application thus made will be scrutinized by the SEAC. Then, the SEAC will make recommendations to grant EC or reject the application to the SEIAA.

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

The SEAC framed a comprehensive Terms of Reference (ToR) based on the information provided in the Form 1 and information collected from the proposed project site visit and issued ToR to the proponent vide Lr.No. SEIAA-TN/F.No.10058/SEAC/ToR-1505/2023 Dated: 31.07.2023 for the preparation of an EIA report.

### **1.4 POST ENVIRONMENT CLEARANCE MONITORING**

For category B projects, irrespective of its clearance by MoEF/SEIAA, the project proponent shall prominently advertise in the newspapers indicating that the project has been accorded environmental clearance and the details of MoEF website where it is displayed. After obtaining EC, the project proponent will submit a half-yearly compliance report of stipulated

environmental clearance terms and conditions to MoEF & CC Regional Office & SEIAA on 1<sup>st</sup> June and 1<sup>st</sup> December of every year.

### 1.5 TRANSFERABILITY OF ENVIRONMENTAL CLEARANCE

A prior environmental clearance granted for a specific project or activity to an applicant may be transferred during its validity to another legal person entitled to undertake the project or activity on application by the transferor or the transferee with a written “no objection” by the transferor, to, and by the regulatory authority concerned, on the same terms and conditions under which the prior environmental clearance was initially granted, and for the same validity period (EIA Guidance Manual for Mining of Minerals, 2010).

### 1.6 IDENTIFICATION OF THE PROJECT PROPONENT

The profile of the project proponent who has involved in this quarrying project has been given in Table 1.2.

**1.2 Details of Project Proponent**

<b>Name of the Project Proponent</b>	<b>M/s. Victory Rocks</b>
<b>Address</b>	D.No. 4/637, Dasarapalli Village, Denkanikottai Taluk, Krishnagiri District - 635118.
<b>Status</b>	Proprietor

### 1.7 BRIEF DESCRIPTION OF THE PROJECT

The proposed project deals with excavation of rough stone which is primarily used in construction projects. The method adopted for rough stone excavation is open cast semi mechanized method involving formation of benches with 5m height and 5m width. The proposed project site is located in Gopanapalli Village, Hosur Taluk, Krishnagiri District. Tamil Nadu. Some of the important features of the proposed project have been provided in Table 1.3.

**Table 1.3 Salient Features of P1**

<b>Name of the Quarry</b>	<b>M/s.Victory Rocks Rough Stone Quarry</b>
<b>Type of Land</b>	<b>Government Poramboke Land</b>
<b>Extent</b>	1.33.5 ha
<b>S.F. No</b>	327/3
<b>Toposheet No</b>	57-H/14
<b>Highest Elevation</b>	896 m AMSL

Latitude	12°38'34.51"N to 12°38'40.75"N	
Longitude	77°48'51.48"E to 77°48'55.56"E	
Ultimate Pit Dimension	40m (20 m AGL + 20 m BGL)	
Geological Resources	Rough stone (m <sup>3</sup> )	Top Soil (m <sup>3</sup> )
	221634	2550
Mineable Reserves	Rough stone (m <sup>3</sup> )	Top Soil (m <sup>3</sup> )
	74553	1403
Proposed production for remaining 6 years	Rough stone (m <sup>3</sup> )	Top Soil (m <sup>3</sup> )
	74553	1403
Method of Mining	Open cast mechanized mining method	
Topography	Elevated Terrain	
Machinery proposed	Jack hammer	1
	Excavator	1
	Compressor	1
	Tipper	4
Proposed Manpower Deployment	16 Nos	
Project Cost	Rs.1,96,20,000/-	
Proposed Water Requirement	3.0 KLD	

### 1.8 SCOPE OF THE STUDY

The main scope of the EIA study is to quantify the cumulative impact of the quarries in the cluster on the study area and formulate the effective mitigation measures for each individual lease. A detailed account of the emission sources, emissions control equipment, back ground air quality levels, meteorological measurements, dispersion model and all other aspects of pollution like effluent discharge, and dust generation has been provided in this report. The baseline monitoring study has been carried out during the period of **December-2023 through February-2024** for various environmental components such as land, soil, air, water, noise, ecology, etc. 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. The sampling methodologies for the various environmental parameters required for the study, frequency of sampling, method of sample analysis, etc., are given in Table 3.1 in chapter III.

## 1.9 Legislation Applicable to Mining of Mineral Sector

A few important legislations are given below:

- ❖ The Mines Act, 1952
- ❖ The Mines and Mineral (Development and Regulation) Act, 1957
- ❖ Mines Rules, 1955
- ❖ Mineral Concession Rules, 1960
- ❖ Mineral Conservation and Development Rules, 1988
- ❖ State Minor Mineral Concession Rules, 1960
- ❖ Granite Conservation and Development Rule, 1999
- ❖ The Water (Prevention and Control of pollution) Act, 1974
- ❖ The Air (Prevention and Control of pollution) Act, 1981
- ❖ The Environment (Protection) Act, 1986
- ❖ The Forest (Conservation) Act, 1988
- ❖ The Wildlife (Protection) Act, 1972

**Note:** *As per the OM vide F.No.J-11013/41/2006-IA-II(I)(Part), the baseline monitoring data were collected during the period of **December-2022 through February-2023** and utilized for preparation of this EIA report.*

## CHAPTER II

### PROJECT DESCRIPTION

#### 2.0 GENERAL INTRODUCTION

The open cast mining method, also known as open-pit mining has been proposed to extract the mineral deposit. It is the most commonly used surface mining method all over the world and is generally suitable for mining low-grade mineral deposits that are found close to the surface of the earth and distributed uniformly over a large area. Open pits are also termed quarries when the pits are used for the extraction of building materials and dimension stones.

Opencast mining starts with the development of benches, the widths of which will be determined in such a way to accommodate the use of heavy machinery. The walls of open pits will be dug at an angle that will be decided based on well-established industry standards to provide safety. In some cases where the walls are composed of weak material such as soil and highly weathered rocks, dewatering holes will be drilled horizontally to relieve the water pressure to avoid wall collapse inside the mine site.

The required mine-related infrastructures will be established close to the open pit. The mining infrastructures may include an administration building, a maintenance garage, and a warehouse. The materials mined from open pits will be brought to the surface using trucks. The waste rocks will be piled up in a suitable location, usually close to the open pit. The structure produced by the waste rock pile is known as a waste dump. The dimension of the waste dump will be determined based on industrial safety standards to prevent the rocks from falling into the surrounding area.

#### 2.1 DESCRIPTION OF THE PROJECT

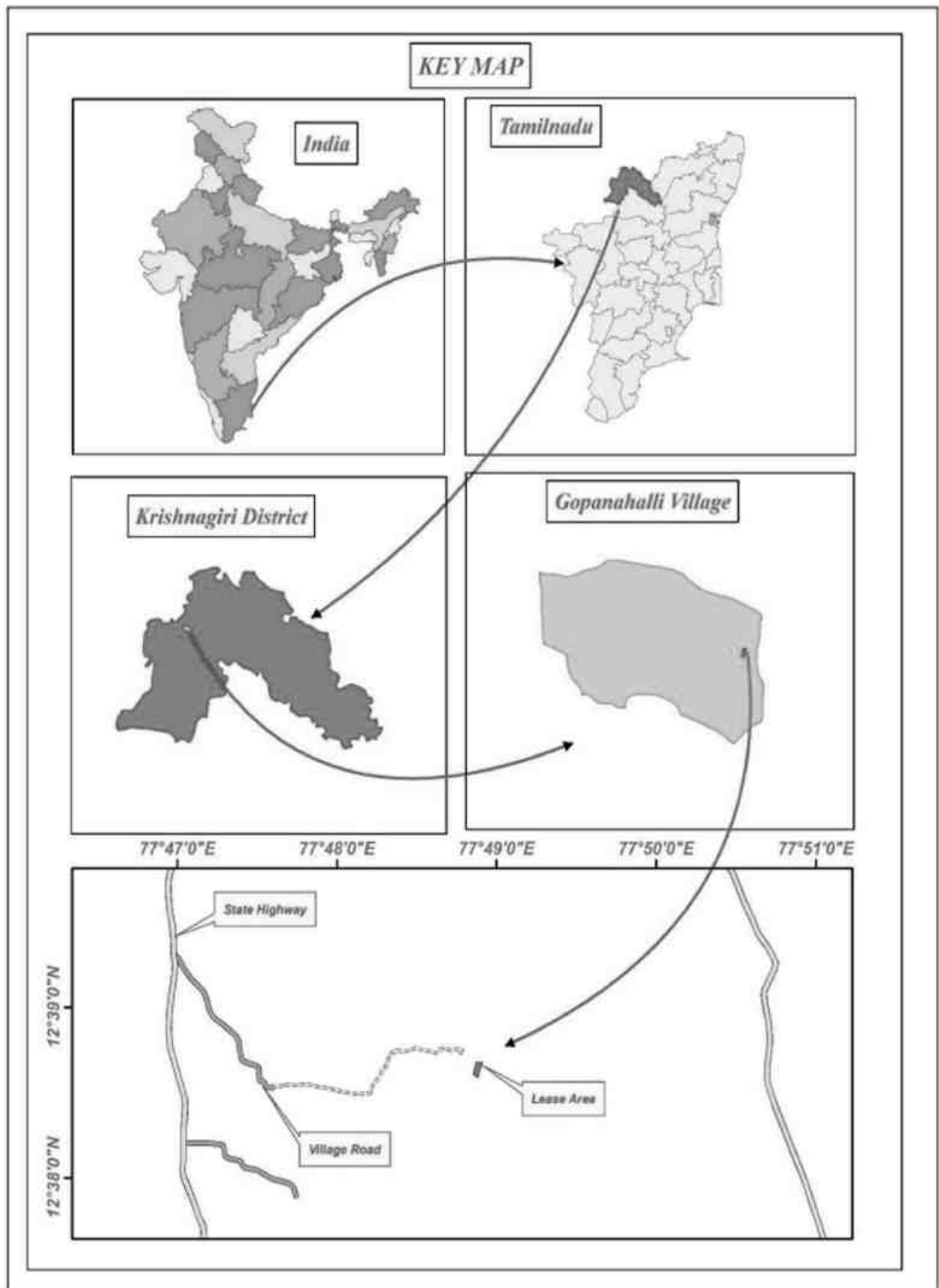
The proponent, **M/s.Victory Rocks** is involved in the undertaking of establishment, construction, development, and closure of opencast mines. He, through the exploration phase, identified the proposed project site as the one that has a great potential of producing an economically viable quantity of rough stone. Therefore, the proponent had applied for quarry lease on 07.02.2018 to extract rough stone. The precise area communication letter was issued by Department of Geology and Mining, Krishnagiri vide Rc.No.178/2018/Mines Dated 09.03.2018. Based on the precise area communication letter, mining plan was prepared. The mining plan thus prepared was approved by Deputy Director Department of Geology and Mining, Krishnagiri Rc.No.173/ 2018/Mines, Dated .23.10.2024. The overall view of the project site is shown in Figure 2.1.



**Figure 2.1 Overall View of Proposed Project Site**

## **2.2 LOCATION AND ACCESSIBILITY**

The proposed quarry project is located in Gopanapalli Village, Hosur Taluk, Krishnagiri District, as shown in Figure 2.2. The area lies between Latitudes from  $12^{\circ}38'34.51''\text{N}$  to  $12^{\circ}38'40.75''\text{N}$  and Longitudes from  $77^{\circ}48'51.48''\text{E}$  to  $77^{\circ}48'55.56''\text{E}$ . The maximum altitude of the project area is 896m AMSL. Accessibility details to the proposed project site have been given in Table 2.1.



**Figure 2.2 Site Connectivity Site**

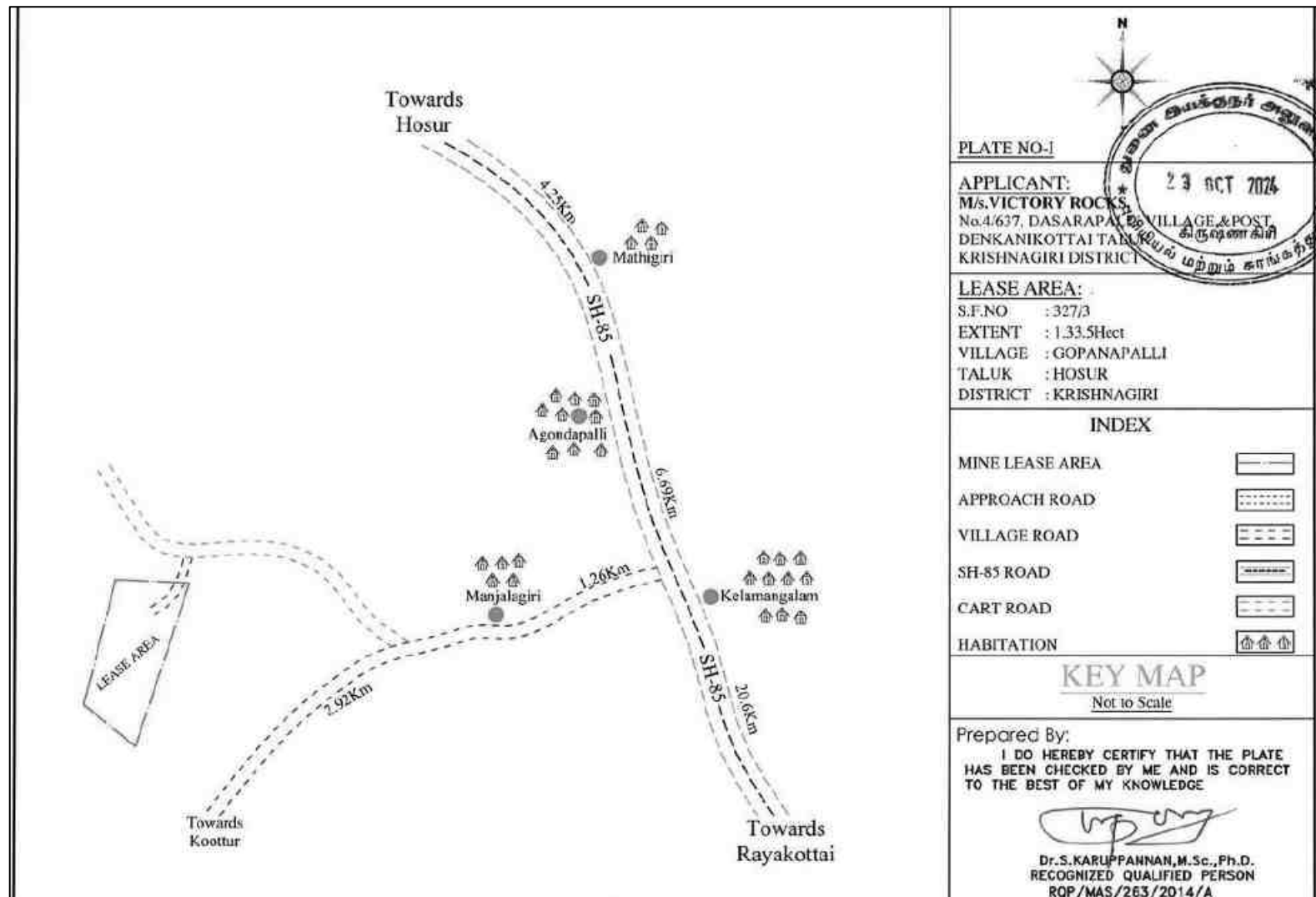


Figure 2.3 Key map showing location of the project site



**Table 2.1 Site Connectivity to the Project Area**

Type of Features	Name/Location	Distance (km)	Direction
Nearest Roadways	SH-85 Attibele - Royakottai	3.2 km	E
Nearest Railway	Kelamangalam	6.2 km	SE
Nearest Town	Mathigiri	5.6 km	N
Nearest Airport	Bangalore	43.7 km	NW
Nearest Seaport	Chennai	274.3 km	NE
Nearest Villages	Sudalam	1.9km	N
	Manchalagiri	2.1km	E
	Goolisandram	0.7km	SW
	Gopanapalli	2.0km	W

**2.3 LEASEHOLD AREA**

- ✚ The extent of the proposed project site is 1.33.50ha.
- ✚ The proposed project is site specific.
- ✚ There is no mineral beneficiation or processing proposed inside the project area.
- ✚ There is no forest land involved in the proposed area and is devoid of major vegetation and trees.

**2.3.1 Corner Coordinates**

The boundary corner geographic coordinates are given in Table 2.2 and the proposed project site with boundary coordinates has been shown in Figure 2.4.

**Table 2.2 Corner Coordinates of Proposed Project**

PILLAR ID	LATITUDE	LONGITUDE
1	12°38'40.60"N	77°48'55.56"E
2	12°38'34.51"N	77°48'53.43"E
3	12°38'36.08"N	77°48'51.48"E
4	12°38'40.57"N	77°48'52.73"E

**2.4 GEOLOGY**

The lease area geologically occurs over grey hornblende biotite gneiss, commercially called as rough stone. In addition, the lease area geomorphologically occurs over moderately dissected structural hills and valleys.

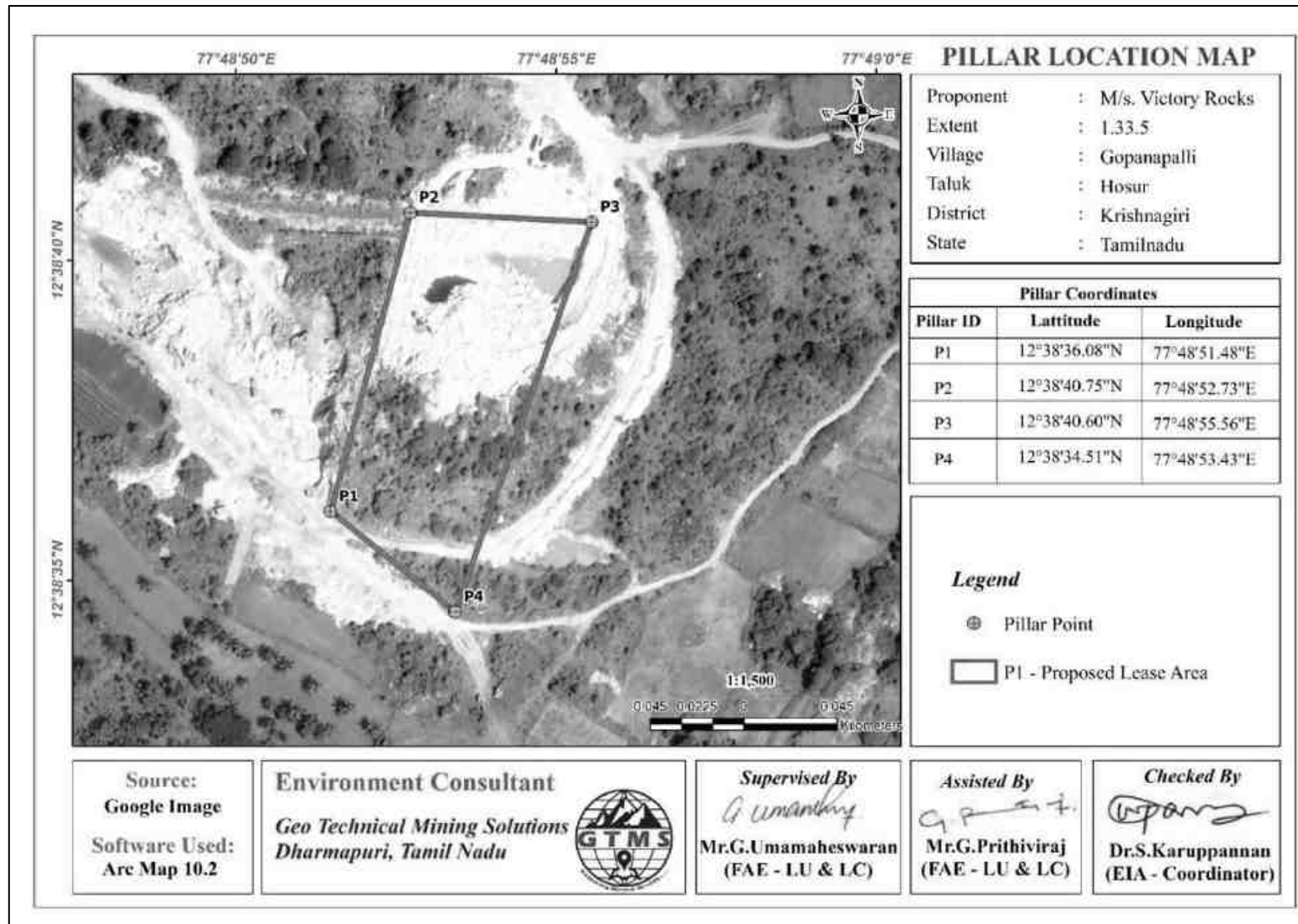


Figure 2.4 Google Earth Image Showing Pillar Coordinates of Lease Area

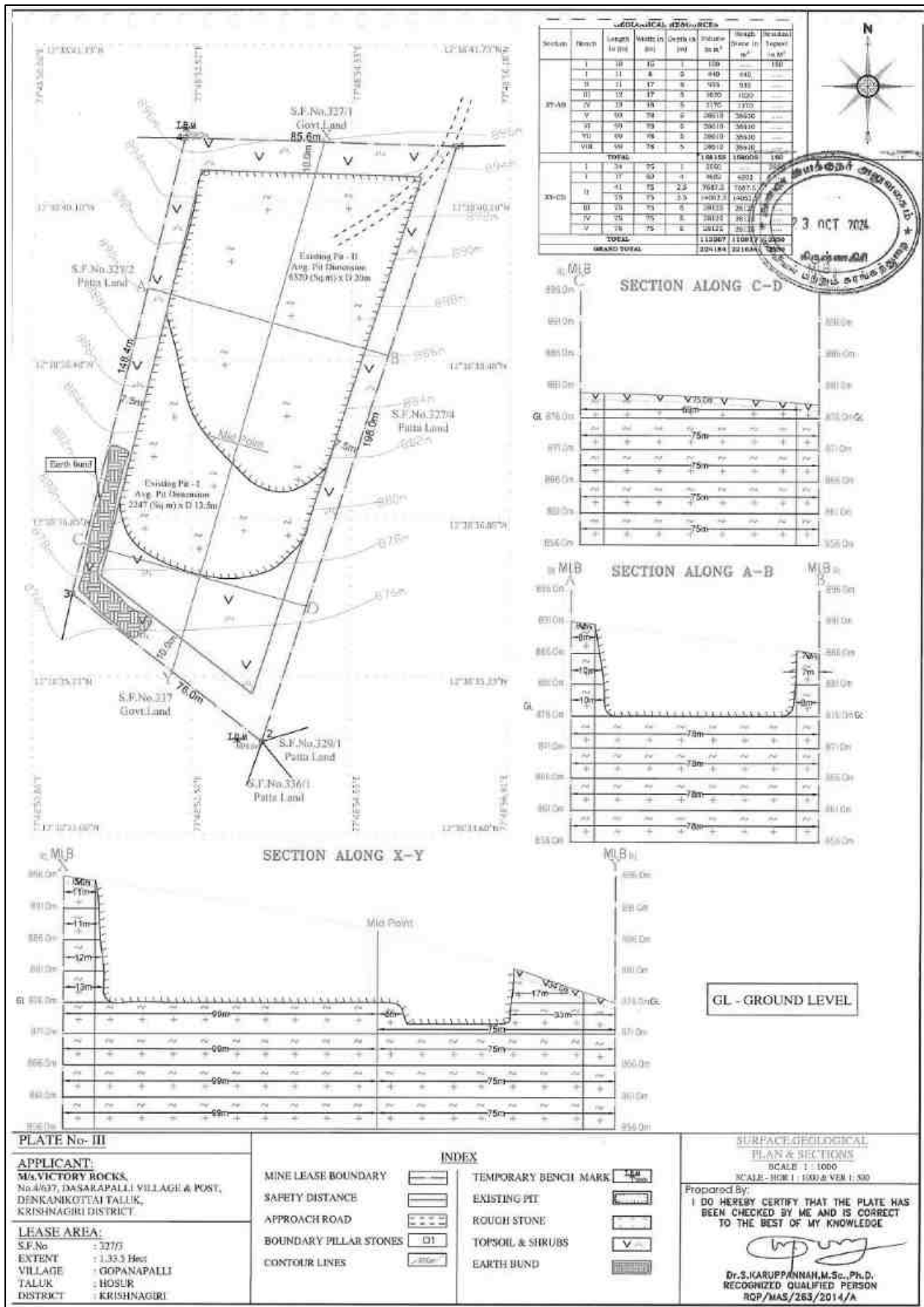


Figure 2.5 Surface and Geological Plan & Sections of Lease Area

## 2.5 QUANTITY OF RESERVES

The resources and reserves of rough stone were calculated based on cross-section method by plotting sections to cover the maximum lease area for the proposed project. Based on the availability of geological resources, the mineable reserves are calculated by considering excavation system of bench formation and leaving essential safety margins, as shown in Figure 2.5 and deducting the locked-up reserves during bench formation (also called as Bench Loss). The mineable reserves are calculated up to the depth of 40m (20m AGL + 20m BGL) considering there is no waste / overburden / side burden (100% Recovery anticipated) for the proposed project. The results of geological resources and reserves have been shown in Table 2.3.

**Table 2.3 Estimated Resources and Reserves of the Project**

Resource Type	Rough Stone in m <sup>3</sup>	Top Soil in m <sup>3</sup>
Geological Resource in m <sup>3</sup>	221634	2550
Mineable Reserves in m <sup>3</sup>	74553	1403
Proposed production for 6 years m <sup>3</sup>	74553	1403

Based on the year wise development and production plan and sections, as exemplified in Figures 2.7, the year wise production results have been provided in Table 2.4.

**Table 2.4 Year-Wise Production Details**

Year	Rough Stone (m <sup>3</sup> )	Top Soil (m <sup>3</sup> )
I	15113	1403
II	14835	--
III	10560	--
IV	11275	--
V	11430	--
VI	11340	--
<b>Total</b>	<b>74553</b>	<b>1403</b>

*Source: Approved Mining Plan & ToR*

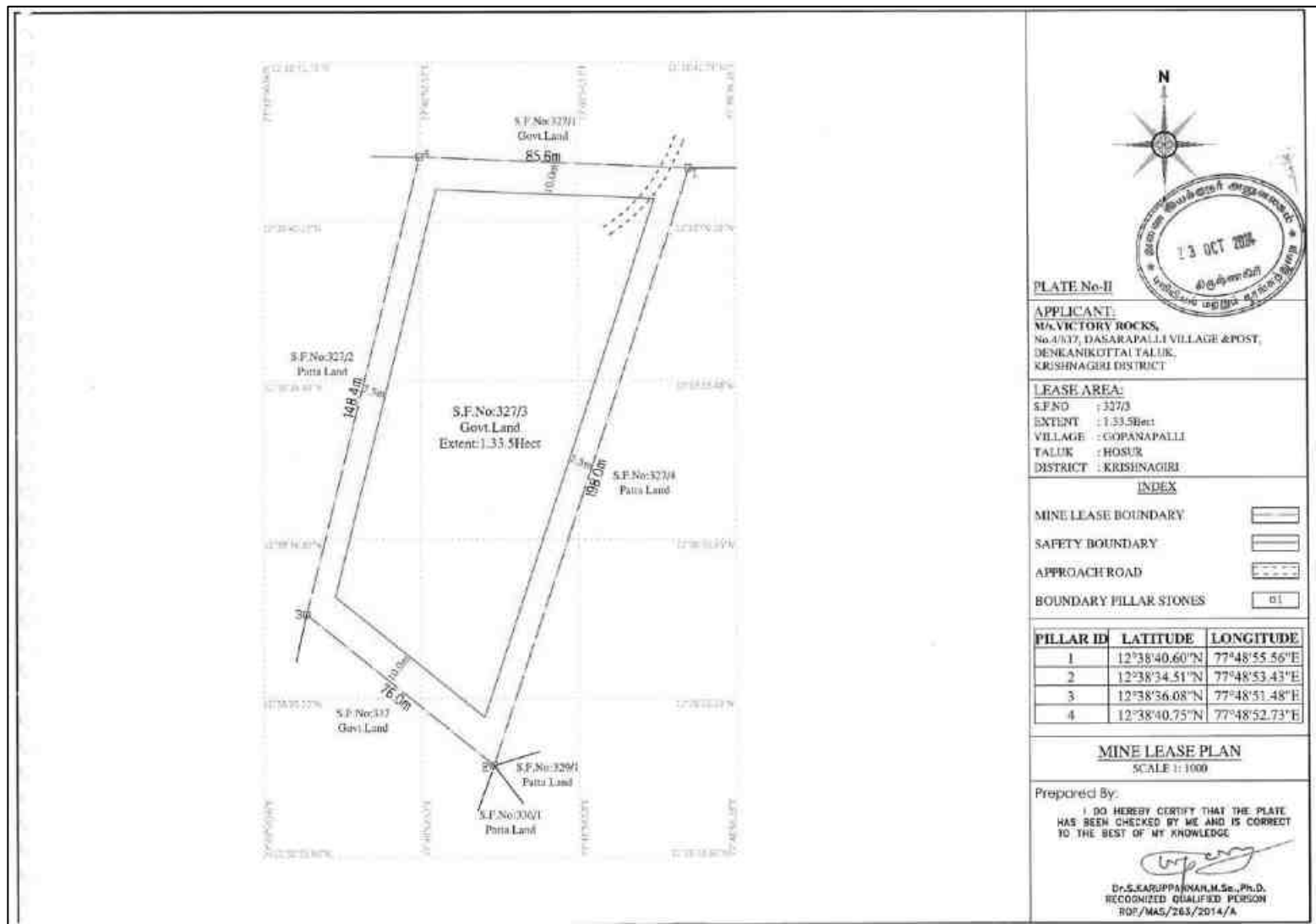
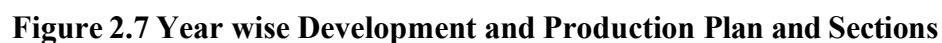


Figure 2.6 Mine Lease Plan



## **2.6 MINING METHOD**

The Quarrying operation is proposed to be carried out by open cast semi-mechanized mining method with the bench height and width of 5m each. The open cast semi-mechanized method involving drilling and blasting is proposed to extract rough stone. The extracted rough stone will be loaded manually to the trucks for dispatch to the customers. In this project, NONEL blasting will be adopted to extract rough stone.

### **2.6.1 Conceptual Blasting Design**

In this project, NONEL blasting will be employed to win rough stone. This method will involve closed spaced perimeter holes to reduce the overbreak/backbreak on a blast. The objective of the blasting design is to prevent fly rocks from damaging the nearby structures.

#### **Rules of Thumb for Blast Design**

Based on practical experience and technical information, a set of rules for blasting have been provided as below ([Chapter8 \(nps.gov\)](#)). These rules will be applied to blast rocks in the proposed project.

**Rule 1: The detonation velocity (VOD) of the explosive should be close to the same value of the sonic velocity (VSO) of the rock to be blasted.**

The sonic velocity of a rock is considered to be a reliable indicator of its structural integrity and resistance to fragmentation. As the VOD of the explosive approaches close to the VSO of the rock, the blasting would result in relatively smaller size of fragmentation with uniformity. There is no value in using an explosive that has a VOD greatly in excess of the VSO of the rock, since there is little or no improvement in fragmentation above the VSO. When selecting an explosive to match up the VSO of a rock mass, variance of <10% in the velocities is acceptable.

**Rule 2: Generally, select the densest explosive possible.**

When the density of explosives is higher, the potential energy of the explosives can be greater and the more of it can be placed within a borehole of a given size.

**Rule 3: Select explosives according to the characteristics of the rock formation to be blasted.**

When planes of separation in the rock are smaller than the degree of fragmentation required, the rock can often be blasted by using lower density and lower detonation velocity explosives.

**Rule 4: When using slurry or water gel explosives, always determine the critical**

**temperature below which the explosive will fail to reliably detonate.**

Almost all slurry explosives have a critical temperature below which they may not detonate, or may not sustain detonation in elongated columns. The explosives should not be used when the temperature of the explosive at time of loading is below that critical temperature.

**Rule 5: The distance between holes (spacing) should not be greater than one-half the depth of the borehole.**

When the distance between holes in a row is greater than one-half the depth of the hole, the angles of breakage intersect above the bottom of the holes. This causes both a great deal of vertical throw and a very uneven bottom.

**Rule 6: Stemming should be equal to the burden.**

Stemming is useful to confine and maximize efficient use of the explosive's energy. It also reduces noise as much as possible. If the stemming is greater than the burden, the rock at the top of the borehole will have less cracking from reflection and refraction of compressive and tensile waves. Therefore, stemming should be equal to burden. Drill fines can be used for loading the borehole.

**Rule 7: Subdrill (if necessary) should be between 0.3 and 0.5 of spacing/burden.**

Subdrill should be equal to 0.3 of burden. It will work when there is row-for-row delay. In blasts where the delay system is both row-for-row and hole-for-hole, the subdrill should be determined by the largest dimension, which can be the spacing or the burden. An average subdrill of 0.4 of spacing is best to use for planning purposes. Based on the above-mentioned rules, blasting design has been conceptualized and has been provided in Table 2.5.

**Table 2.5 Conceptual Blasting Design**

<b>BLAST DESIGN</b>	
Blasthole Diameter (D) in mm	32
Burden (B) in m	1.2
Spacing (S) in m	1.38
Subdrill in m	0.5
Charge length (C) in m	0.70
Stemming	0.5
Hole Length (L) in m	1.2
Bench Height (BH) in m	2.5
Mass of explosive/hole in g	437.5



Stemming material size in mm	3.2
Burden stiffness ratio	2.08
Blast volume/hole in m <sup>3</sup>	4.14
Production of rough stone/day in m <sup>3</sup>	53
Number of blast holes/day	13
Number of blast round/day	1
Blasthole pattern	Staggered / Rectangular
Mass of explosive /day in kg	5.63
Powder factor in kg/m <sup>3</sup>	0.11
Loading density	0.63
Type of explosives	Slurry
Diameter of packing in mm	25
Initiation system	NONEL

### 2.6.2 Magnitude of Operation

Based on the results of estimated production for the 6 years, details about the size of operation have been provided in Table 2.6.

**Table 2.6 Operational Details for Proposed Project**

	<b>Rough Stone / 6 years</b>
Proposed production	74553
Number of Working Days	270
Production /Day (m <sup>3</sup> )	46
No. of Lorry Loads	8

### 2.6.3 Extent of Mechanization

List of machineries proposed for the quarrying operation is given in Table 2.7.

**Table 2.7 Machinery Details**

S. No.	Type	No. of Unit	Size/Capacity	Make/Dia of Hole (mm)	Motive Power/ H.P
1	Jack Hammers	1	Hand Held	32 mm	Diesel
2	Compressor	1	AIR	---	Diesel
3	Excavator	1	2.9 – 4.5m <sup>3</sup>	---	Diesel
<b>Haulage &amp; Transport Equipment</b>					
4	Tipper	4	15 M.T	---	Diesel

### 2.6.4 Progressive Quarry Closure Plan

The progressive quarry closure plan of the proposed project shows past, present, and future land use statistics. According to the land use results, as shown in Table 2.8 At Present about 0.85.67ha of land is unutilized, Whereas, at the end of the mine life, about 0.63.10ha of land is used for area under mining about 0.49.50ha of land is used for green

belt and 0.04.0ha will be used for roads and 0.03.0ha is used for infrastructure.

**Table 2.8 Land Use Data at Present, During Scheme of Mining, and at the end of Mine Life**

<b>Description</b>	<b>Present Area (ha)</b>	<b>Area at the end of life of quarry (ha)</b>
Area under Mining	0.85.67	0.63.10
Infrastructure	Nil	0.03.0
Roads	0.02.0	0.04.0
Unutilized	0.45.83	0.13.90
Green belt	Nil	0.49.50
Settling Tank & Drainage	Nil	Nil
<b>Total</b>	<b>1.33.50</b>	<b>1.33.50</b>

### 2.6.5 Mine Closure

As the proposed project has the enormous potential for continuous operations even after the expiry of lease period, final mine closure plan is not proposed for now. Based on the environment management plan as discussed in Chapter X, the mine closure cost is given in Table 2.9.

**Table 2.9 Mine Closure Budget**

<b>Activity</b>	<b>Capital Cost</b>
267 Plants Inside the Lease Area	53400
401 Plants Outside the Lease Area	120300
Wire Fencing	267000
Garland Drain	13350
<b>Total</b>	<b>454050</b>

*Source: Environment Management Plan*

### 2.6.6 Conceptual Mining Plan

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc. The ultimate pit dimension derived from Figures 2.9 is provided in Table 2.10.

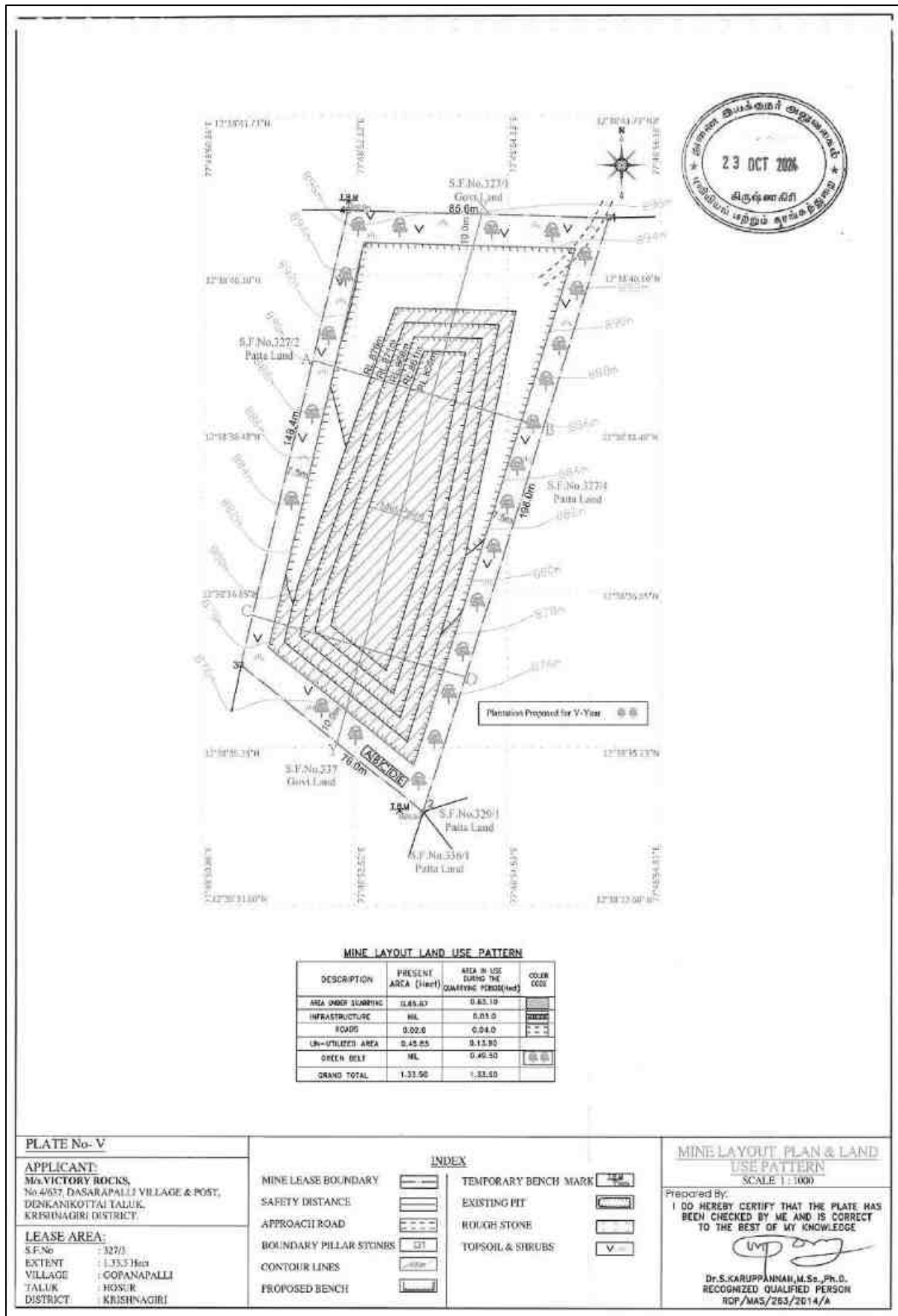
**Table 2.10 Ultimate Pit Dimension**

<b>Pit</b>	<b>Length (m)</b>	<b>Width (m)</b>	<b>Depth (m)</b>
I	69	43	40

*Source: Approved Mining Plan & ToR*

### 2.6.7 Infrastructures

Infrastructures like mines office, temporary rest shelters for workers, latrine and urinal facilities have been proposed as per the mine rule and will be established after the grant of quarry lease. There is no proposal for the mineral processing or ore beneficiation plants in this project.



**Figure 2.8 Mine Layout Plan and Land Use Pattern**

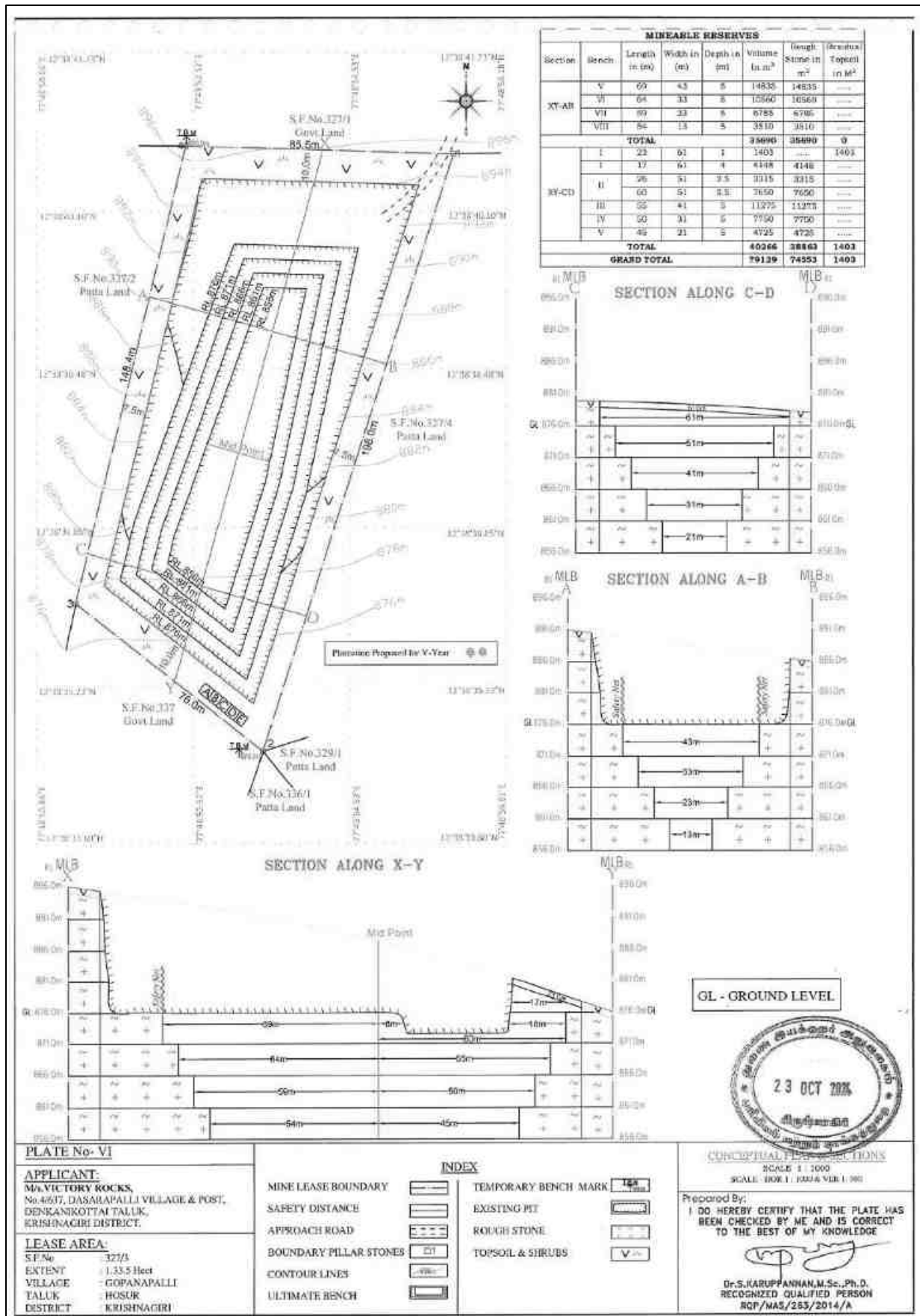


Figure 2.9 Conceptual Plan and sections

### ***Other Infrastructure Requirement***

No workshops are proposed inside the project area. Hence, there will not be any process effluent generation from the proposed lease area. Domestic effluent from the mine office will be discharged to septic tank and soak pit. As there is no toxic effluent expected to generate in the form of solid, liquid or gaseous form, there is no requirement of waste treatment plant.

### **2.6.8 Water Requirement**

Details of water requirement in 3.0 KLD is given in Table 2.11.

**Table 2.11 Water Requirement for the Project**

Purpose	Quantity	Source
Dust Suppression	0.5 KLD	Existing bore wells nearby the lease area
Green Belt development	1.0 KLD	Existing bore wells nearby the lease area
Drinking & Domestic	1.5 KLD	Existing bore wells and approved water vendors
<b>Total</b>	<b>3.0 KLD</b>	

*Source: Prefeasibility Report*

### **2.6.9 Energy Requirement**

High speed Diesel (HSD) will be used for quarrying machineries. As per the data shown in Table 2.12, Around 315406 litres of HSD will be used for rough stone extraction during this 6 years plan period. The diesel will be brought to the site from nearby diesel pumps.

**Table 2.12 Fuel Requirement Details**

<b>Fuel Requirement for Excavator</b>			
Details	Rough Stone (74553m <sup>3</sup> )	Top Soil (1403m <sup>3</sup> )	Total Diesel (litre)
Average Rate of Fuel Consumption (l/hr)	16	10	---
Working Capacity (m <sup>3</sup> /hr)	20	60	---
Time Required (hours)	3728	23	---
Total Diesel Consumption for 5 years (litre)	59642	234	59876
<b>Fuel Requirement for Compressor</b>			
Average Rate of Fuel Consumption/hole (litre)	0.4	---	---
Number of Drillholes/day	13	---	---
Total Diesel Consumption for 5 years (litre)	7020	---	7020
<b>Fuel Requirement for Tipper</b>			
Average Rate of Fuel Consumption/Trip (litre)	20	10	---
Carrying Capacity in m <sup>3</sup>	6	6	---
Number of Trips / days	9	0	---
Number of Trips / 5 years	12426	0	---
Total Diesel Consumption for 5 years (litre)	248510	0	248510
<b>Total Diesel Consumption by Excavator, Compressor and Tipper</b>			<b>315406</b>

### 2.6.10 Capital Requirement

The project proponent will invest **Rs.1,96,20,000/-** to the project. The breakup summary of the investment has been given in Table 2.13.

**Table 2.13 Capital Requirement Details**

S. No.	Description	Cost (Rs.)
1	Fixed Asset	1,52,35,000/-
2	Machinery	25,00,000/-
3	EMP	18,85,000/-
<b>Total Project Cost</b>		<b>1,96,20,000/-</b>

*Source: Approved Mining Plan*

### 2.6.11 Manpower Requirement

The skilled, competent qualified statutory persons will be engaged for quarrying operation, preference will be given to the local community. Number of employees required for this project have been provided in Table 2.14.

**Table 2.14 Employment Potential for the Proposed Project**

S. No.	Category	Role	Nos.
1	Highly Skilled	Mines Manager	1
		Mine Engineer	1
		Mine geologist	1
		Blaster	1
2	Unskilled	Musdoor/ Labours	12
<b>Total</b>			<b>16</b>

*Source: Prefeasibility Report*

## 2.7 PROJECT IMPLEMENTATION SCHEDULE

The commercial operation will commence after the grant of Environmental Clearance. CTO and CTE will be obtained from the Tamil Nadu State Pollution Control Board. The conditions imposed during the environmental clearance will be compiled before the start of mining operation. Expected time schedule for the quarrying operation is given Table 2.15.

**Table 2.15 Expected Time Schedule**

S. No.	Particulars	Time Schedule (in Months)					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 Establish						Project Establishment Period
3	Consent to operate						Production starting period.
Time line may vary; subjected to rules and regulations /& other unforeseen circumstances							

*Source: Anticipated based on Timelines framed in EIA Notification & CPCB Guideline*

## CHAPTER III

### DESCRIPTION OF THE ENVIRONMENT

#### 3.0 GENERAL

This chapter presents a regional background to the baseline data at the very onset, which will help in better appreciation of micro-level field data, generated on several environmental and ecological attributes of the study area. The baseline status of the project environment is described section wise for better understanding of the broad-spectrum conditions. 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. The environmental consultant for both the clusters are the same. The monitoring of ambient air quality, noise levels, water quality and soil analysis for the nearby cluster were done in winter from **December-2022 through February-2023** through the third party NABL accredited **Enviro Farmers labs & Technologies laboratory**. The baseline monitoring done for 5km radius (TERMS OF REFERENCE [TOR] FOR EIA REPORT FOR ACTIVITIES / PROJECTS REQUIRING ENVIRONMENTAL CLEARANCE) Prepared by Administrative Staff College of India, Bellavista, Khairatabad, AUGUST 2009, Page No.86) not varied as much. Therefore, we utilize the baseline data for this cluster which is collected for the adjacent cluster in the year between December 2022 to February 2023 as per the Office Memorandum F. No. IA3-22/10/2022-IA.III [E 177258] issued by Government of India Ministry of Environment, Forest and Climate Change (IA Division) dated 8th June 2022. We also collected the baseline data in one location i.e, in the core for the present cluster in the post monsoon season December-2023 through February-2024 for cross verification. Field monitoring studies to evaluate the base line status of the project site were carried out covering **December-2023 through February-2024**, with CPCB guidelines. Environmental baseline data were collected by an NABL accredited and MoEF notified **Ekdant Enviro Services pvt.ltd** for the environmental attributes including soil, water, air, and noise and by FAEs for ecology and biodiversity, traffic, and socio-economy.

#### *Study Area*

The study area has been divided into two zones: core zone and buffer zone. Core zone is considered as lease area and buffer zone as 5 km radius from the periphery of the cluster, except for ecological study, which considers 10 km as buffer zone. Both core and buffer zones are taken as the study area. The data was collected from the study area to understand the existing environment conditions of the above-mentioned environmental components. Sampling methodologies for the various environmental parameters, including frequency of sampling, method of sample analysis, etc., are briefly given in Table 3.1.

**Table 3.1 Monitoring Attributes and Frequency of Monitoring**

<b>Attribute</b>	<b>Parameters</b>	<b>Frequency of Monitoring</b>	<b>No. of Locations</b>	<b>Protocol</b>
Land Use/ Land Cover	Land-use Pattern within 5 km radius of the study area	Once during the study period	Study Area	Satellite Imagery & Primary Survey
*Soil	Physico-Chemical characteristics	Once during the study period	8 (1 in core & 7 in 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	7 (2 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/automatic weather station	1	Site specific primary data & secondary data from IMD Station
*Ambient Air Quality	PM10 PM2.5 SO2 NOX Fugitive dust	24 hours, twice a week	7 (1 core & 6 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient noise	Hourly observation for 24 hours per location	8 (1 core & 7 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.

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

### **3.1 LAND ENVIRONMENT**

#### **3.1.1 Geology and Geomorphology**

Study area is mainly composed of grey hornblende biotite gneiss, as shown in Figure 3.1. The lease area occurs in hornblende biotite gneiss terrain. Among the geomorphic units,



Moderately Dissected Structural Hills and Valleys dominate the study area, as shown in Figure 3.2.

### 3.1.2 Land Use/ Land Cover

Land Use and Land Cover (LULC) map, as shown in Figure 3.3 was prepared using Sentinel II image for the study area of 5 km radius to provide a baseline status of the study area covering 5 km radius around the proposed mine site. Totally, 8 LULCs were mapped. The areal extent of each LULC is provided in Table 3.2. Of the total area, mining area covers only 83.95ha accounting for 1.08%, of which lease area of 1.33.5 ha contributes only about 0.017 %. This small percentage of mining activities shall not have any significant impact on the land environment.

**Table 3.2 LULC Statistics of the Study Area**

S. No.	Classification	Area (ha)	Area (%)
1	Crop land	5361.77	69.15
2	Dense forest	2.21	0.03
3	Dense grassland/grazing land	234.74	3.03
4	Fallow land	61.38	0.79
5	Mining/industrial area	83.95	1.08
6	Land with or without area	1067.76	13.77
7	Plantations	831.73	10.73
8	Water bodies	110.52	1.43
<b>Total</b>		<b>7754.07</b>	<b>100.0</b>

*Source: Sentinel II Satellite Imagery*

### 3.1.3 Topography

The proposed lease area is located in a hilly terrain with an altitude range of 876m to 897m AMSL, showing relief of 21 m.

### 3.1.4 Drainage Pattern

Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin over time that reveals characteristics of the kind of rocks and geological structures in a landscape. The proposed area shows dendritic drainage pattern indicating uniform lithology beneath the surface, as shown in Figure 3.4.

### 3.1.5 Seismic Sensitivity

The proposed lease area is situated in a Seismic Zone II, as defined by National Center for Seismology ([Official Website of National Centre of Seismology](#)). The Zone II is defined as the region where only minor damage is expected from seismic events. In this respect, the proposed lease area is located in a low earthquake hazard area.

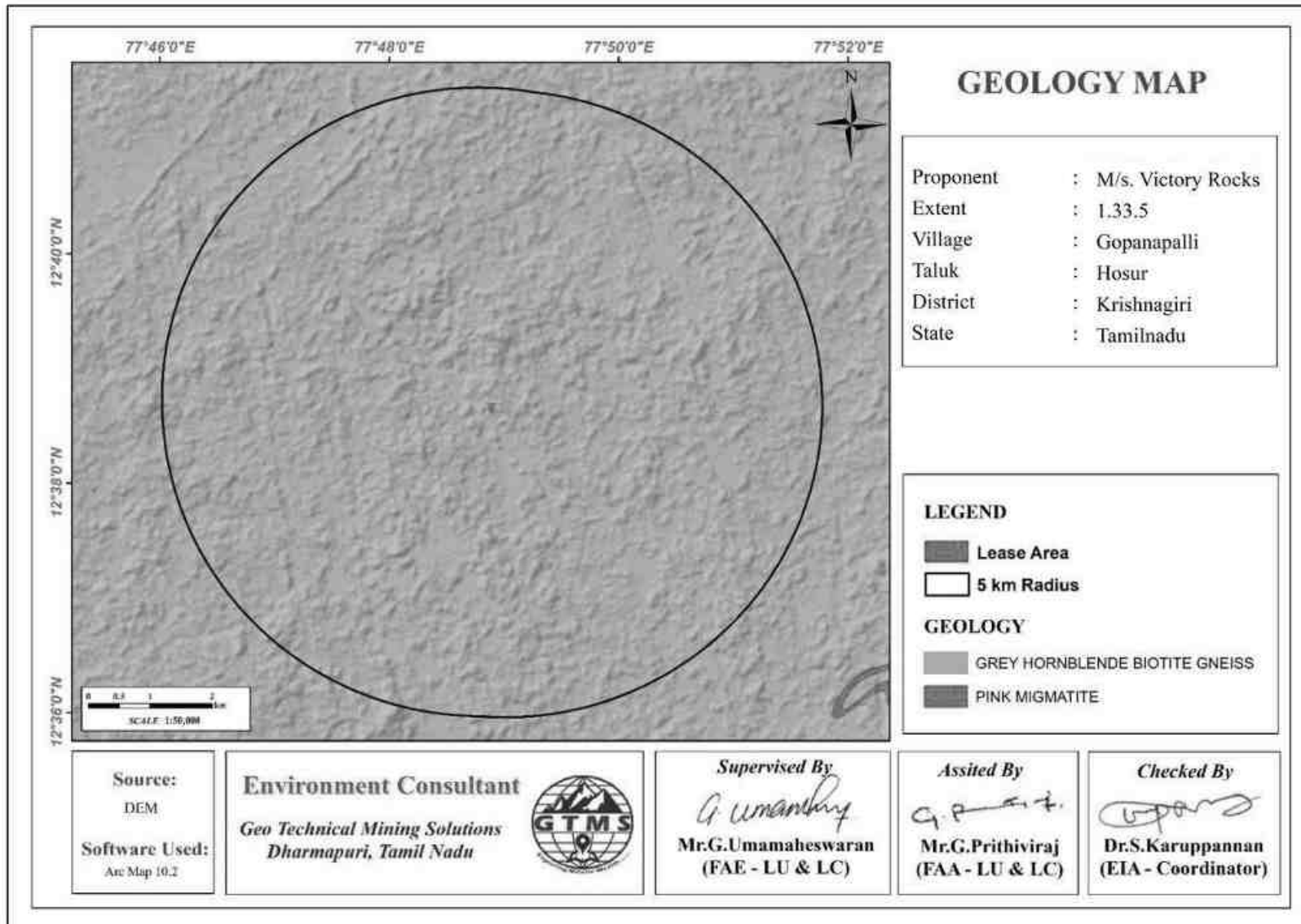


Figure 3.1 Geology Map of 5 km Radius from Proposed Project Site

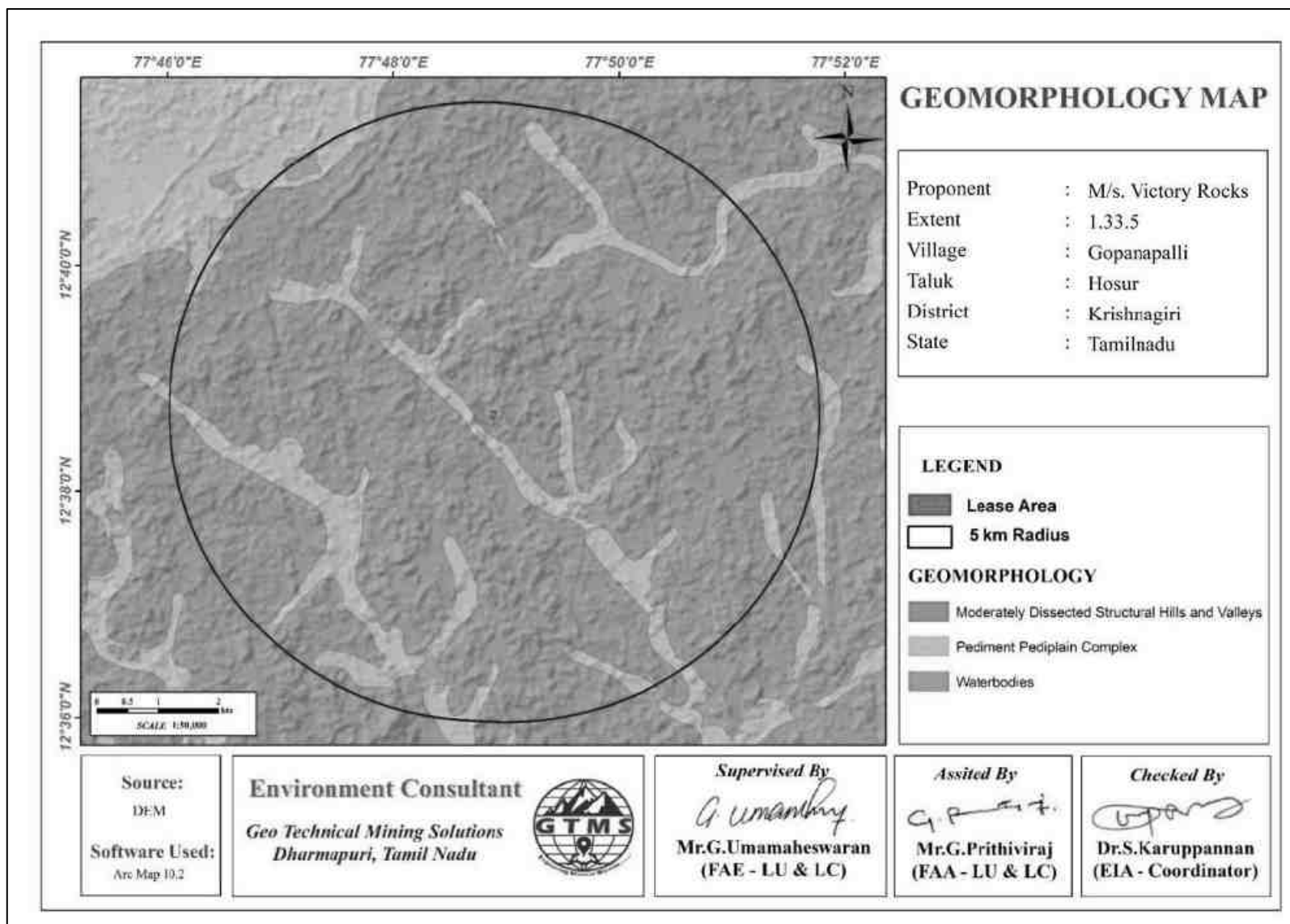
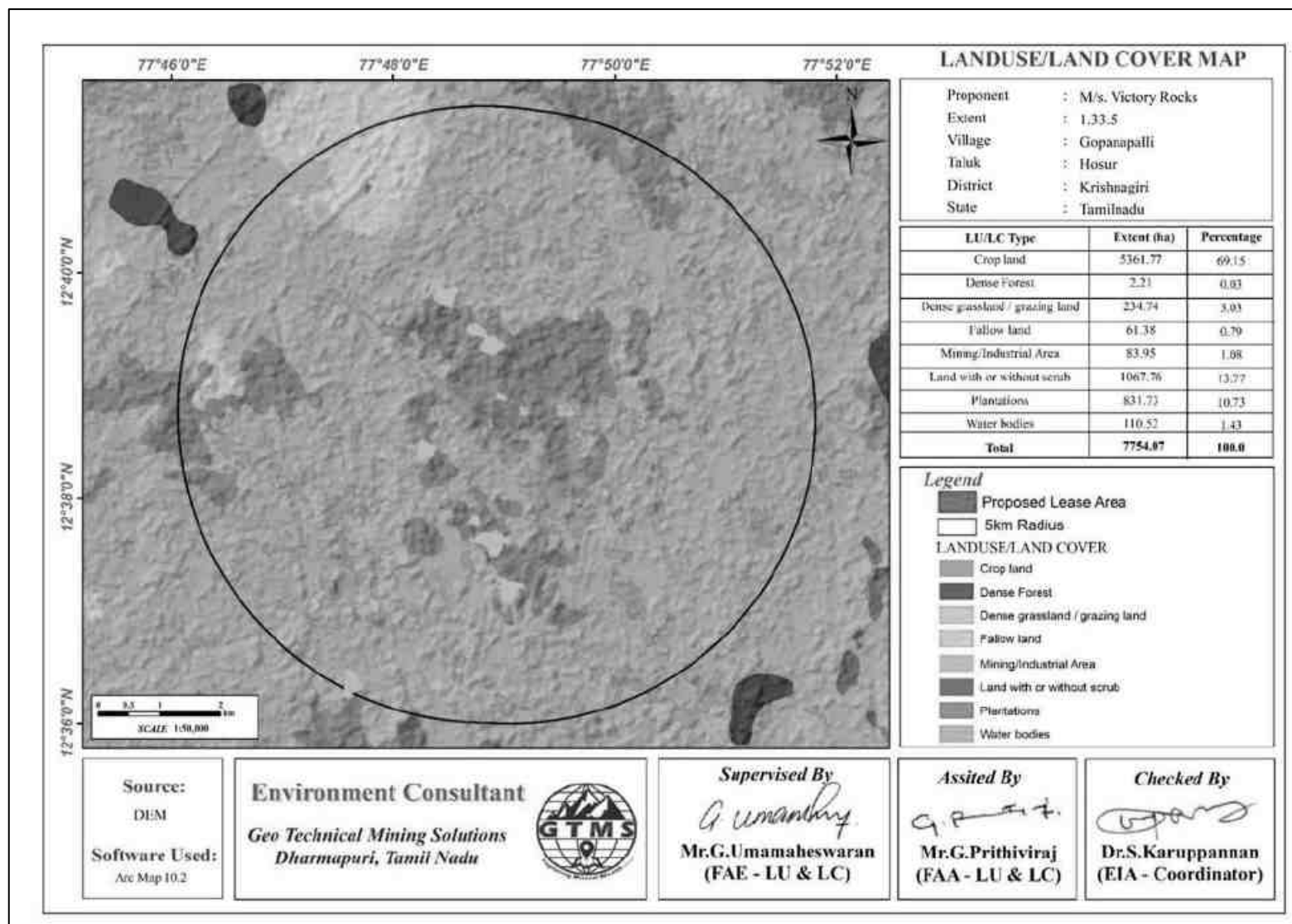
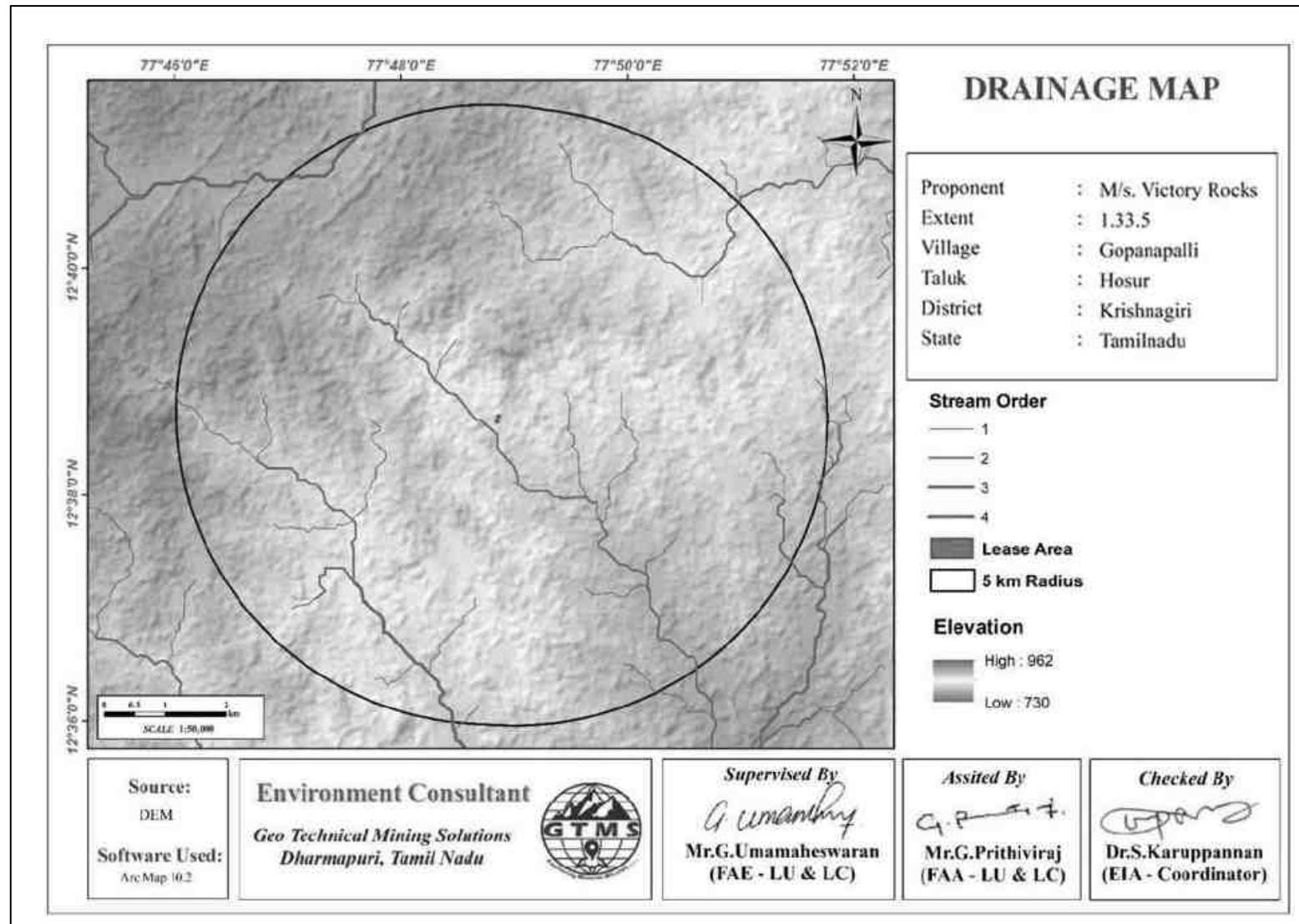


Figure 3.2 Geomorphology Map of 5 km Radius from Proposed Project Site



**Figure 3.3 LULC Map of 5 km Radius from Proposed Project Site**



**Figure 3.4 Drainage Map of 5 km Radius from Proposed Project Site**

### 3.1.6 Soil Environment

Composite soil samples were collected from 8 locations of the study area to determine the baseline soil characteristics of the soil. The locations were selected for soil sampling based on soil types, vegetative cover, and industrial & residential activities including infrastructure facilities. Soil samples were collected up to 90 cm depth, filled in polythene bags, coded and sent to laboratory for analysis. The locations of the sampling sites are shown in Table 3.3 and Figure 3.5. The samples thus collected were analyzed for physical and chemical characteristics. The physical and chemical characteristic results of soil samples are provided in Table 3.4.

**Table 3.3 Soil Sampling Locations**

Sampling ID	Location	Distance (km)	Direction	Coordinates
S1	Vijayakumar Lease	1.25	S	12°37'51.39"N 77°48'44.02"E
S2	Mugalur	2.10	SW	12°37'52.02"N 77°47'51.06"E
S3	Machnayakanpalli	4.21	SW	12°36'32.33"N 77°47'16.65"E
S4	Edapalli	2.93	N	12°40'9.51"N 77°49'13.29"E
S5	Sankaranarayanapuram	4.12	SSE	12°37'48.97"N 77°51'7.83"E
S6	Kelamangalam	5.45	SSE	12°35'56.53"N 77°50'34.16"E
S7	Core zone	---	---	12°38'35.64"N 77°48'53.33"E
S8	Vijay lease area	0.12	N	12°38'42.31"N 77°48'53.76"E

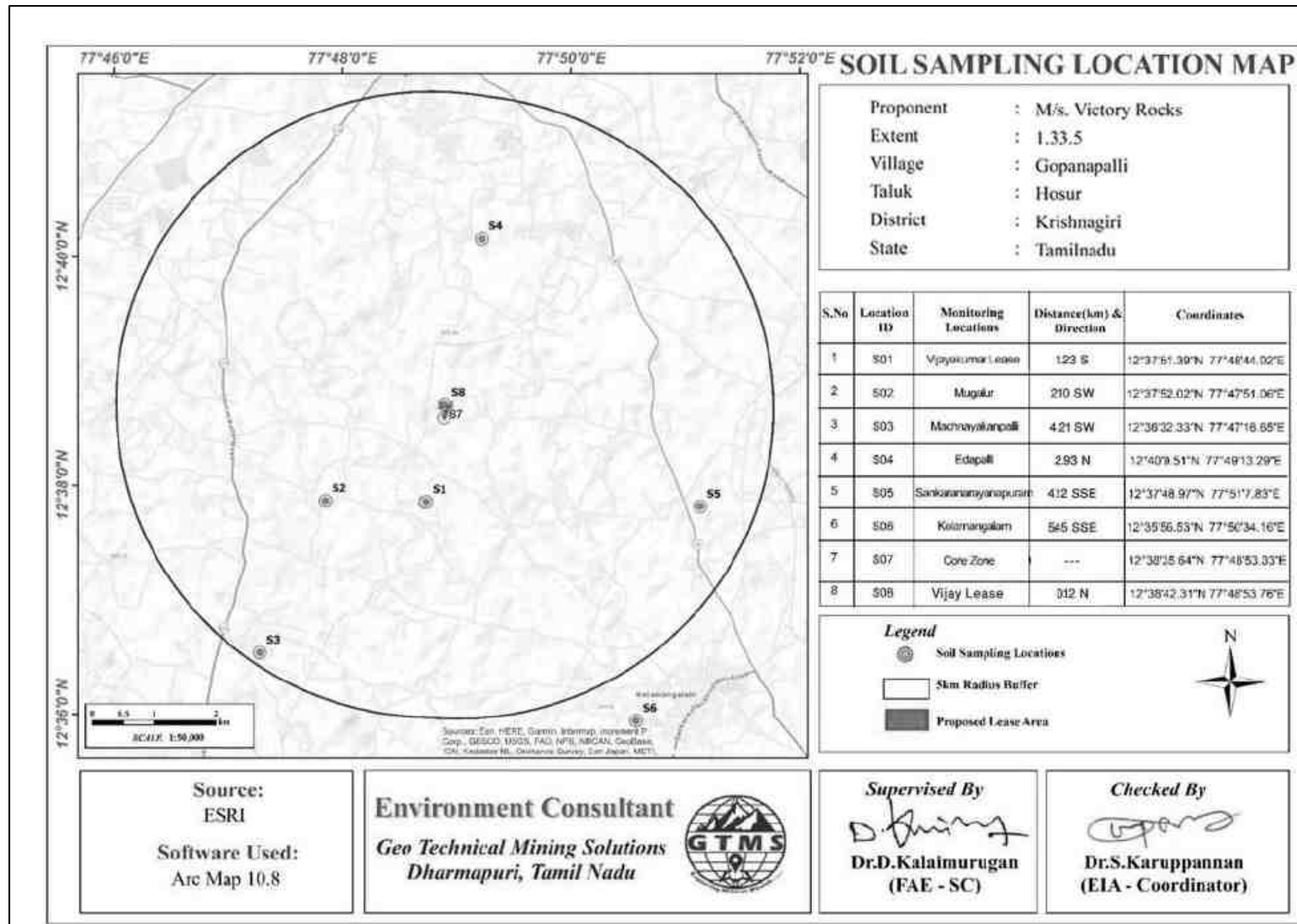
*Source: Sampling Results by Enviro Farmers labs & Technologies and Ekdant enviro services (p) limited in Association with GTMS.*

### Physical Characteristics

The soil samples in the study area show loamy textures varying between silty clay loam, silty loam and sandy loam. pH of the soil varies from 6.93 to 8.22 indicating slightly acidic to slightly alkaline nature. Electrical conductivity of the soil varies from 2.93 to 3.65 dsm<sup>-1</sup>. Bulk density ranges between 0.79 and 0.92 g/cm<sup>3</sup>. There is low moderate soil erosion south west of the lease area figure showing in 3.6

### Chemical Characteristics

Nitrogen ranges between 1.27 and 1.63 %. Phosphate ranges between 0.88 and 2.22 %. Potassium ranges between 2.23 and 4.27 %. Boron ranges between 13.58 and 19.81 mg/kg. Zinc content ranges between 13.58 and 19.81 mg/kg soil.



**Figure 3.5 Map Showing Soil Sampling Locations within 5 km Radius around Proposed Project Site**

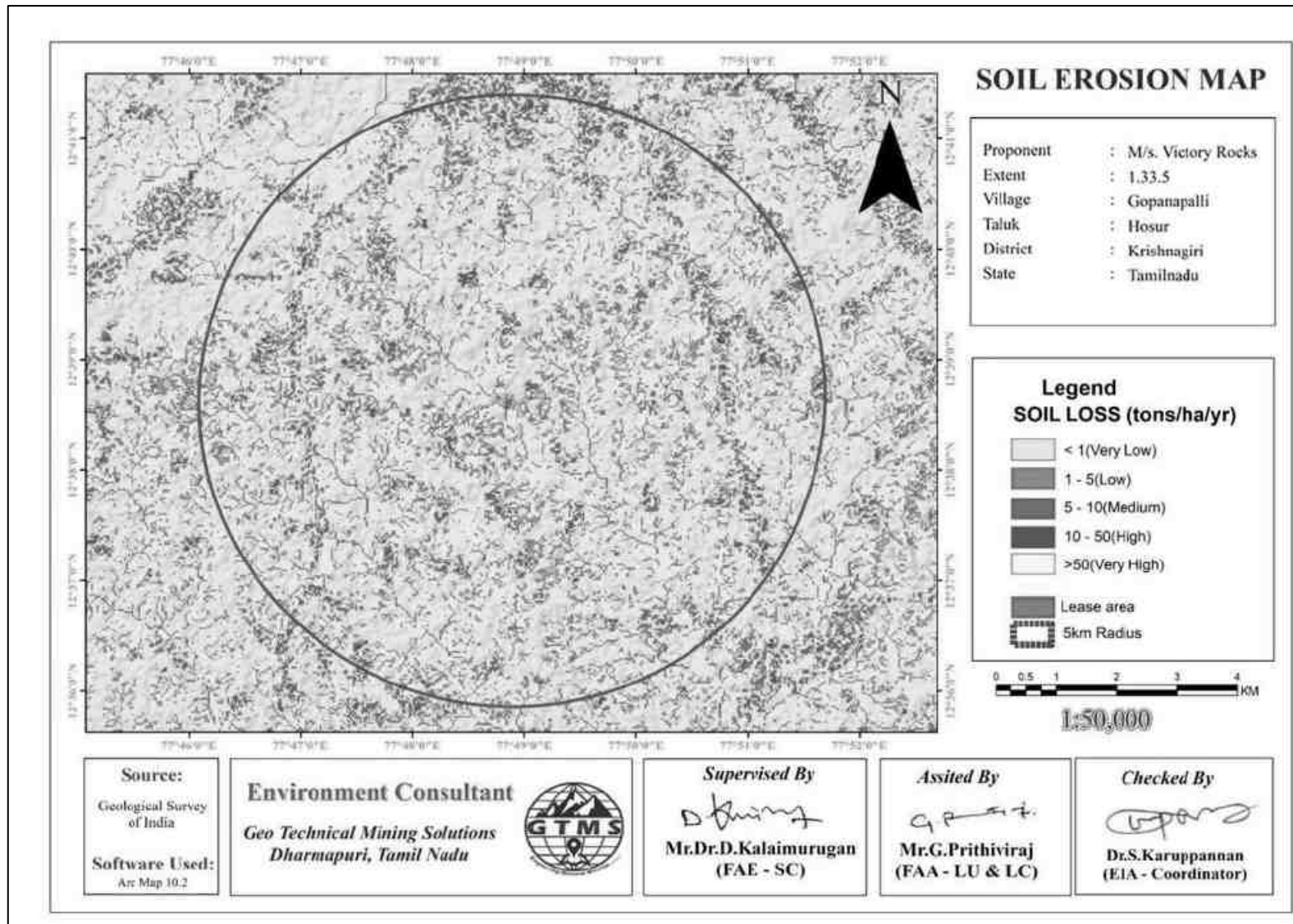


Figure 3.6 Soil Erosion Map within 5 km Radius around Proposed Project Site



**Table 3.4 Soil Quality of the Study Area**

S. No	Parameters	Unit	Vijay lease	Core zone	S.No	Parameters	Unit	Minimum	Maximum	Average
1	Organic matter	mg/kg	8.1	8.0	1	Colour	-	Brown	Brown	Pale Grey
2	pH value @ 25°C	mg/kg	6.62	6.60	2	Odour	-	Characteristic Plant Constituents	Characteristic Plant Constituents	Characteristic Plant Constituents
3	EC @ 25°C	mg/kg	222	223	3	Moisture@105 <sup>0</sup> C	%	16.84	21.54	18.72
4	Water content	mg/kg	7.72	7.70	4	Bulk Density	g/cm <sup>3</sup>	0.79	0.92	0.87
5	Nitrogen (N)	mg/kg	0.82	0.80	5	Particle Size	%	Complies (90%Passes)	Complies (80%Passes)	Complies (85%Passes)
6	Phosphorous (P)	mg/kg	0.08	0.09	6	Sand	%	36.8	41.2	38.98
7	Arsenic	mg/kg	0.10	0.10	7	Silt	%	32.8	37.5	34.95
8	Cadmium (as Cd)	mg/kg	1.0	1.0	8	Clay	%	22.2	28.4	26.07
9	(CEC)	Meq/100g	0.28	0.28	9	pH value @ 25°C	--	6.93	8.22	7.25
10	Chromium (as Cr)	mg/kg	52.0	56.0	10	EC @ 25°C	dsm <sup>-1</sup>	2.96	3.65	3.22
11	Copper	mg/kg	31.0	33.0	11	Nitrogen (N)	%	1.27	1.63	1.48
12	Lead (as Pb)	mg/kg	1.0	1.0	12	Phosphorous (P)	%	0.88	2.22	1.94
13	Manganese (as Mn)	mg/kg	183	183	13	Potassium (K)	%	2.23	4.27	3.66
14	Nickl (as Ni)	mg/kg	1.0	1.0	14	Total Carbon	%	17.42	21.7	20.33
15	Potassium	mg/kg	0.037	0.038	15	C: N Ratio	-	8:01	9:01	8:01
16	Sodium as Na	mg/kg	0.021	0.023	16	Arsenic (As)	mg/kg	BDL	BDL	BDL
17	Zinc (as Zn)	mg/kg	72.0	73.0	17	Boron (B)	mg/kg	13.58	19.81	16.39
18	Sand	%	39.1	39.2	18	Mercury (Hg)	mg/kg	BDL	BDL	BDL
19	Silt	%	37.4	37.5	19	Lead (Pb)	mg/kg	14.78	21.39	17.13
20	Clay	%	23.5	23.3	20	Cadmium (Cd)	mg/kg	1.76	2.23	2.03
Source: Sampling Results by <b>Ekdant enviro services (p) limited</b> , in Association with GTMS.					21	Chromium (Cr)	mg/kg	4.22	6.38	5.15
					22	Copper (Cu)	mg/kg	16.78	24.78	21.32
					23	Zinc (Zn)	mg/kg	128.74	163.47	142.81
					24	Nickel (Ni)	mg/kg	BDL	BDL	BDL
					Source: Sampling Results by <b>Enviro Farmers labs &amp; Technologies</b> , in Association with GTMS.					

### 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 baseline quality of surface and ground water.

**Table 3.5 Water Sampling Locations**

S. No.	Sampling ID	Location	Distance (km)	Direction	Coordinates
1	GW1	Vijayakumar Lease	2.20	S	12°37'44.28"N 77°48'42.49"E
2	GW2	Hosappuram	3.24	SW	12°37'10.28"N 77°48'22.45"E
3	GW3	Muduganapally	3.12	W	12°38'29.03"N 77°47'6.34"E
4	GW4	Kelamangalam	5.94	SE	12°36'20.71"N 77°50'56.67"E
5	GW5	Agondapalli	2.85	NE	12°39'44.58"N 77°50'29.32"E
6	SW1	Mugalur Lake	2.16	SW	12°37'45.87"N 77°48'21.55"E
7	SW2	Gopanapalli Lake	2.15	NW	12°39'20.16"N 77°47'52.41"E

Source: Sampling Results by *Enviro Farmers labs & Technologies*, in Association with GTMS.

#### 3.2.1 Surface Water Resources and Quality

Lakes near Mugalur and near Gopanapalli are the prominent surface water resources present in the study area. The proposed project area is located 2.16 km SW of the lake near Mugalur and 2.15 km NW of the lake near Gopanapalli, as shown in Table 3.5 and Figure 3.7. Totally, two surface water samples, known as SW1 and SW2 were collected from the lakes to assess the baseline water quality. Result for surface water sample in the Table 3.6 indicate that the physical, chemical and biological parameters, and heavy metals are within permissible limits in comparison with standards of IS10500:2012.

##### 3.2.1.1 Ground Water Resources and Quality

Groundwater in the study area occurs in the crystalline rocks of Archaean age and recent alluvium. The movement of the groundwater is controlled by the intensity of weathering and fracturing of crystalline rocks. Dug wells and bore wells are the most common ground water abstraction structures in the area. However, in dry season, people in the study area heavily rely on bore wells for their domestic and agriculture purpose.

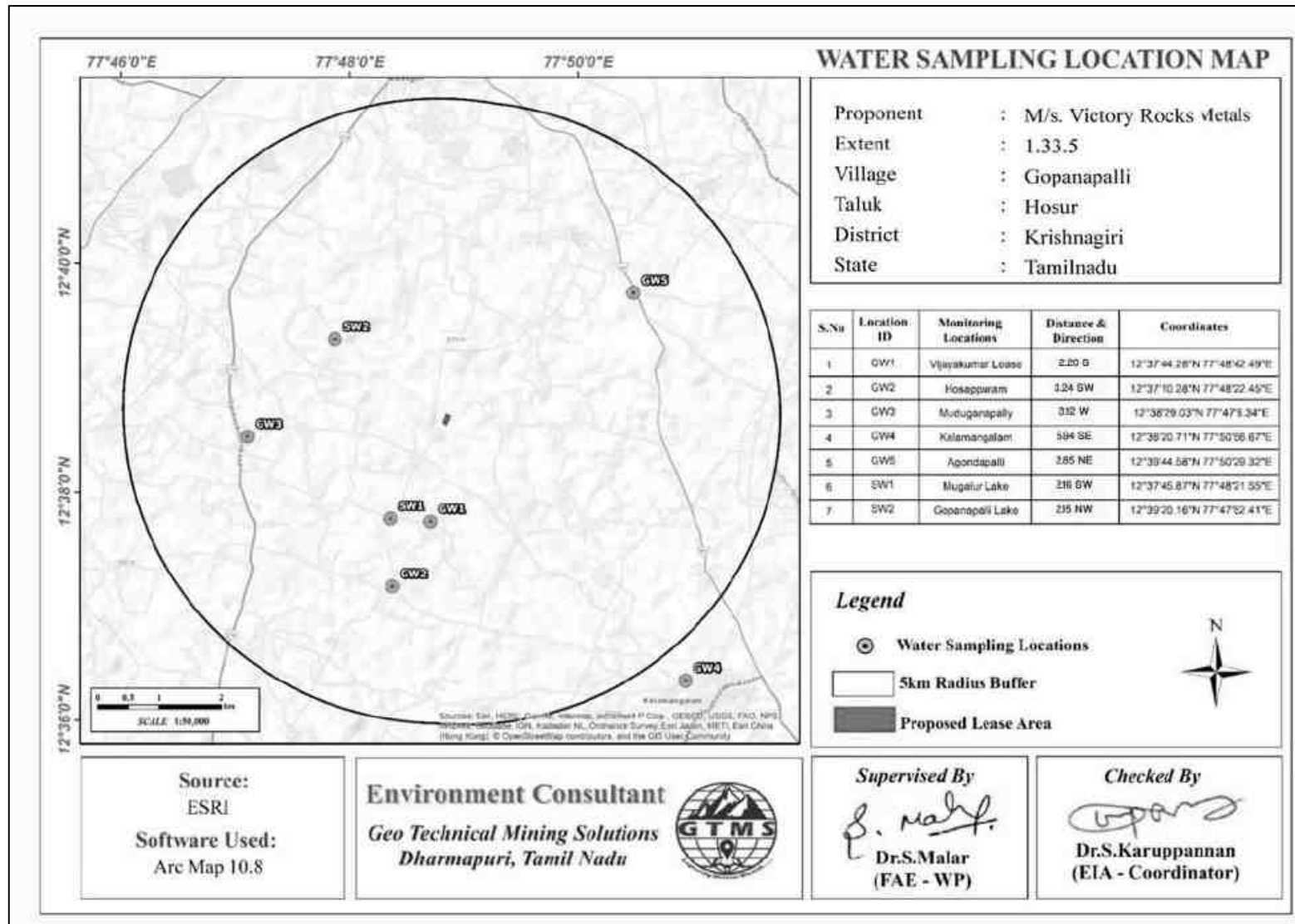
Five groundwater samples, known as GW1, GW2, GW3, GW4 and GW5 were collected from bore wells and open wells were analyzed for physico-chemical conditions, heavy metals and bacteriological contents in order to assess baseline quality of ground water. Ground water sampling locations and their distance and direction from the lease area are provided in Table 3.5 and the spatial occurrence of water sampling locations is shown in Figure 3.7. Table 3.6 summarizes ground water quality data of the five samples. Results for ground water samples in the Table 3.6 indicate that the physical, chemical and biological parameters, and heavy metals are within permissible limits in comparison with standards of IS10500:2012. The WQI is a unique digital rating expression that expresses overall water quality status viz: excellent, good, poor, very poor and unsuitable quality based on various water quality parameters. It is used as an important tool to compare the quality of groundwater and their management in a particular region. The WQI of the surface water, as shown Table 3.6a indicates that two surface water samples are of excellent and good quality. The WQI of ground water samples fall under good (four sample), poor (one sample), and suitable for domestic and agriculture purpose. Poor quality indicating their not suitability for drinking and suitable for domestic and agriculture purpose.

### **3.2.2 Hydrogeological Studies**

The area within 2 km radius consists of numerous open and bore wells. Groundwater level data were collected both from open and bore wells for two monsoon seasons as discussed in the following section.

#### **3.2.2.1 Groundwater Levels and Flow Direction**

Data regarding depth to groundwater levels are essential to infer the direction of groundwater movement within the study area. Knowledge of groundwater flow direction is must in choosing location for background groundwater quality monitoring wells and in locating recharge and discharge areas. Therefore, data regarding groundwater elevations were collected from 9 open wells and 9 bore wells at various locations within 2 km radius around the proposed project sites for the period from December-2023 through February-2024(Post Monsoon Season).



**Figure 3.7 Map Showing Water Sampling Locations within 5 km Radius around Proposed Project Site**

**Table 3.6 Ground and Surface Water Quality Result**

S. No	Parameters	Units	Surface Water		Ground Water		Acceptable Limit (IS: 10500:2012)	Permissible Limit (IS: 10500:2012)
			Minimum	Maximum	Minimum	Maximum		
1.	Color	Hazen	<5.0	<5.0	<5.0	<5.0	5 Max	15
2.	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3.	Taste	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4.	Turbidity	NTU	0.3	0.3	0.1	0.4	1.0	5
5.	pH @ 25°C	-	6.92	6.95	6.91	7.23	6.5-8.5	6.5-8.5
6.	EC @ 25°C	µS/cm	436	579	200	1940	-	-
7.	TDS @180°C	mg/l	249	330	130	1511	500	2000
8.	Total Alkalinity	mg/l	88	104	30	216	-	600
9.	Chloride (Cl)	mg/l	95	125	25	420	250	1000
10.	TH (Ca CO <sub>3</sub> )	mg/l	88	96	50	360	200	600
11.	Calcium (Ca)	mg/l	24.1	28.9	12.0	96	75	200
12.	Magnesium (Mg)	mg/l	5.83	6.80	4.86	29.2	30	100
13.	Residual Chloride	mg/l	BDL	BDL	BDL	BDL	0.2	1.0
14.	Sulphate (SO <sub>4</sub> )	mg/l	21.6	67	12.0	193	200	400
15.	Nitrate (NO <sub>3</sub> )	mg/l	1.03	1.32	1.03	5.62	45.0	45
16.	Sodium (Na)	mg/l	67.0	88.5	17.6	296.	-	-
17.	Potassium (K)	mg/l	19.2	20.6	4.5	75.7	-	-
18.	Iron (Fe)	mg/l	0.94	1.27	0.067	1.37	0.3	1.0
19.	Fluoride (F)	mg/l	0.42	0.69	0.21	0.37	1.0	1.5
20.	Arsenic (As)	mg/l	BDL	BDL	BDL	BDL	0.001	0.001
21.	Copper (Co)	mg/l	BDL	BDL	BDL	BDL	0.05	0.05
22.	Zinc (Zn)	mg/l	BDL	BDL	BDL	BDL	5.0	5.0
23.	Cadmium (Cd)	mg/l	BDL	BDL	BDL	BDL	0.01	0.01
24.	Lead (Pb)	mg/l	BDL	BDL	BDL	BDL	0.01	0.01
25.	Mineral Oil	mg/l	BDL	BDL	BDL	BDL	0.5	0.5
26.	<i>E.Coli</i>	CFU/ml	Absent	Absent	Absent	Absent	Shall not be Detected in any 100 ml sample	Shall not be Detected in any 100 ml sample
27.	<i>Coliform</i>	CFU/ml	Absent	Absent	Absent	Absent		

Source: Sampling Results by **Enviro Farmers labs & Technologies**, in Association with GTMS.

**Table 3.6a Weighted Arithmetic Water Quality Index (WAWQI) Method for  
surface water and ground water (Brown et al., 1972)**

S.No.	Water Quality Index (WQI)							WQI Range	Classification	Grading
	SW1	SW2	BW1	BW2	BW3	BW4	BW5			
1		23.02						0 – 25	Excellent	A
2	43.05		49.02	48.03	29.03		39.06	25 – 50	Good	B
3						60.04		50 – 75	Poor	C
4								75 – 100	Very Poor	D
5								> 100	Unsuitable	E

The open well water level data thus collected onsite are provided in Tables 3.7 and 3.8. According to the data, average depths to the static water table in open wells range from 12.7 to 14.5 m BGL in pre monsoon and 10.8 to 13.5 m BGL in post monsoon. The bore well data thus collected onsite are provided in Tables 3.9 and 3.10. The average depths to static potentiometric surface in bore wells for the period of December 2023 through February 2024 (Post-Monsoon Season) vary from 72 to 77 m and from 74 to 77 m for the period of March through May, 2023 (Pre-Monsoon Season). Data on the depths to static water table and potentiometric surface were used to draw contour lines connecting groundwater elevation (also known as equipotential hydraulic head) to determine the groundwater flow direction perpendicular to the contour lines. From the maps of open well groundwater flow direction shown in Figures 3.8-3.9, it is understood that most of the open well groundwater for the post and pre-monsoon seasons flows towards the open well number 6 located in southwest direction of the proposed project site. The groundwater flow maps in Figures 3.10-3.11 show that most of the bore well groundwater for the post- and pre-monsoon seasons flow towards the bore well number 2, it is located in southeastern direction of the proposed project site. On the basis of the groundwater flow information, both open wells and bore wells mentioned above can be chosen for water quality monitoring purpose as the wells may get easily affected by the contaminants resulting from the mining activities of the sites in future.

**Table 3.7 Pre-Monsoon Water Level of Open Wells within 2 km Radius**

Station ID	Depth to Static Water Table BGL (m)				Latitude	Longitude
	Mar-2023	Apr-2023	May-2023	Average		
DW01	11	12.5	14.7	12.7	12°38'22.51"N	77°48'53.54"E
DW02	12.5	13.7	14.9	13.7	12°38'8.18"N	77°49'3.30"E
DW03	10	11.5	12.5	14.3	12°38'55.94"N	77°49'13.63"E
DW04	11.5	12.5	13.5	12.7	12°39'11.25"N	77°48'23.29"E
DW05	13.5	14.7	15.5	14.5	12°39'35.44"N	77°49'21.81"E
DW06	12	13.7	14.5	14.5	12°38'26.11"N	77°49'42.30"E

DW07	13.0	14.5	15.7	14.4	12°38'4.83"N	77°48'18.15"E
DW08	12	13.5	15.5	13.6	12°38'30.88"N	77°47'58.15"E
DW09	12.5	13.5	15.0	13.6	12°38'46.77"N	77°49'9.90"E

Source: Onsite monitoring data

**Table 3.8 Post-Monsoon Water Level of Open Wells within 2 km Radius**

Station ID	Depth to Static Water Table BGL(m)				Latitude	Longitude
	Dec -2023	Jan- 2024	Feb-2024	Average		
DW01	10.0	11.5	12.7	11.4	12°38'22.51"N	77°48'53.54"E
DW02	11.5	12.7	13.9	12.7	12°38'8.18"N	77°49'3.30"E
DW03	9.0	11.0	12.5	10.8	12°38'55.94"N	77°49'13.63"E
DW04	10.5	11.5	13.0	11.6	12°39'11.25"N	77°48'23.29"E
DW05	12.4	13.0	14.5	13.3	12°39'35.44"N	77°49'21.81"E
DW06	11.0	12.7	13.2	12.3	12°38'26.11"N	77°49'42.30"E
DW07	12.5	13.5	14.5	13.5	12°38'4.83"N	77°48'18.15"E
DW08	11.0	12.5	13.5	12.3	12°38'30.88"N	77°47'58.15"E
DW09	11.5	12.5	13.5	12.5	12°38'46.77"N	77°49'9.90"E

Source: Onsite monitoring data

**Table 3.9 Pre-Monsoon Water Level of Bore Wells within 2 km Radius**

Station ID	Depth to Static Potentiometric Surface BGL(m)				Latitude	Longitude
	Mar-2023	Apr-2023	May- 2023	Average		
BW01	76.0	77.0	78.0	77	12°38'21.01"N	77°48'30.80"E
BW02	74.0	76.0	77.0	75	12°39'41.95"N	77°49'1.73"E
BW03	75.0	76.0	79.0	76	12°39'0.10"N	77°47'46.12"E
BW04	73.0	74.0	76.0	74	12°38'13.58"N	77°49'17.50"E
BW05	76.0	77.0	78.0	77	12°38'35.19"N	77°49'41.92"E
BW06	75.0	76.0	77.0	76	12°39'3.29"N	77°49'24.05"E
BW07	74.0	76.0	78.0	76	12°38'46.95"N	77°48'39.71"E
BW08	75.0	77.0	78.0	76	12°38'8.68"N	77°48'17.47"E
BW09	76.0	77.0	78.0	77	12°37'43.06"N	77°49'24.32"E

Source: Onsite monitoring data

**Table 3.10 Post-Monsoon Water Level of Bore Wells within 2 km Radius**

Station ID	Depth to Static Potentiometric Surface BGL (m)				Latitude	Longitude
	Dec -2023	Jan- 2024	Feb-2024	Average		
BW01	75.0	77.0	79.0	77	12°38'21.01"N	77°48'30.80"E
BW02	72.0	74.0	76.0	74	12°39'41.95"N	77°49'1.73"E
BW03	74	76.0	78.0	76	12°39'0.10"N	77°47'46.12"E
BW04	73.0	75.0	77.0	75	12°38'13.58"N	77°49'17.50"E
BW05	71.0	73.0	75.0	73	12°38'35.19"N	77°49'41.92"E
BW06	72.0	74.0	75.0	74	12°39'3.29"N	77°49'24.05"E
BW07	70.0	72.0	74.0	72	12°38'46.95"N	77°48'39.71"E
BW08	74.0	76.0	77.0	75	12°38'8.68"N	77°48'17.47"E
BW09	72.0	74.0	76.0	74	12°37'43.06"N	77°49'24.32"E

Source: Onsite Monitoring Data

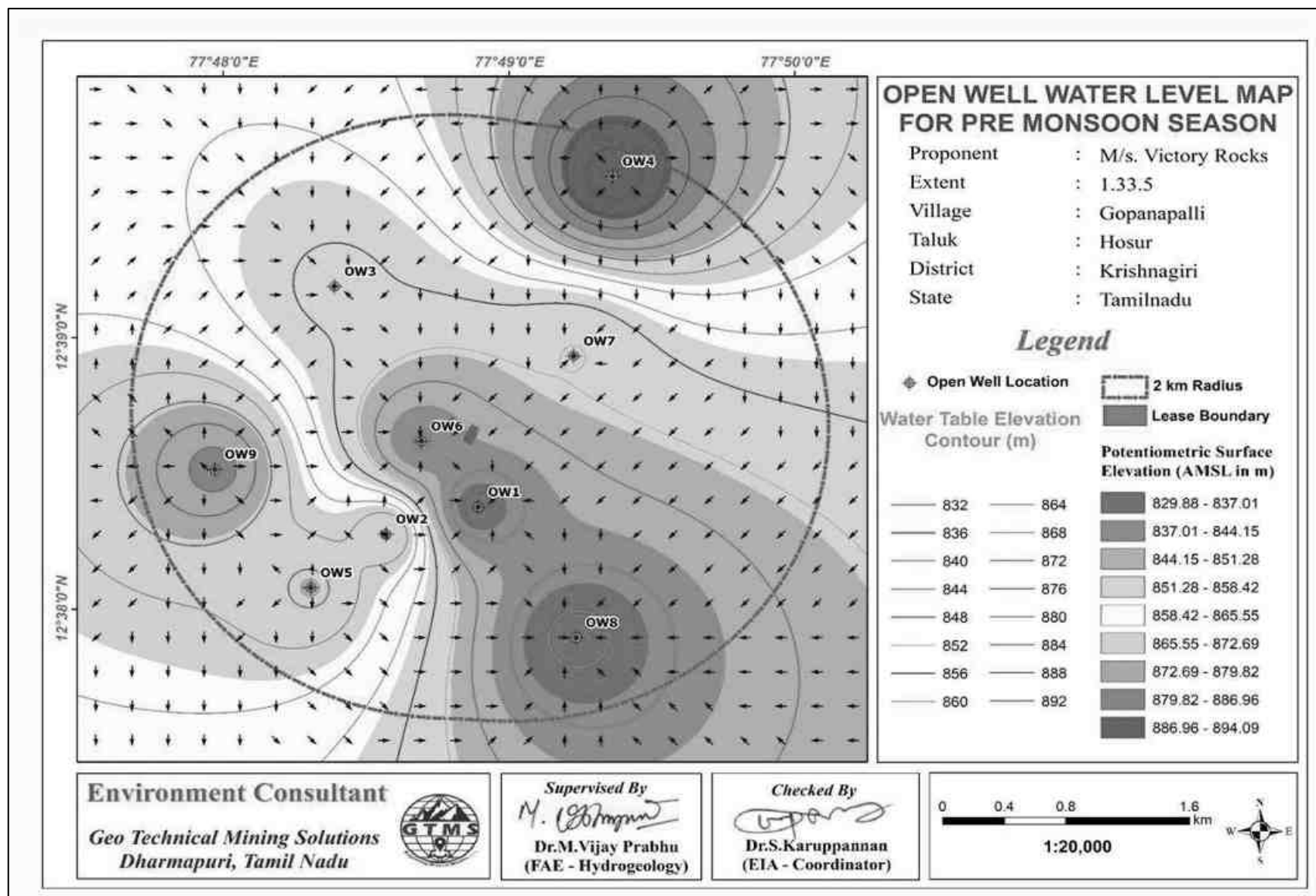


Figure 3.8 Open Well Static Groundwater Elevation Map Showing Direction of Groundwater Flow during Pre-Monsoon Season



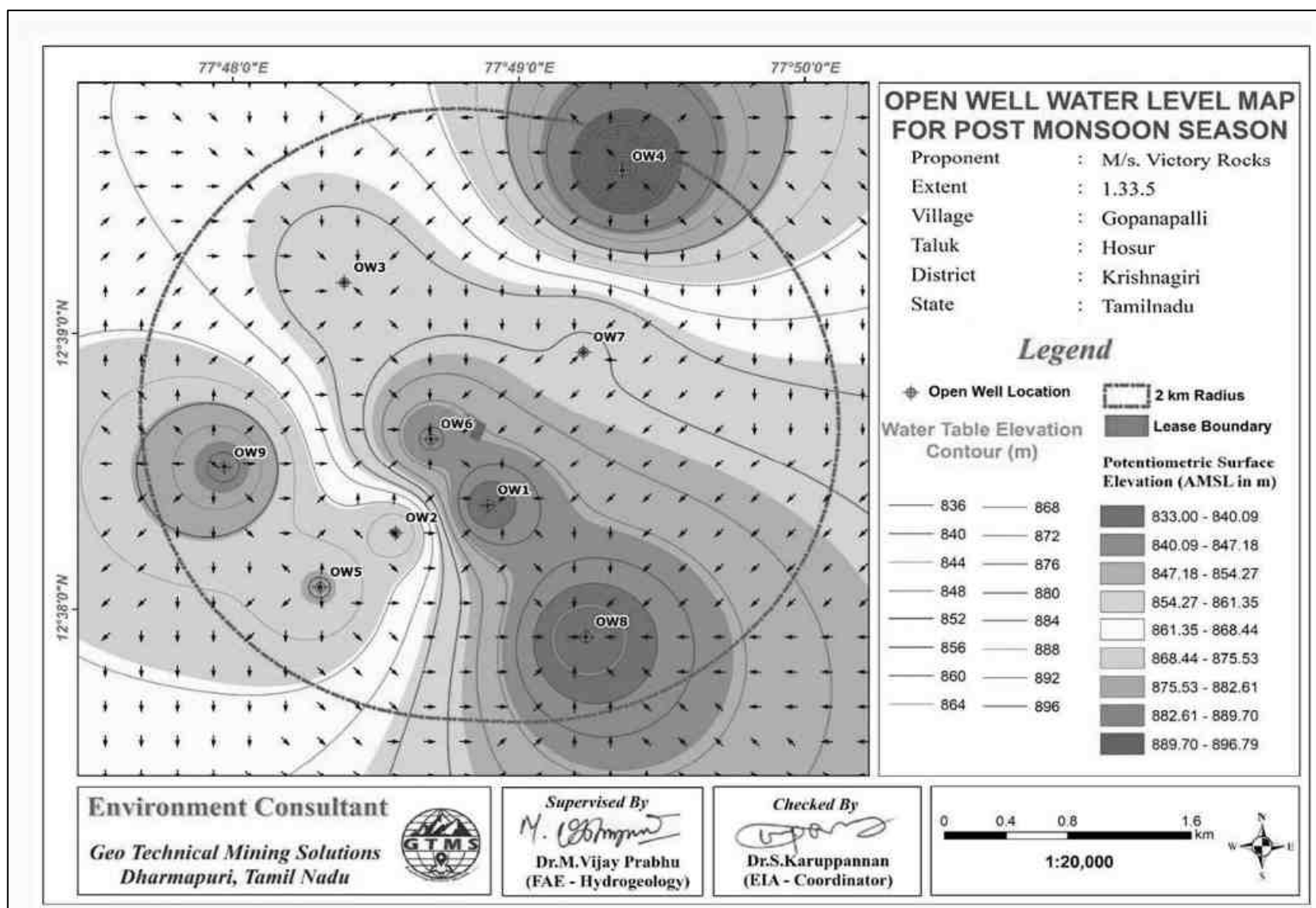


Figure 3.9 Open Well Static Groundwater Elevation Map Showing Direction of Groundwater Flow During Post-Monsoon Season

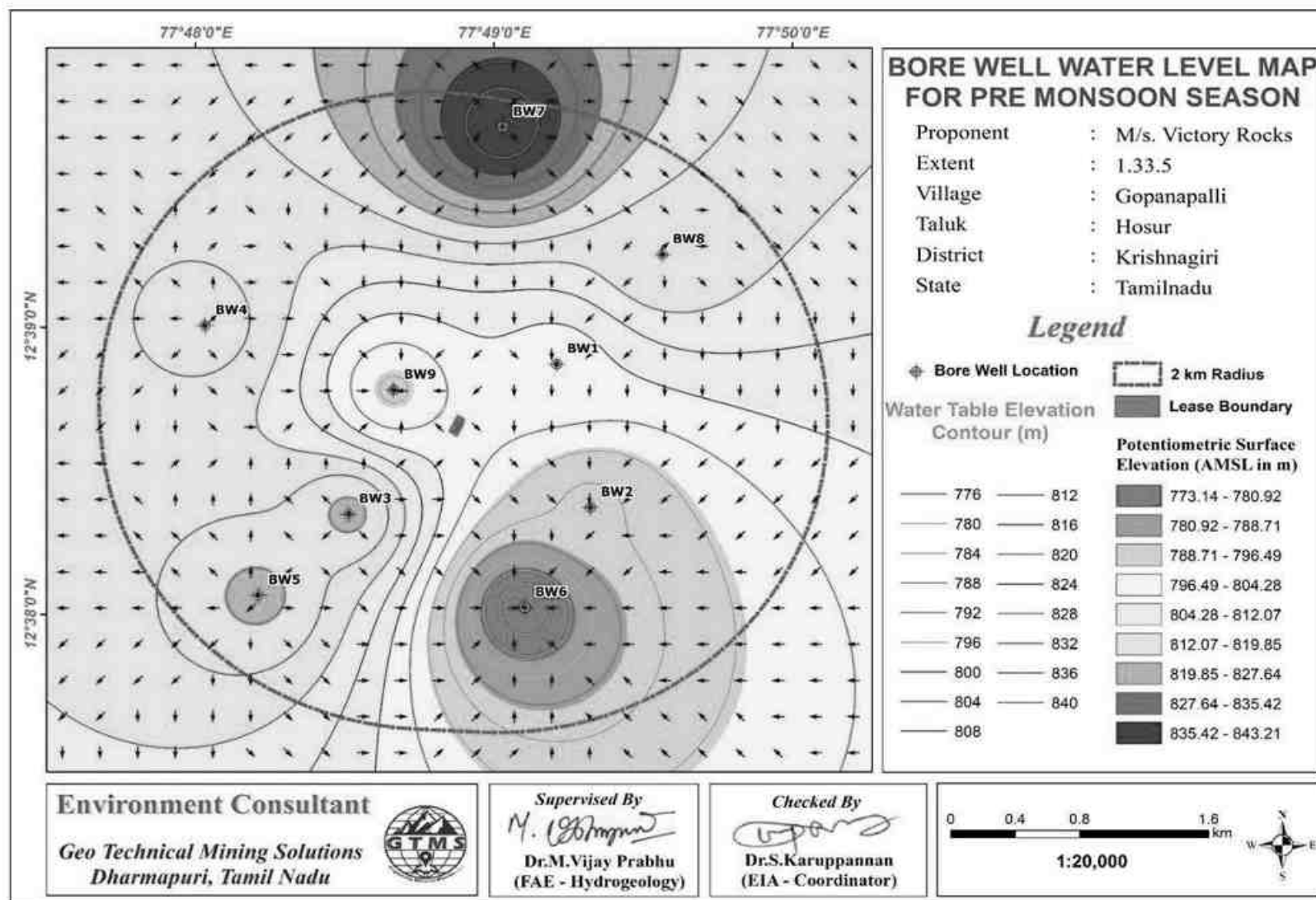


Figure 3.10 Borewell Static Groundwater Elevation Map Showing Direction of Groundwater Flow During Pre-Monsoon Season

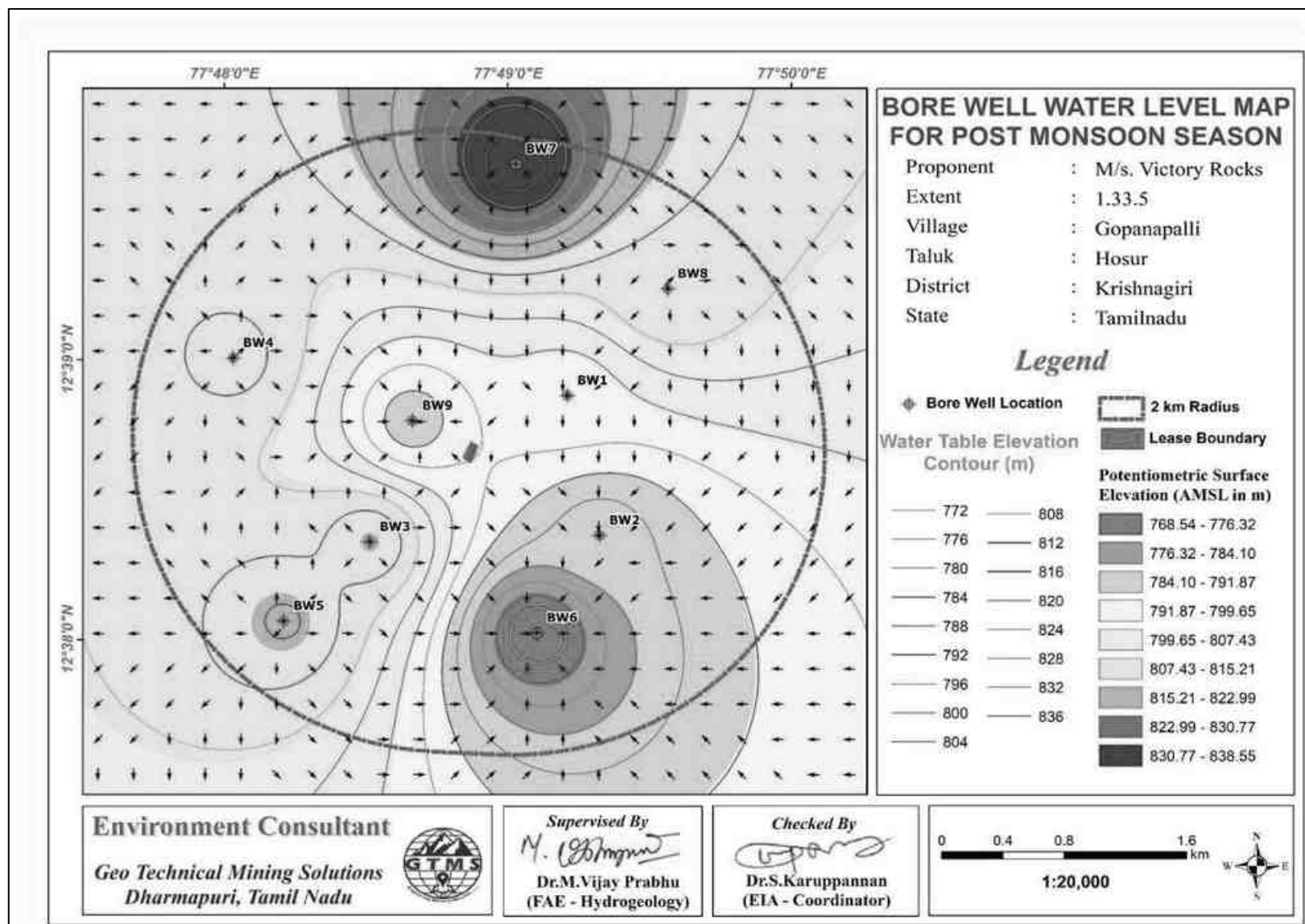


Figure 3.11 Borewell Static Groundwater Elevation Map Showing Direction of Groundwater Flow During Post-Monsoon Season

### 3.2.2.2 Electrical Resistivity Investigation

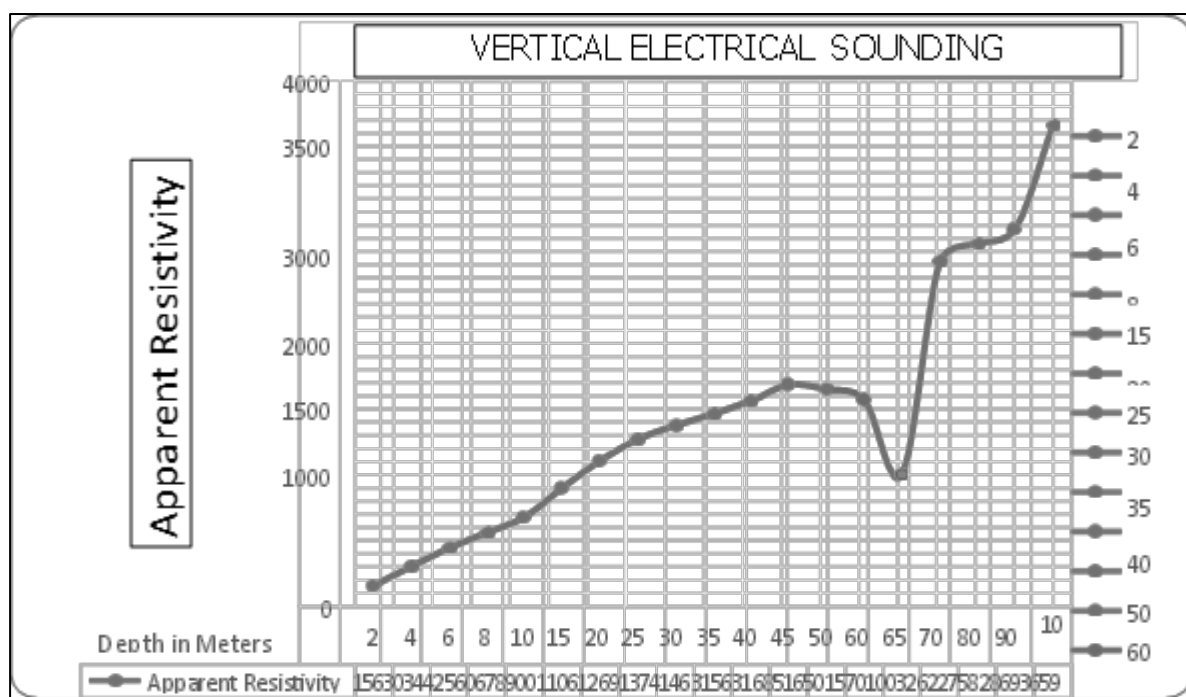
Electrical resistivity investigation is especially useful in the areas where there are no adequate exploratory well data about the aquifer conditions. The present study makes use of vertical electric sounding (VES) to delineate earth's subsurface layers. The electrical resistivity investigation uses four electrodes set up where current is sent through outer electrodes into the ground and the inner electrodes measure the potential difference.

#### **Result**

The Geophysical VES data obtained from the project site have been shown in Table 3.11. The field data obtained from a detailed geophysical investigation were plotted using excel spreadsheet for interpretation. The plot for the purpose of interpretation has been shown in Figure 3.12.

**Table 3.11 Vertical Electrical Sounding Data**

Location Coordinates - 12°38'36.50"N 77°48'52.99"E					
S. No.	AB/2 (m)	MN/2 (m)	Geometrical Factor (G)	Resistance in $\Omega$	Apparent Resistivity in $\Omega m$
1	2	2	11.78	13.248	156.06
2	4	2	49.46	6.127	303.04
3	6	5	112.26	3.937	441.97
4	8	5	200.18	2.798	560.10
5	10	5	75.36	8.997	678.01
6	15	10	173.49	5.188	900.07
7	20	10	310.86	3.558	1106.04
8	25	10	487.49	2.603	1268.94
9	30	10	274.75	5.001	1374.02
10	35	10	376.8	3.883	1463.11
11	40	10	494.55	3.16	1562.78
12	45	10	628	2.683	1684.92
13	50	10	777.15	1.943	1510.00
14	65	20	453.6	2.213	1003.82
15	70	20	989.1	2.651	2622.10
16	80	20	1256	2.196	2758.18
17	90	20	1554.3	1.846	2869.24
18	100	20	1653.6	2.213	3659.42



**Figure 3.12 Graph Showing Occurrence of Water Bearing Fracture Zones at the Depth of 65 m Below Ground Level in Proposed Project**

The rock formation of low resistivity values indicates occurrence of water at the depth of about 65 m below ground level. The maximum depth proposed for the proposed project is 40m (20 m AGL + 20 m BGL) the entire mine life period.

### 3.3 AIR ENVIRONMENT

The baseline studies on air environment include identification of specific air pollutants and their existing levels in ambient air. The sources of air pollution in the region are mostly due to vehicular traffic, dust arising from unpaved village road and domestic & agricultural activities.

#### 3.3.1 Meteorology

##### 3.3.1.1 Climatic Variables

A temporary meteorological station was installed at the project sites by covering cluster quarries. The station was installed at a height of 3 m above the ground level as there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature. Meteorological data obtained from the onsite monitoring station are provided in Table 3.12. According to the onsite data, the temperature in December, 2023 varied from 14.63<sup>0</sup> C to 29.40C with the average of 21.72<sup>0</sup> C; in January, 2024 from 14.76 to 31.41<sup>0</sup> C with the average 22.03<sup>0</sup> C; and in February, 2024 from 15.54 to 36.04<sup>0</sup> C with the average of 24.79<sup>0</sup>C. In

December, 2023, relative humidity ranged from 52.31 to 100 % with the average of 85.85%; in January, 2024, from 28.31 to 100 % with the average of 76.60%; and in February, 2024, from 12.56 to 100 % with the average of 62.19%. The wind speed in December, 2023 varied from 0.72 to 6.64m/s with the average of 3.34 m/s; in January, 2024 from 0.30 to 7.58 m/s with the average of 3.09 m/s; and in February, 2024 from 0.71 to 6.72 m/s with the average of 3.48 m/s. In December,2023, wind direction varied from 2.36 to 359.83<sup>0</sup> with the average of 87.95<sup>0</sup>; in January, 2024, from 28.89 to 281.48<sup>0</sup> with the average of 88.71<sup>0</sup>; and in February, 2024, from 10.19 to 251.52<sup>0</sup> with the average of 105.79<sup>0</sup>. In December,2023, surface pressure varied from 93.50 to 94.71kPa with the average of 94.18kPa; in January, 2024, from 93.81 to 94.83 kPa with the average of 94.28 kPa; and in February, 2024, from 93.73 to 94.81 kPa with the average of 94.29kPa.

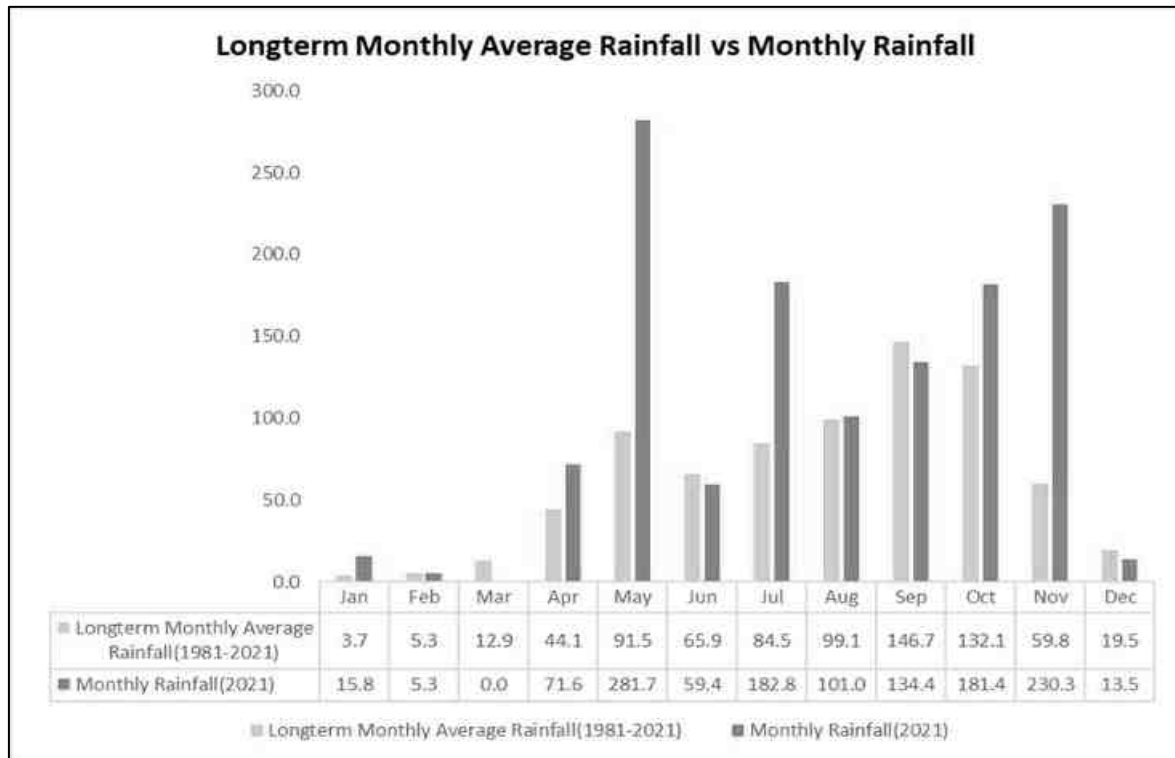
**Table 3.12 Onsite Meteorological Data**

S. No.	Parameters		December,2023	January,2024	February,2024
1	Temperature (°C)	Min	14.63	14.76	15.54
		Max	29.40	31.41	36.04
		Avg	21.72	22.03	24.79
2	Relative Humidity (%)	Min	52.31	28.31	12.56
		Max	100.00	100.00	100.00
		Avg	85.85	76.60	62.19
3	Wind Speed (m/s)	Min	0.72	0.30	0.71
		Max	6.64	7.58	6.72
		Avg	3.34	3.09	3.48
4	Wind Direction (degree)	Min	2.36	29.89	10.19
		Max	359.83	281.48	251.52
		Avg	87.95	88.71	105.79
5	Surface Pressure(kPa)	Min	93.50	93.81	93.73
		Max	94.71	94.83	94.81
		Avg	94.18	94.28	94.29

Source: Sampling Results by **Ekdant Enviro Services pvt.ltd**, in association with GTMS.

### 3.3.1.2 Rainfall

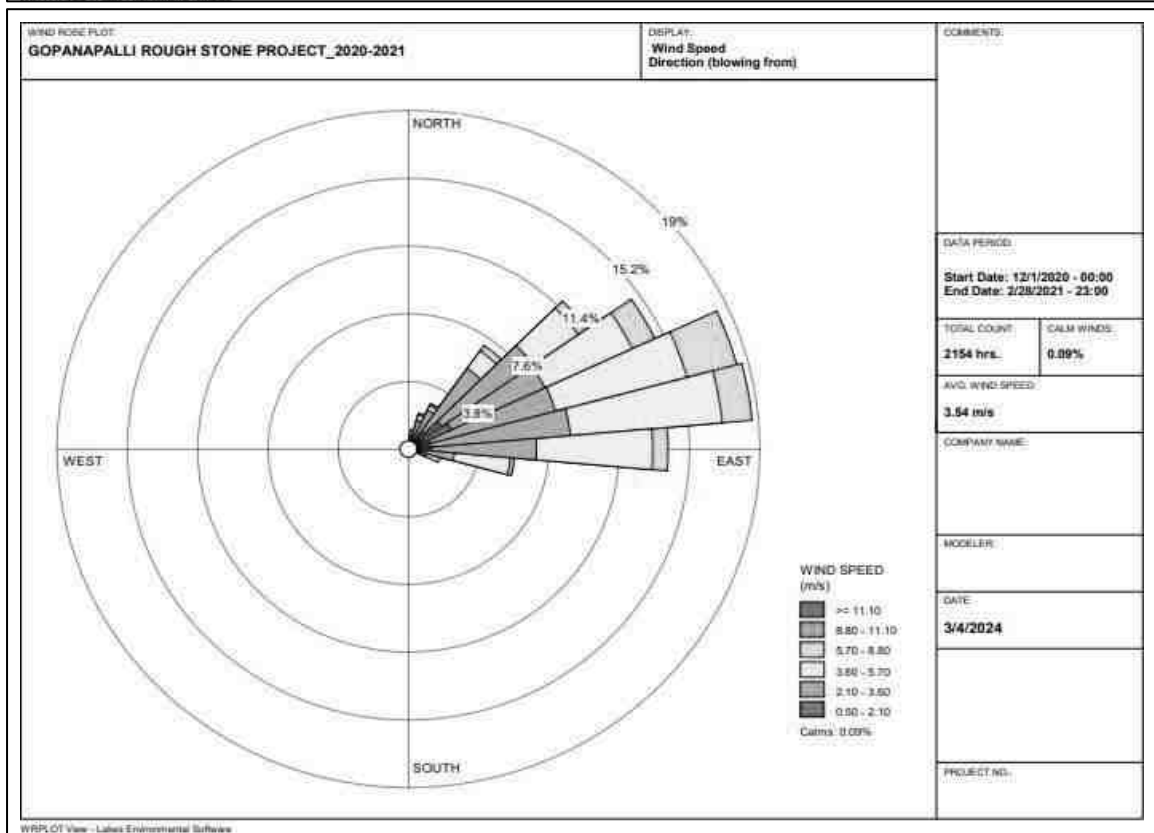
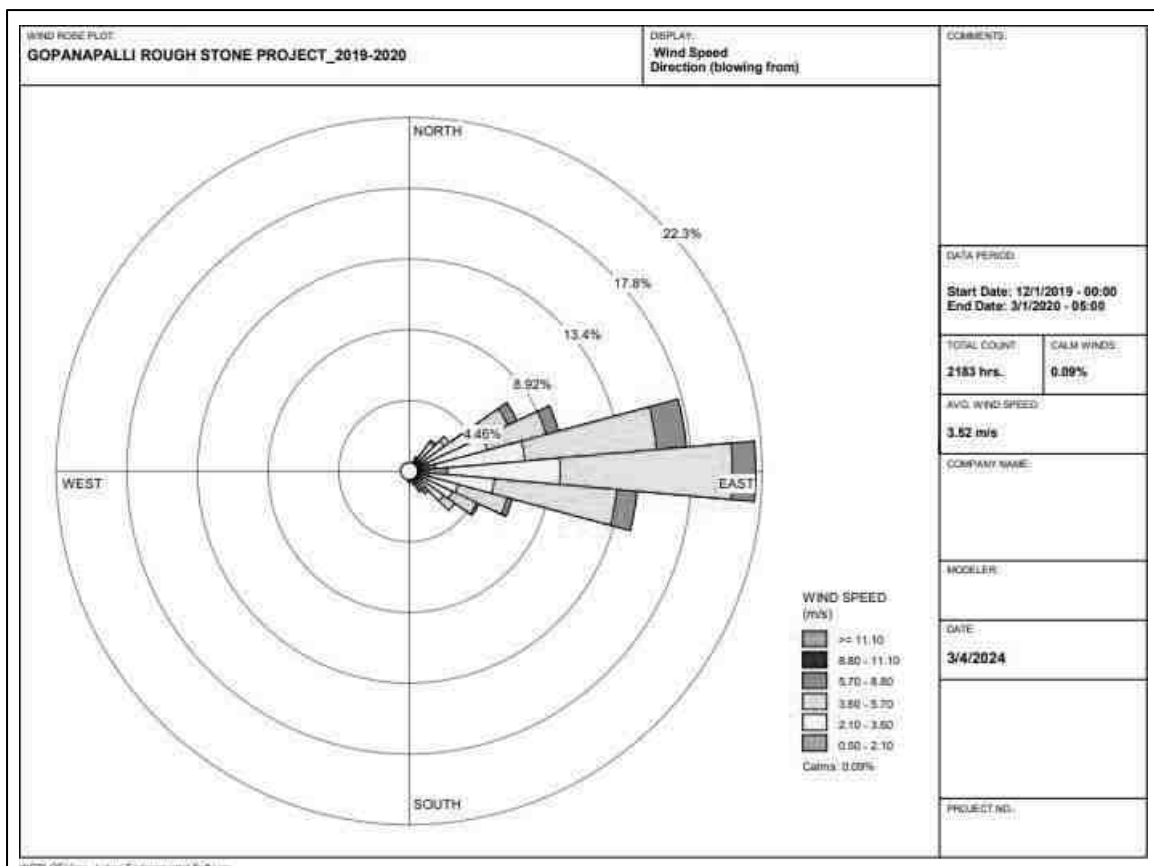
Rainfall data for the study area were collected for the period of 1981-2021 (POWER | Data Access Viewer (nasa.gov)). Long term monthly average rainfall was estimated from the data of 1981-2021 and compared with the monthly rainfall for the year 2021, shown in Figure 3.13. The Figure 3.13 shows that monthly rainfall in 2021 is generally high in the months of May, July, October, and November when compared to the long term monthly average rainfall.



**Figure 3.13 Long-Term Monthly Average Rainfall Vs Monthly Rainfall**

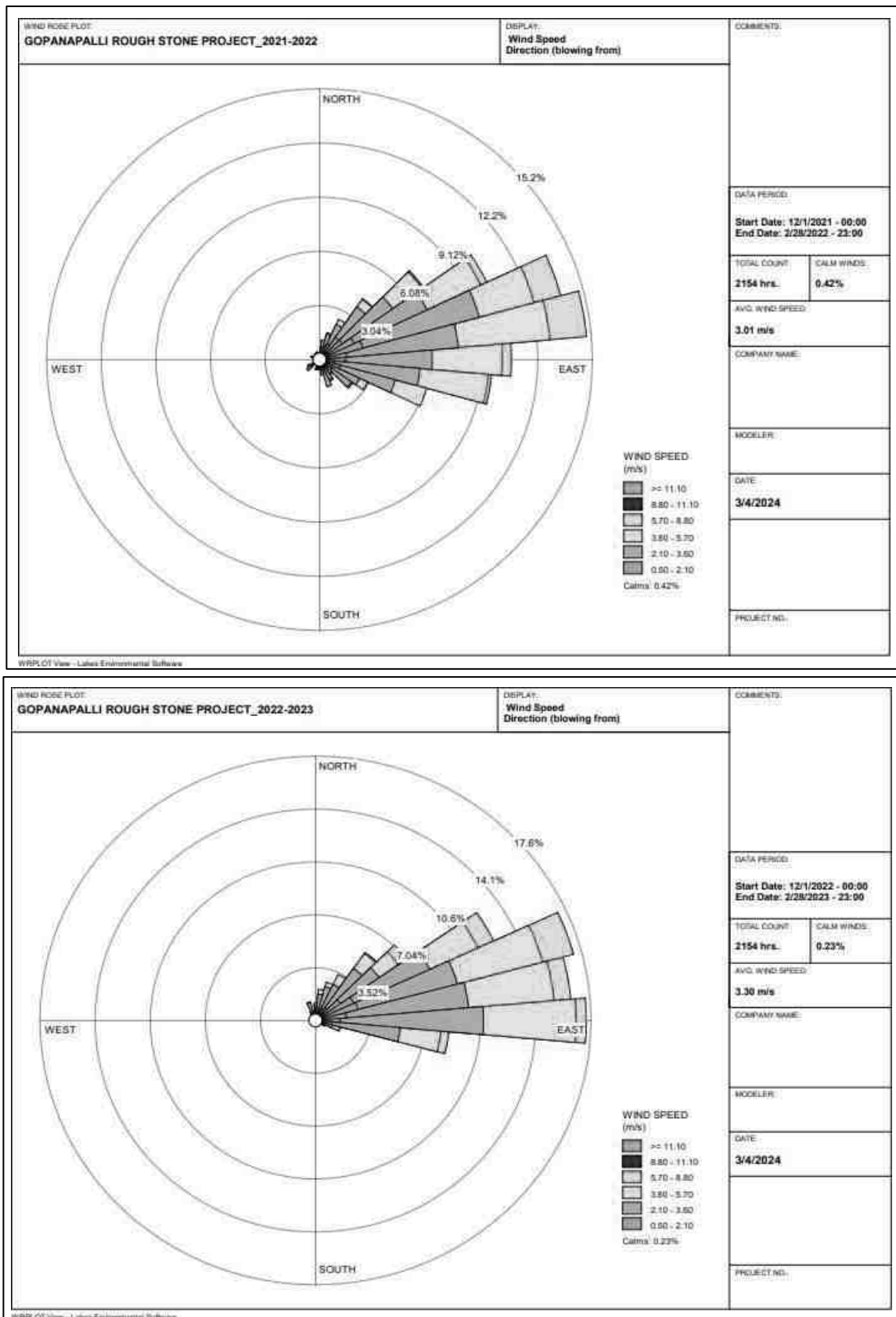
### 3.3.1.3 Wind Pattern

Wind pattern will largely influence the dispersion pattern of air pollutants and noise from the proposed project site. Analysis of wind pattern requires hourly site-specific data of wind speed and direction. Two types of wind rose were generated: historical seasonal wind rose for the period of December through February of the years from 2019 to 2023 and the seasonal wind rose for the study period of December 2023 through February-2024. The wind rose diagrams thus produced are shown in Figures 3.14-3.14a. Figure 3.15 reveals that: The measured average wind velocity during the study period is 3.30m/s. Predominant wind was dominant in the directions ranging from Northeast to Southwest.

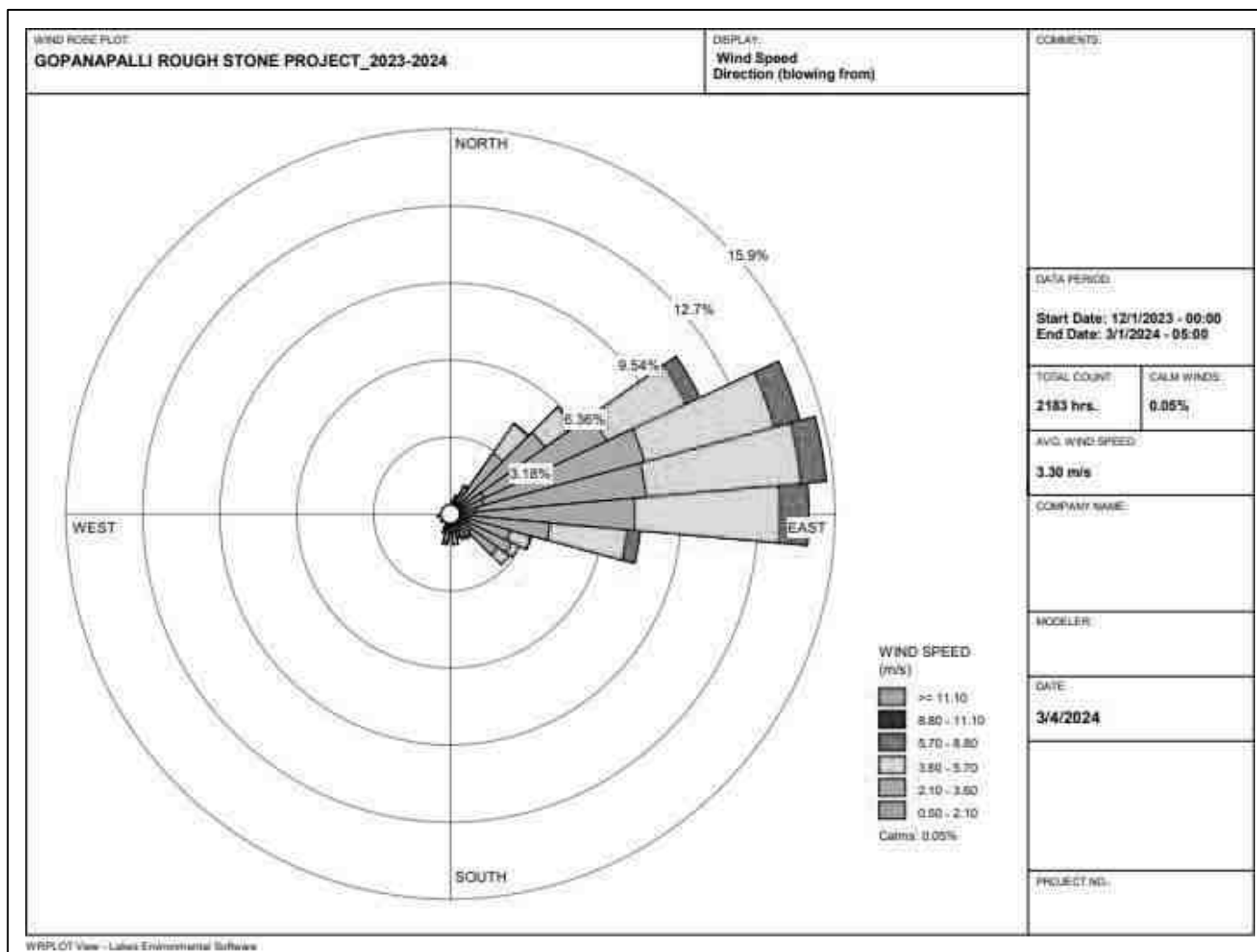


**Figure 3.14 Windrose Diagram for 2019-20120 and 2020-2021 (December to February)**





**Figure 3.14a Windrose Diagram for 2020-2021 and 2021-2022 (December to February)**



**Figure 3.15 Onsite Wind Rose Diagram**

### 3.3.2 Ambient Air Quality Study

The baseline ambient air quality is studied 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

**Table 3.13 Methodology and Instrument Used for AAQ Analysis**

Parameter	Method	Instrument
PM <sub>2.5</sub>	Gravimetric method Beta attenuation method	Fine Particulate Sampler
PM <sub>10</sub>	Gravimetric method Beta attenuation method	Respirable Dust Sampler
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 & Hoch heiser modified method)	Respirable Dust Sampler with gaseous attachment
Free Silica	NIOSH – 7601	Visible Spectrophotometry

Source: Sampling Methodology based on *Enviro Farmers labs & Technologies, Ekdant Enviro Services pvt. ltd & CPCB Notification*

**Table 3.14 National Ambient Air Quality Standards**

S. No.	Pollutant	Time Weighted Average	Concentration in ambient air	
			Industrial, Residential, Rural & other areas	Ecologically Sensitive area (Notified by Central Govt.)
1	SO <sub>2</sub> (µg/m <sup>3</sup> )	Annual Avg.* 24 hours**	50.0 80.0	20.0 80.0
2	NO <sub>x</sub> (µg/m <sup>3</sup> )	Annual Avg. 24 hours	40.0 80.0	30.0 80.0
3	PM <sub>10</sub> (µg/m <sup>3</sup> )	Annual Avg. 24 hours	60.0 100.0	60.0 100.0
4	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	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

## Methodology

Ambient air quality monitoring was 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 **December 2023 through February 2024**, as per the CPCB, MoEF guidelines and notifications.

It was ensured that the equipment was placed preferably at a height of at least  $3 \pm 0.5$  m above the ground level at each monitoring station for negating the effects of wind-blown ground dust. The equipment was placed at space free from trees and vegetation which otherwise act as a sink of pollutants resulting in lower levels in monitoring results. The baseline data of ambient air were generated for PM<sub>2.5</sub>, PM<sub>10</sub>, sulphur dioxide (SO<sub>2</sub>) and nitrogen dioxide (NO<sub>x</sub>). The sampling locations are shown in Figure 3.16 and average concentrations of air pollutants are summarized in Tables 3.15 and are shown in Figures 3.17-3.21.

**Table 3.15 Ambient Air Quality (AAQ) Monitoring Locations**

S. No.	Location Code	Monitoring Locations	Distance (km)	Direction	Coordinates
1	AAQ1	Vijayakumar Core	2.22	S	12°37'48.72"N, 77°48'43.02"E
2	AAQ2	Kallu Barundur	3.15	SW	12°37'47.92"N, 77°47'48.34"E
3	AAQ3	Barandhur	4.12	SW	12°37'19.90"N, 77°47'10.03"E
4	AAQ4	Muduganappalli	3.24	WSW	12°38'30.20"N, 77°47'00.91"E
5	AAQ5	Kottur	3.12	SSE	12°37'35.03"N, 77°49'26.71"E
6	AAQ6	Angondapalli	2.01	NE	12°39'39.66"N, 77°50'29.30"E
7	AAQ7	Core	---	---	12°38'41.52"N 77°48'54.14"E

*Source: On-site monitoring/sampling by **Enviro Farmers labs & Technologies and Ekdant Enviro Services pvt.ltd** in association with GTMS*

## Results

As per the monitoring data, PM<sub>2.5</sub> ranges from 17.1 µg/m<sup>3</sup> to 23.3µg/m<sup>3</sup> PM<sub>10</sub> from 33.6µg/m<sup>3</sup> to 40.7µg/m<sup>3</sup> SO<sub>2</sub> from 7.2 µg/m<sup>3</sup> to 10.9µg/m<sup>3</sup> NO<sub>x</sub> from 11.9 µg/m<sup>3</sup> to 19.4g/m<sup>3</sup>. The concentration levels of the pollutants fall within the acceptable limits of NAAQS prescribed by CPCB.

## Air quality Index (AQI)

The AQI shows that the air quality of the study area falls within good category 39 causing minimal impact to human health.

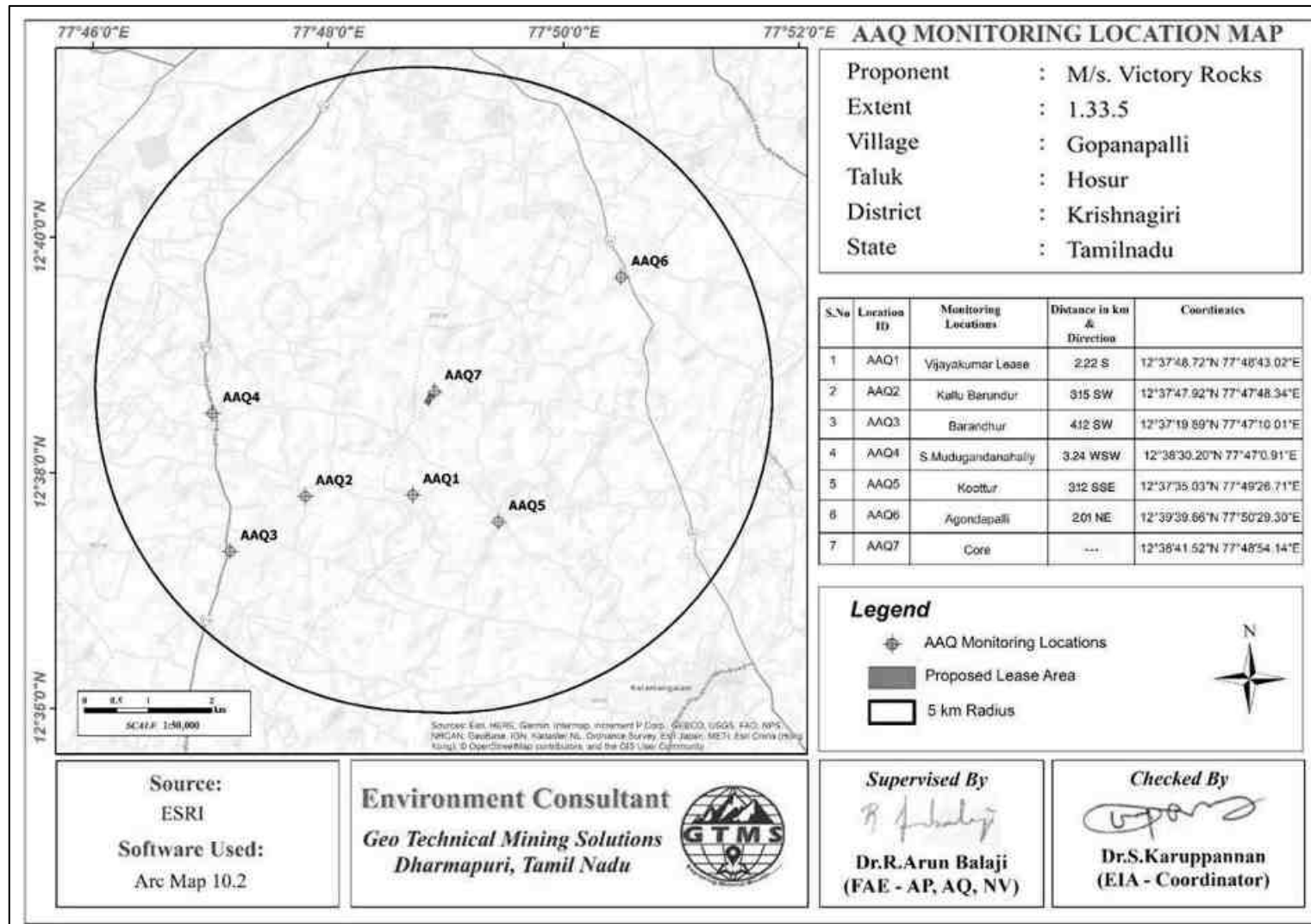
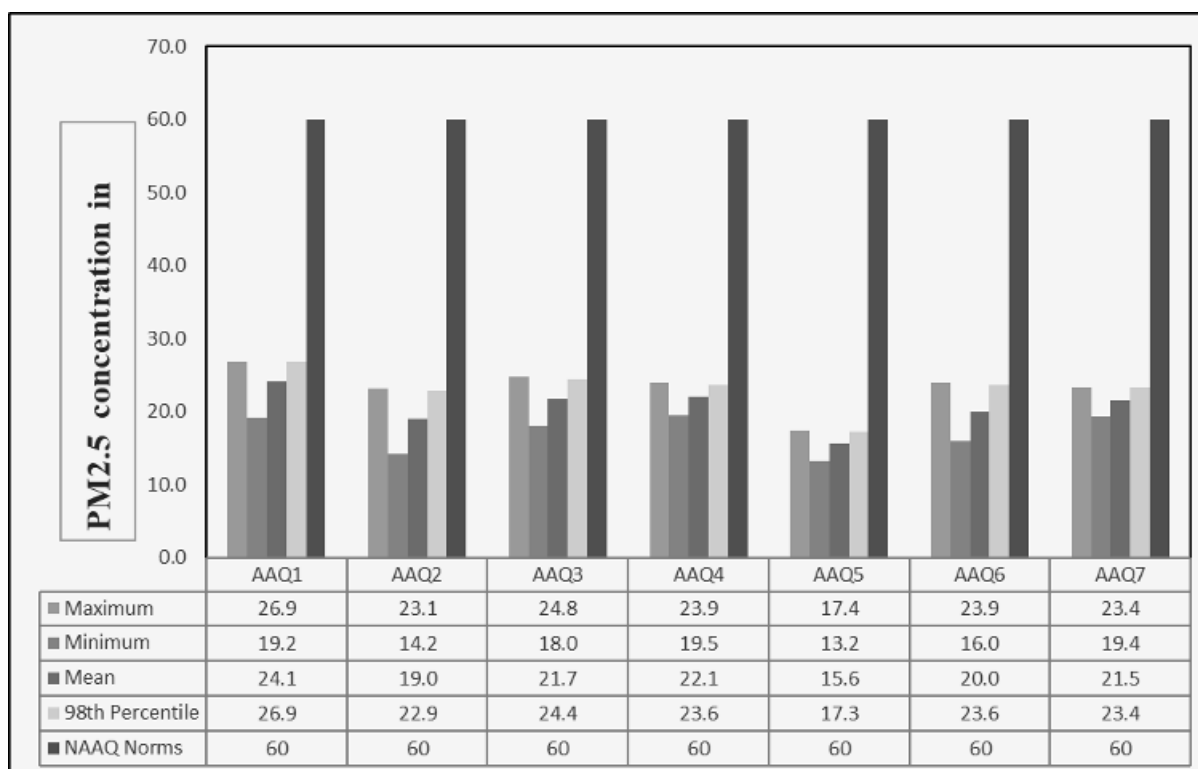


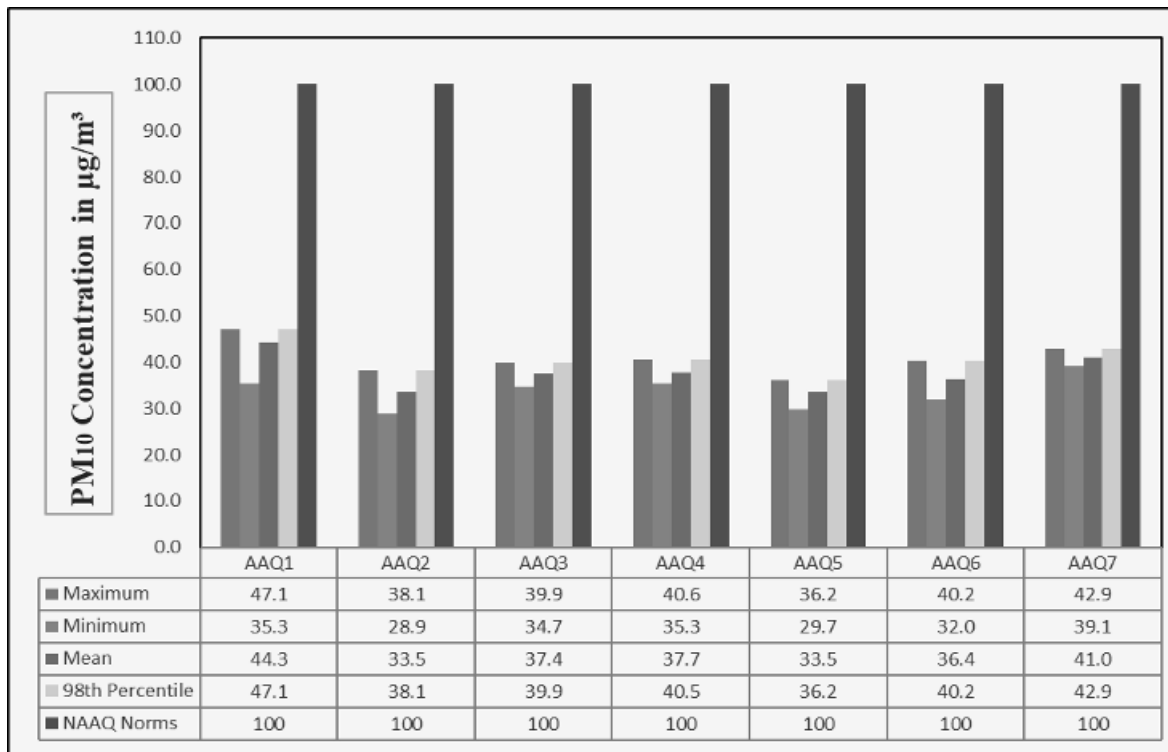
Figure 3.16 Map Showing Ambient Air Quality Monitoring Station Locations Around 5 km Radius from Proposed Project Site

**Table 3.16 Summary of AAQ Result**

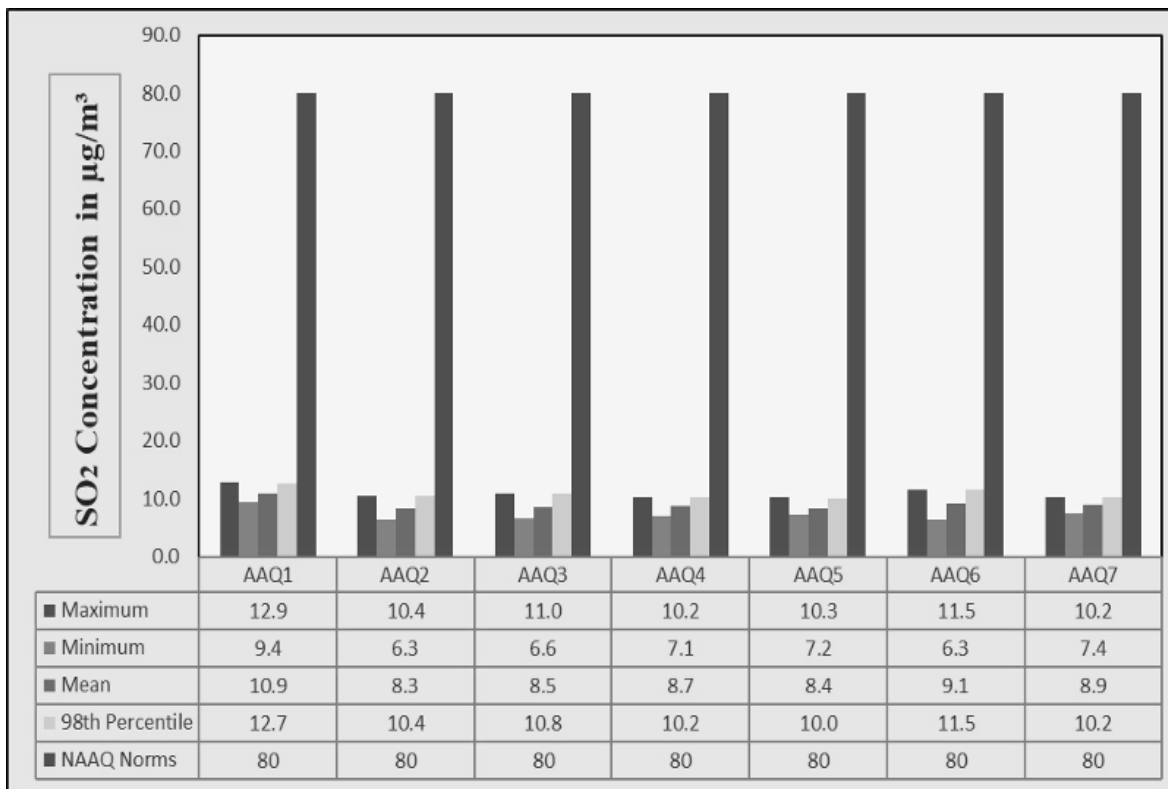
PM <sub>2.5</sub>					PM <sub>10</sub>			
Station ID	Max	Min	Mean	98th Percentile	Max	Min	Mean	98th Percentile
AAQ1	26.9	19.2	24.1	26.9	47.1	35.3	44.3	47.1
AAQ2	23.1	14.2	19.0	22.9	38.1	28.9	33.5	38.1
AAQ3	24.8	18.0	21.7	24.4	39.9	34.7	37.4	39.9
AAQ4	23.9	19.5	22.1	23.6	40.6	35.3	37.7	40.5
AAQ5	17.4	13.2	15.6	17.3	36.2	29.7	33.5	36.2
AAQ6	23.9	16.0	20.0	23.6	40.2	32.0	36.4	40.2
AAQ7	23.4	19.4	21.5	23.4	42.9	39.1	41.0	42.9
SO <sub>2</sub>					NO <sub>x</sub>			
AAQ1	12.9	9.4	10.9	12.7	22.9	16.4	19.1	22.9
AAQ2	10.4	6.3	8.3	10.4	18.4	12.5	14.4	18.2
AAQ3	11.0	6.6	8.5	10.8	20.1	8.9	15.8	19.9
AAQ4	10.2	7.1	8.7	10.2	20.8	14.3	16.4	20.5
AAQ5	10.3	7.2	8.4	10.0	18.3	13.8	14.4	18.3
AAQ6	11.5	6.3	9.1	11.5	20.6	6.3	15.7	20.5
AAQ7	10.2	7.4	8.9	10.2	15.0	10.9	12.1	14.4



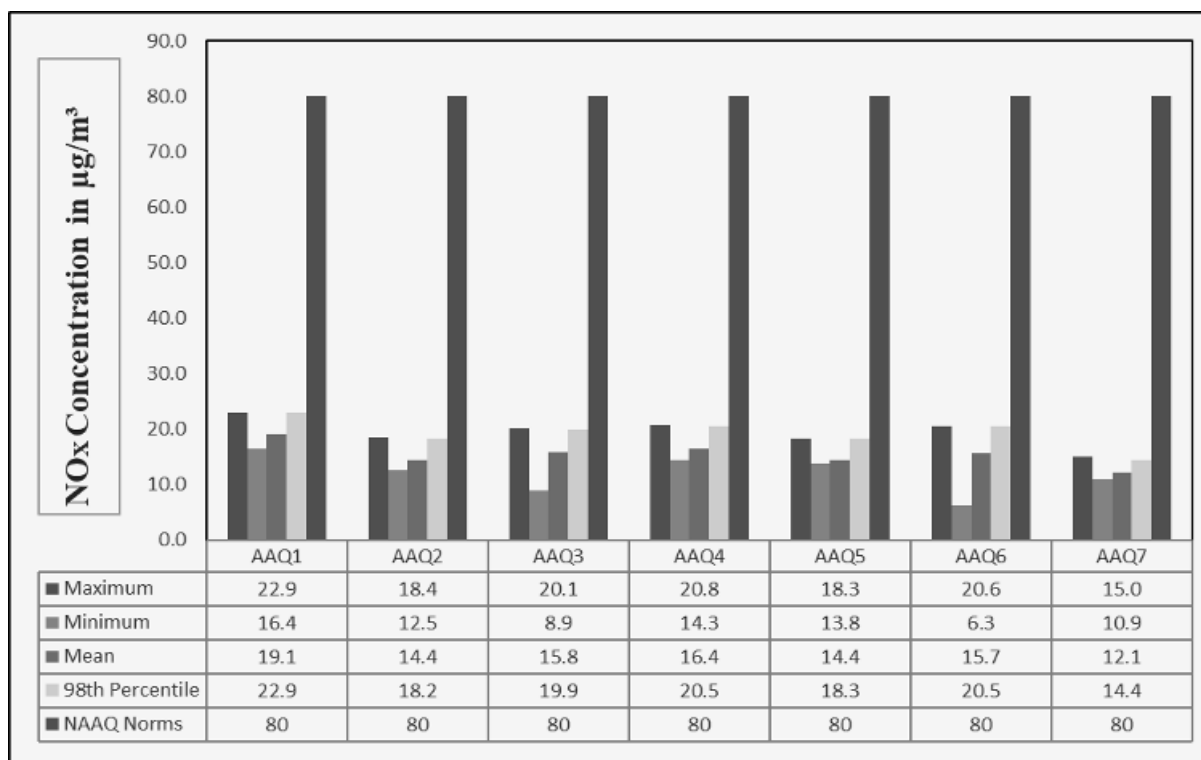
**Figure 3.17 Bar Chart Showing Maximum, Minimum, and Average Concentrations of PM<sub>2.5</sub> Measured from 7 Air Quality Monitoring Stations within 5 km Radius**



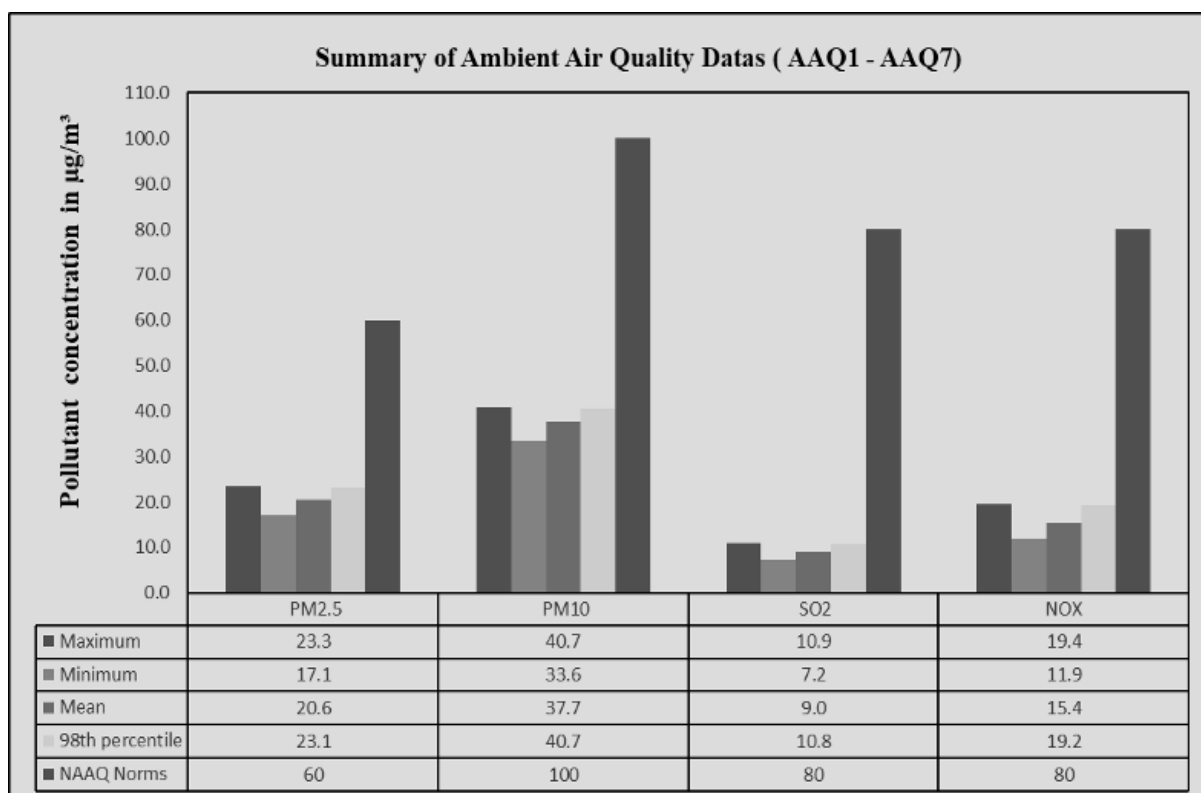
**Figure 3.18 Bar Chart Showing Maximum, Minimum, and Average Concentrations of PM10 Measured from 7 Air Quality Monitoring Stations within 5 km Radius**



**Figure 3.19 Bar Chart Showing Maximum, Minimum, and Average Concentrations of SO2 Measured from 7 Air Quality Monitoring Stations within 5 km Radius**



**Figure 3.20 Bar Chart Showing Maximum, Minimum, and Average Concentrations of Nox Measured from 7 Air Quality Monitoring Stations within 5 km Radius**



**Figure 3.21 Bar Chart Showing Maximum, Minimum, and Average Concentrations of Pollutants in Atmosphere within 5 km Radius**



### 3.4 NOISE ENVIRONMENT

The vehicular movement on road and mining activities is the major sources of noise in the study area. The main objective of noise monitoring in the study area is to establish the baseline noise level, which will in turn be used to assess the impact of the total noise expected to be generated during the project operations around the project site. In order to assess the ambient noise levels within the study area, noise monitoring was carried out at Eight (08) locations covering commercial, residential, rural areas within the radius of 5 km. Details of noise monitoring locations are provided in Table 3.17 and spatial occurrence of the locations are shown in Figure 3.24.

**Table 3.17 Noise Monitoring Locations**

S. No	Location Code	Monitoring Locations	Distance in km	Direction	Coordinates
1	N1	Near Vijayakumar lease	1.38	S	12°37'51.57"N, 77°48'40.03"E
2	N2	Gulisandiram	0.69	SSW	12°38'19.96"N, 77°48'35.61"E
3	N3	Kallu Barundur	2.42	SW	12°37'47.01"N, 77°47'48.90"E
4	N4	Barandhur	3.86	SW	12°37'21.17"N, 77°47'8.62"E
5	N5	Muduganappalli	3.30	WSW	12°38'22.58"N, 77°47'2.88"E
6	N6	Kottur	2.09	SSE	12°37'35.79"N, 77°49'28.41"E
7	N7	Angondapalli	3.45	NE	12°39'42.40"N, 77°50'31.39"E
8	N8	Core	--	--	12°38'41.23"N, 77°48'53.18"E

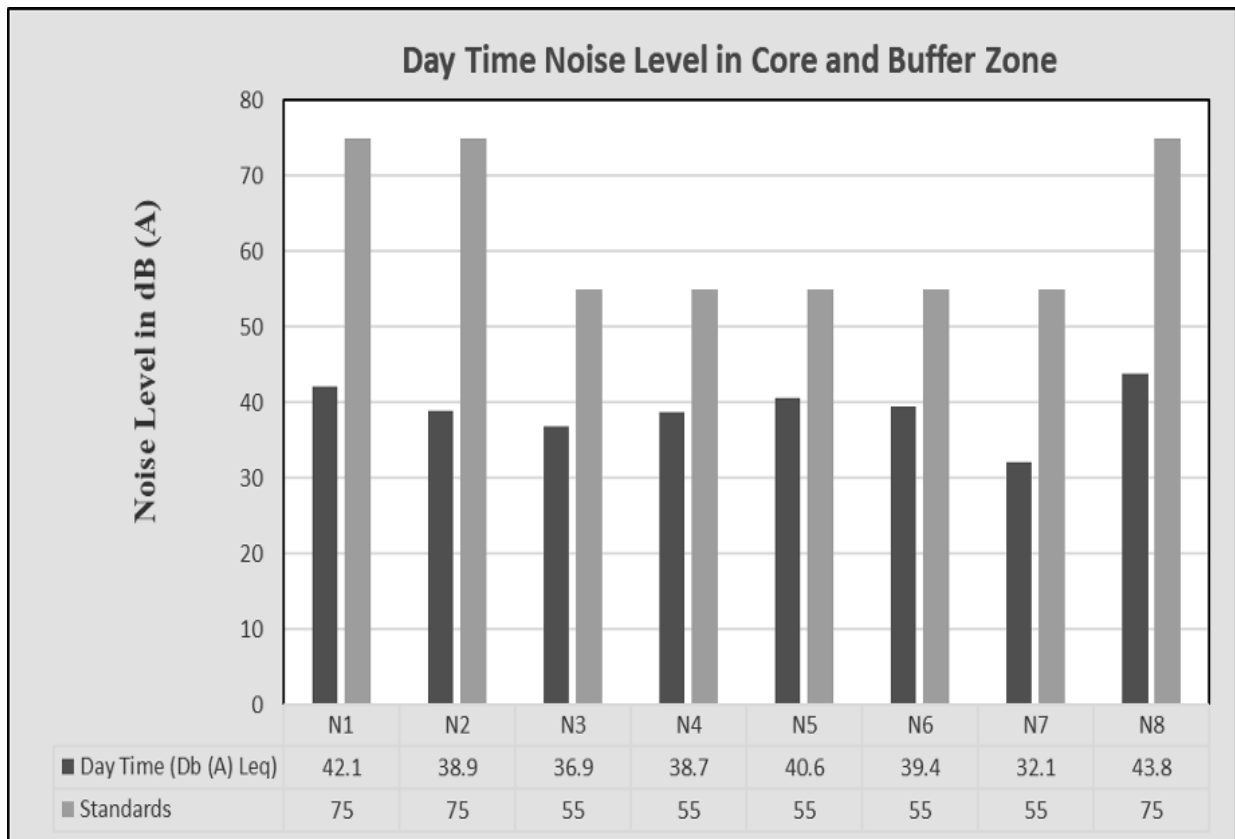
Source: On-site Monitoring/Sampling by *Enviro Farmers labs & Technologies* in Association with GTMS

**Table 3.18 Ambient Noise Quality Result**

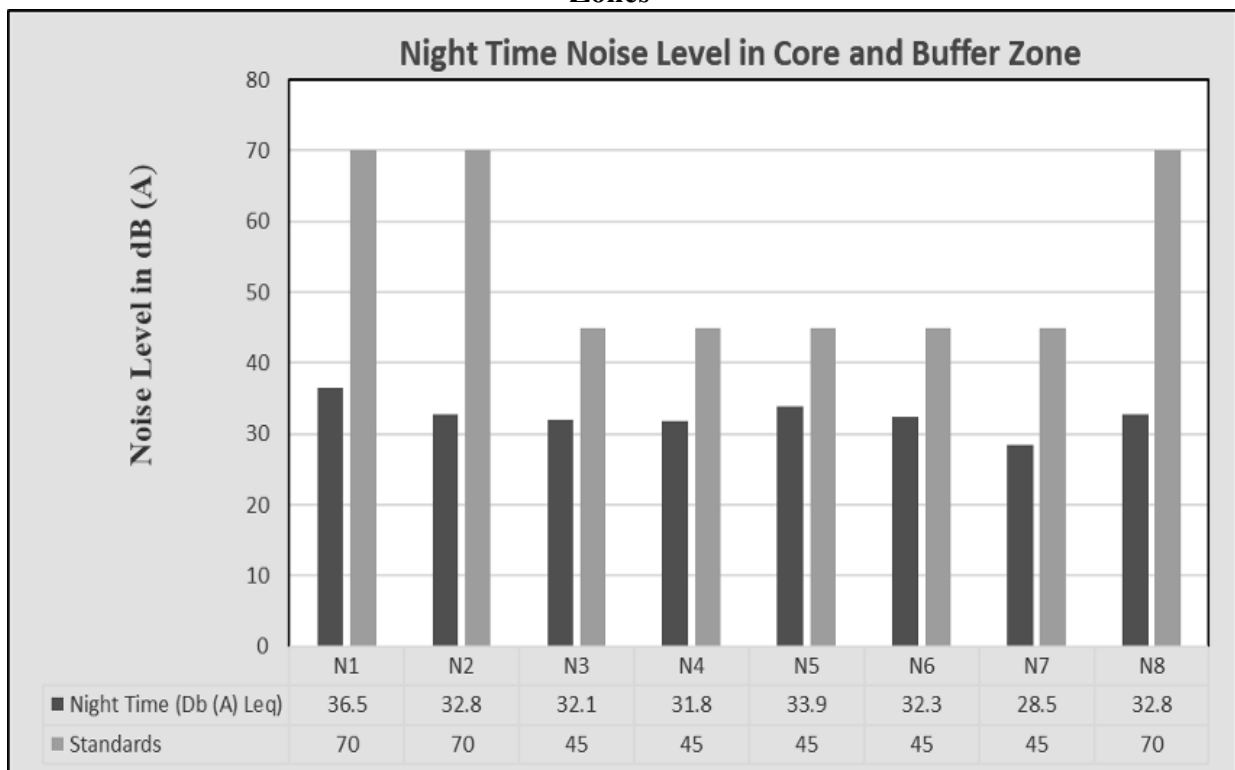
Station ID	Location	Environmental setting	Average day noise level (dB(A))	Average night noise level (dB(A))	Day time (6.00 AM – 10.00 PM)	Night time (10.00 PM – 6.00 AM)
					Standard (Leq in dB (A))	
N1	Near Vijayakumar lease	Industrial Area	42.1	36.5	75	70
N2	Gulisandiram	Residential Area	38.9	32.8	55	45
N3	Kallu Barundur		36.9	32.1		
N4	Barandhur		38.7	31.8		
N5	Muduganappalli		40.6	33.9		
N6	Kottur		39.4	32.3		
N7	Angondapalli		32.1	28.5		
N8	Core	Industrial Area	43.8	32.8	75	70

Source: On-site Monitoring/Sampling by *Enviro Farmers labs & Technologies* in Association with GTMS

The Table 3.18 shows that noise level in core zone was 43.8 dB (A) Leq during day time and 32.8dB(A) Leq during night time. Noise levels recorded in buffer zone during day time varied from 32.1 to 42.1dB (A) Leq and during night time from 28.5 to 36.5dB (A) Leq. Thus, the noise level for industrial and residential area meets the requirements of CPCB. The results are also depicted below in Figures 3.22 and 3.23.



**Figure 3.22 Bar Chart Showing Day Time Noise Levels Measured in Core and Buffer Zones**



**Figure 3.23 Bar Chart Showing Night Time Noise Levels Measured in Core and Buffer Zones**

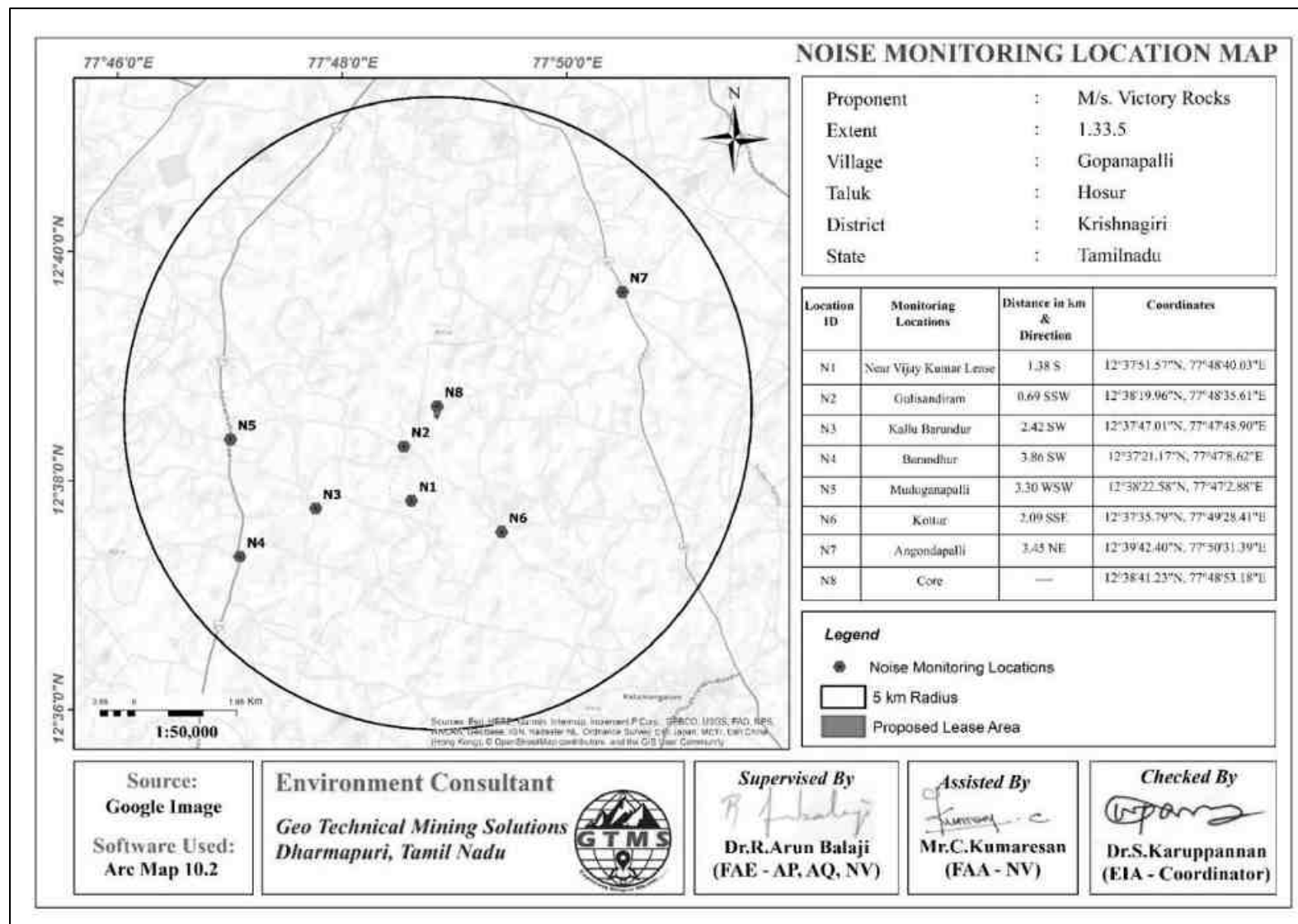


Figure 3.24 Map Showing Noise Level Monitoring Station Locations around 5 km Radius from Proposed Project Site

### 3.5 BIOLOGICAL ENVIRONMENT

An ecological survey was conducted to collect the baseline data regarding flora and fauna in the study area of 10 km radius. Data were also collected from different sources, i.e., government departments such as District Forest Office, Government of Tamil Nadu. On the basis of onsite observations as well as forest department records the checklist of flora and fauna was prepared.

#### ***Methodology***

Sampling locations were selected with reference to topography, land use, vegetation pattern, etc. In this study, quadrats of 25 m × 25 m were laid down to assess trees and quadrats of 10 m × 10 m were laid down for shrubs.



**Figure 3.25 Quadrates Sampling Methods of Flora  
Phyto-Sociological Studies**

Phyto-sociological parameters, such as ***Density, Frequency, Abundance and Importance Value Index*** of individual species were determined in randomly placed quadrat of different sizes in the study area, as shown in Table 3.19. Relative frequency, and relative density were calculated and the sum of these three represented Importance Value Index (IVI) for various species. For shrubs, herbs and grasses, ***Density, Frequency, Relative Density & Relative Frequency were found***. Sample plots were selected in such a way to get maximum representation of different types of vegetation and plots were laid out in different part of the study area of 10 km radius. Analysis of the vegetation will help in determining the relative importance of each species in the study area and to reveal if any economically valuable species is threatened in the process.

**Table 3.19 Calculation of Density, Frequency (%), Dominance, Relative Density, Relative Frequency, Relative Dominance & Important Value Index**

Parameters	Formula
Density	Total No. of individuals of species/ Total No. of Quadrats used in sampling
Frequency (%)	(Total No. of Quadrats in which species occur/ Total No. of Quadrats studied)100
Abundance	Total No. of individuals of species/ No. of Quadrats in which they occur
Relative Density	(Total No. of individuals of species/Sum of all individuals of all species) * 100
Relative Frequency	(Total No. of Quadrats in which species occur/ Total No. of Quadrats occupied by all species) * 100
Important Value Index	Relative Density + Relative Frequency

***Shannon – Wiener Index, Evenness and Richness***

Biodiversity index is a quantitative measure that reflects how many different types of species, there are in a dataset, and simultaneously takes into account how evenly the basic entities (such as individuals) are distributed among those types of species. The value of biodiversity index increases both when the number of types increases and when evenness increases. For a given number of type of species, the value of a biodiversity index is maximized when all type of species is equally abundant. The corresponding formulas are given in Table 3.20.

**Table 3.20 Calculation of Species Diversity by Shannon – Wiener Index, Evenness and Richness**

Description	Formula
Species diversity – Shannon – Wien Index	$H = \sum [(p_i) * \ln(p_i)]$ Where $p_i$ : Proportion of total sample represented by species $i$ : number of individuals of species $i$ / total number samples
Evenness	$H/H_{\max}$ $H_{\max} = \ln(s)$ = maximum diversity possible $S$ =No. of species
Species Richness by Margalef	$RI = S - 1/\ln N$ Where $S$ = Total Number of species in the community $N$ = Total Number of individuals of all species in the Community

### **3.5.1 Flora**

Flora study was conducted using the above said methodology to inventory the existing terrestrial plants in both core and buffer zones. Details of plants have been described in the succeeding sections.

#### ***Flora in mine lease area (core zone)***

Taxonomically 16 species belonging to 10 families have been recorded from the core mining lease area. Based on habitat classification of the enumerated plants the majority of species were 5 Tree (29.5 %) followed by Herbs & Climbers & Grass 7 (41%), Shrubs 4 (29.5 %). Details of flora with the scientific name were mentioned in Table.3.21.

#### ***Flora in 300 m radius buffer zone***

Taxonomically 36 species belonging to 25 families have been recorded from the 300 m radius buffer zone. Based on habitat classification of the enumerated plants the majority of species were seven Tree (19.5 %) followed by Herbs & Climbers & Grass 21 (58.5%), Shrubs 8 (22%). Details of flora with the scientific name and species richness index were mentioned in Table.3.21-3.23.

#### ***Flora in 10 km radius buffer zone***

Similar type of environment also in buffer area but with more flora diversity compare than core zone area, because of nearby agriculture land was found to be dominate in all the directions. Majority of the flat landscape around project unit is occupied by agriculture fields. It contains a total of 89 species belonging to 43 families have been recorded from the buffer zone. The floral (89) varieties among them Trees 37 (42%) Shrubs 13 (14%) and Herbs & Climbers & Creeper & Cactus 39 (44%). Details of flora with the scientific name and species richness index were mentioned in Table.3.21-3.23.

Table 3.21 Flora in Mine Lease Area

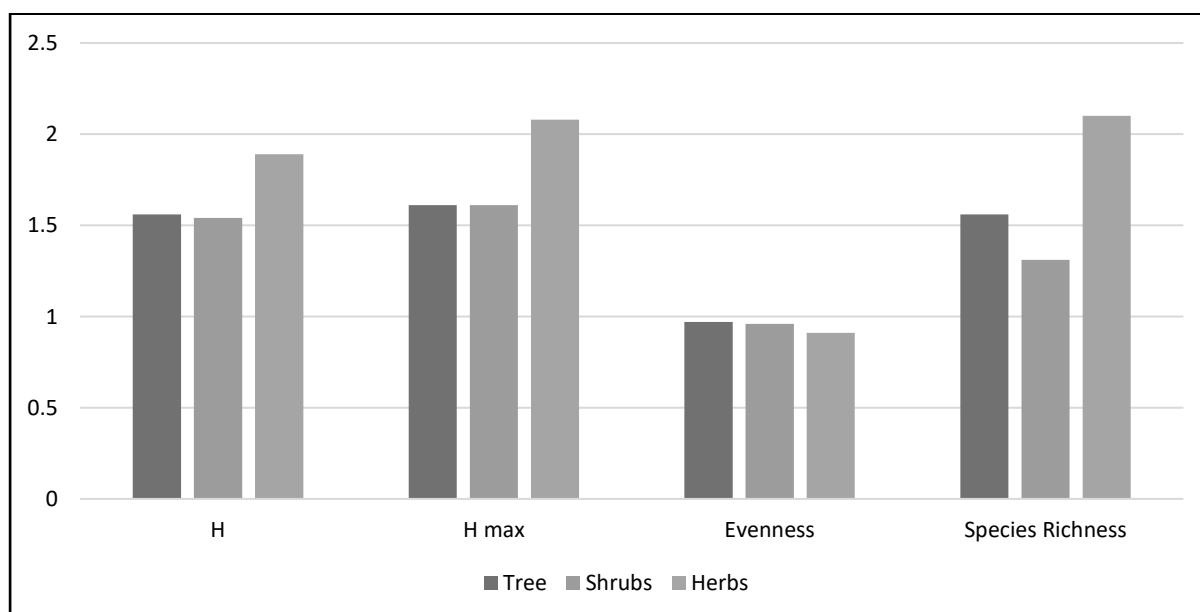
S.no	Local name	Scientific name	Family name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Relative Density	Relative Frequency	IVI	IUCN Conservation Status
<b>Trees</b>													
1	Karuvealan	<i>Prosopis juliflora</i>	Fabaceae	4	4	5	0.8	0.0	0.4	8.3	16.3	24.6	NE
2	Pungam	<i>Millettia pinnata</i>	Fabaceae	2	2	5	0.4	40.0	1.0	15.4	16.7	32.1	NE
3	Unjai maram	<i>Albizia amara</i>	Fabaceae	2	1	5	0.4	20.0	2.0	15.4	8.3	23.7	NE
4	Vetpalai maram	<i>Wrightia tinctoria</i>	Apocynaceae	3	3	5	0.6	60.0	1.0	23.1	25.0	48.1	NE
5	Prasu maram	<i>Butea monosperma</i>	Fabaceae	2	2	5	0.4	40.0	1.0	15.4	16.7	32.1	NE
<b>Shrubs</b>													
6	Avaram chadi	<i>Senna auriculata</i>	Fabaceae	3	3	5	0.6	0.0	0.3	7.1	30.0	37.1	NE
7	Earuku	<i>Calotropis gigantea</i>	Apocynaceae	5	4	5	1.0	80.0	1.3	27.8	28.6	56.3	NE
8	Unichadi	<i>Landana camera</i>	Verbenaceae	7	4	5	1.4	80.0	1.8	38.9	28.6	67.5	NE
9	Sapathikalli	<i>Cereus pterogonus</i>	Cactus	3	3	5	0.6	60.0	1.0	16.7	21.4	38.1	NE
<b>Herbs/Climber</b>													
10	Perandai	<i>Cissus quadrangularis</i>	Vitaceae	3	3	5	0.6	0.0	0.2	3.8	46.7	50.5	NE
11	Thathapondu	<i>Tridax procumbens</i>	Asteraceae	5	4	5	1.0	80.0	1.3	17.9	15.4	33.2	NE
12	Kolunji chadi	<i>Tephrosia purpurea</i>	Fabaceae	3	3	5	0.6	60.0	1.0	10.7	11.5	22.3	NE
13	Onnakodi	<i>Ipomoea staphylina</i>	Convolvulaceae	2	2	5	0.4	40.0	1.0	7.1	7.7	14.8	NE
14	Korai	<i>Cyperus rotundus</i>	Cyperaceae	4	4	5	0.8	80.0	1.0	14.3	15.4	29.7	NE
15	Nerunji	<i>Tribulus terrestris</i>	Zygophyllales	6	5	5	1.2	100.0	1.2	21.4	19.2	40.7	NE
16	Nayuruvi	<i>Achyranthes aspera</i>	Amaranthaceae	5	5	5	1.0	100.0	1.0	17.9	19.2	37.1	NE

**Table 3.22 Calculation of Species Diversity mine lease area**

S.No	Local name	Scientific name	No. of Species	Pi	In (Pi)	Pi x In (Pi)
<b>Trees</b>						
1	Karuvealan	<i>Prosopis juliflora</i>	4	0.31	-1.18	-0.36
2	Pungam	<i>Millettia pinnata</i>	2	0.15	-1.87	-0.29
3	Unjai maram	<i>Albizia amara</i>	2	0.15	-1.87	-0.29
4	Vetpalai maram	<i>Wrightia tinctoria</i>	3	0.23	-1.47	-0.34
5	Prasu maram	<i>Butea monosperma</i>	2	0.15	-1.87	-0.29
<b>Shrubs</b>						
6	Avaram chadi	<i>Senna auriculata</i>	3	0.14	-1.95	-0.28
7	Earuku	<i>Calotropis gigantea</i>	5	0.24	-1.44	-0.34
8	Unichadi	<i>Landana camera</i>	7	0.33	-1.10	-0.37
9	Sapathikalli	<i>Cereus pterogonus</i>	3	0.14	-1.95	-0.28
<b>Herbs /climber</b>						
10	Perandai	<i>Cissus quadrangularis</i>	3	0.11	-2.23	-0.24
11	Thathapondur	<i>Tridax procumbens</i>	5	0.18	-1.72	-0.31
12	Kolunji chadi	<i>Tephrosia purpurea</i>	3	0.11	-2.23	-0.24
13	Onnakodi	<i>Ipomoea staphylina</i>	2	0.07	-2.64	-0.19
14	Korai	<i>Cyperus rotundus</i>	4	0.14	-1.95	-0.28
15	Nerunji	<i>Tribulus terrestris</i>	6	0.21	-1.54	-0.33
16	Nayuruv	<i>Achyranthes aspera</i>	5	0.18	-1.72	-0.31

**Table 3.23 Species Richness (Index) in mine lease area**

Details	H	H max	Evenness	Species Richness
Tree	1.56	1.61	0.97	1.56
Shrubs	1.54	1.61	0.96	1.31
Herbs	1.89	2.08	0.91	2.10



**Figure 3.26 Species Richness (Index) in mine lease are**



Table 3.24 Flora in 300-meter Radius

S. No	Local Name	Scientific name	Family name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Relative Density	Relative Frequency	IVI	IUCN Conservation Status
<b>Tree</b>													
1	Velikathan maram	<i>Prosopis juliflora</i>	Fabaceae	6	5	10	0.6	0.1	0.2	2.9	70.0	72.9	Not Listed
2	Pongam oiltree	<i>Pongamia pin nata</i>	Fabaceae	7	6	10	0.7	60.0	1.2	16.7	17.1	33.8	Not Listed
3	Panai maram	<i>Borassus flabellifer</i>	Arecaceae	5	4	10	0.5	40.0	1.3	11.9	11.4	23.3	Not Listed
4	Nuna maram	<i>Morinda citrifolia</i>	Rubiaceae	3	3	10	0.3	30.0	1.0	7.1	8.6	15.7	Not Listed
5	Vembu	<i>Azadirachta indica</i>	Meliaceae	4	4	10	0.4	40.0	1.0	9.5	11.4	21.0	Not Listed
6	Echamaram	<i>Phoenix dactylifera L</i>	Arecaceae	4	4	10	0.4	40.0	1.0	9.5	11.4	21.0	Not Listed
7	Unjai maram	<i>Albizia amara</i>	Fabaceae	7	5	10	0.7	50.0	1.4	16.7	14.3	31.0	Not Listed
8	Purasu maram	<i>Butea monosperma</i>	Fabaceae	6	4	10	0.6	40.0	1.5	14.3	11.4	25.7	Not Listed
<b>Shrubs</b>													
1	Unichedi	<i>Lantana camara</i>	Verbenaceae	8	7	10	0.8	0.1	0.2	2.4	61.3	63.6	Not Listed
2	Sundaika	<i>Solanum torvum</i>	Solanaceae	7	6	10	0.7	60.0	1.2	14.3	14.3	28.6	Not Listed
3	Erukku	<i>Calotropis gigantea</i>	apocynaceae	7	7	10	0.7	70.0	1.0	14.3	16.7	31.0	Not Listed
4	Avarai	<i>Senna auriculata</i>	Fabaceae	6	5	10	0.6	50.0	1.2	12.2	11.9	24.1	Not Listed
5	Sappathikalli	<i>Cereus pterogonus</i>	Cactus	7	6	10	0.7	60.0	1.2	14.3	14.3	28.6	Not Listed
6	Kattamanaku	<i>Jatropha gossypifolia L</i>	Euphorbiaceae	8	7	10	0.8	70.0	1.1	16.3	16.7	33.0	Not Listed
7	Karunochi	<i>Vitex negundo</i>	Lamiaceae	6	4	10	0.6	40.0	1.5	12.2	9.5	21.8	Not Listed
<b>Herbs, Climbers &amp; Grass</b>													

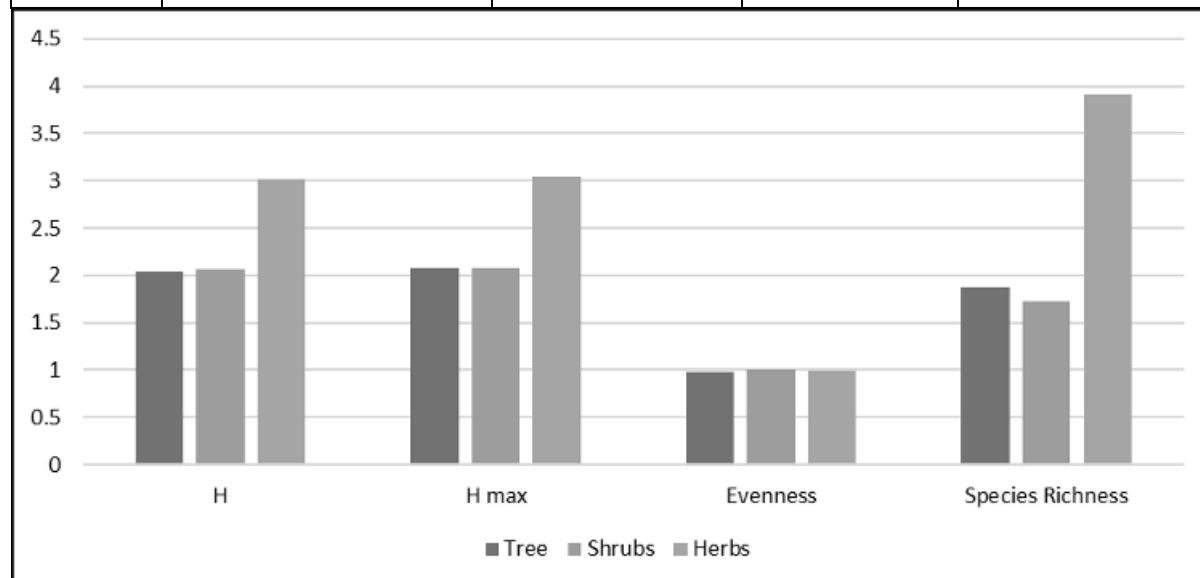
1	Thumbai	<i>Leucas aspera</i>	Lamiaceae	9	7	10	0.9	0.1	0.1	0.8	184.4	185.2	Not Listed
2	Katang kathrikai	<i>Solanum virginianum</i>	Solanaceae	10	8	10	1.0	80.0	1.3	6.0	6.0	12.0	Not Listed
3	Arugampul	<i>Cynodon dactylon</i>	Poaceae	12	6	10	1.2	60.0	2.0	7.2	4.5	11.7	Not Listed
4	Poolai poondu	<i>Aerva lanata</i>	Amaranthaceae	7	7	10	0.7	70.0	1.0	4.2	5.3	9.5	Not Listed
5	Korai	<i>Cyperus rotundus</i>	Cyperaceae	7	6	10	0.7	60.0	1.2	4.2	4.5	8.7	Not Listed
6	Nerunji	<i>Tribulus terrestris</i>	Zygophyllales	7	7	10	0.7	70.0	1.0	4.2	5.3	9.5	Not Listed
7	Nayuruv	<i>Achyranthes aspera</i>	Amaranthaceae	8	5	10	0.8	50.0	1.6	4.8	3.8	8.6	Not Listed
8	Thottalchinungi	<i>Mimosa pudica</i>	Mimosaceae	6	6	10	0.6	60.0	1.0	3.6	4.5	8.1	Not Listed
9	Mulli	<i>Solanum violaceum</i> <i>Ortega</i>	Solanaceae	5	4	10	0.5	40.0	1.3	3.0	3.0	6.0	Not Listed
10	Kombumul	<i>Acanthospermum</i> <i>hispidum</i>	Asteraceae	7	5	10	0.7	50.0	1.4	4.2	3.8	8.0	Not Listed
11	Ponnangani	<i>Alternanthera pungens</i>	Amaranthaceae	6	6	10	0.6	60.0	1.0	3.6	4.5	8.1	Not Listed
12	wild thulasi	<i>Hyptis suaveolens (L.)</i>	Lamiaceae	10	7	10	1.0	70.0	1.4	6.0	5.3	11.3	Not Listed
13	Gopuram Tangi	<i>Andrographis echiodes</i>	Acanthaceae	12	8	10	1.2	80.0	1.5	7.2	6.0	13.2	Not Listed
14	Amman Paccharisi	<i>Euphorbia hirta</i>	Euphorbiaceae	9	9	10	0.9	90.0	1.0	5.4	6.8	12.2	Not Listed
15	Paca poondu	<i>Pavonia gallaensis</i>	Malvaceae	8	5	10	0.8	50.0	1.6	4.8	3.8	8.6	Not Listed
16	Perandai	<i>Cissus quadrangularis</i>	Vitaceae	7	6	10	0.7	60.0	1.2	4.2	4.5	8.7	Not Listed
17	Vishnukrandi	<i>Evolvulus alsinoides</i>	Convolvulaceae	7	7	10	0.7	70.0	1.0	4.2	5.3	9.5	Not Listed
18	Musumusukkai	<i>Mukia maderaspatana</i>	Cucurbitaceae	7	7	10	0.7	70.0	1.0	4.2	5.3	9.5	Not Listed
19	Sirupunaikkali	<i>Leucas aspera</i>	Passifloraceae	8	6	10	0.8	60.0	1.3	4.8	4.5	9.3	Not Listed
20	Nagathali	<i>Solanum virginianum</i>	Cactaceae	7	6	10	0.7	60.0	1.2	4.2	4.5	8.7	Not Listed
21	Agave	<i>Cynodon dactylon</i>	Asparagaceae	7	5	10	0.7	50.0	1.4	4.2	3.8	8.0	Not Listed

**Table 3.25 Calculation of Species Diversity in 300 m Radius**

S. No	Common name	Scientific name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
<b>Tree</b>						
1	Velikathan maram	<i>Prosopis juliflora</i>	6	0.14	-1.95	-0.28
2	Pongam oiltree	<i>Pongamia pin nata</i>	7	0.17	-1.79	-0.30
3	Panai maram	<i>Borassus flabellifer</i>	5	0.12	-2.13	-0.25
4	Nuna maram	<i>Morinda citrifolia</i>	3	0.07	-2.64	-0.19
5	Vembu	<i>Azadirachta indica</i>	4	0.10	-2.35	-0.22
6	Echamaram	<i>Phoenix dactylifera L</i>	4	0.10	-2.35	-0.22
7	Unjai maram	<i>Albizia amara</i>	7	0.17	-1.79	-0.30
8	Purasu Maram	<i>Butea monosperma</i>	6	0.14	-1.95	-0.28
<b>H (Shannon Diversity Index) =2.04</b>						
<b>Shrubs</b>						
1	Unichedi	<i>Lantana camara</i>	8	0.14	-1.96	-0.28
2	Sundaika	<i>Solanum torvum</i>	7	0.12	-2.10	-0.26
3	Erukku	<i>Calotropis gigantea</i>	7	0.12	-2.10	-0.26
4	Avarai	<i>Senna auriculata</i>	6	0.11	-2.25	-0.24
5	Sappathikalli	<i>Cereus pterogonus</i>	7	0.12	-2.10	-0.26
6	Kattamanaku	<i>Jatropha gossypifolia L</i>	8	0.14	-1.96	-0.28
7	Karunochi	<i>Vitex negundo</i>	6	0.11	-2.25	-0.24
<b>H (Shannon Diversity Index) =2.07</b>						
<b>HERBS</b>						
1	Thumbai	<i>Leucas aspera</i>	9	0.05	-2.91	-0.16
2	Kantang kathrikai	<i>Solanum virginianum</i>	10	0.06	-2.81	-0.17
3	Arugampul	<i>Cynodon dactylon</i>	12	0.07	-2.63	-0.19
4	Poolai poondu	<i>Aerva lanata</i>	7	0.04	-3.17	-0.13
5	Korai	<i>Cyperus rotundus</i>	7	0.04	-3.17	-0.13
6	Nerunji	<i>Tribulus terrestris</i>	7	0.04	-3.17	-0.13
7	Nayuruvi	<i>Achyranthes aspera</i>	8	0.05	-3.03	-0.15
8	Thottalchinungi	<i>Mimosa pudica</i>	6	0.04	-3.32	-0.12
9	Mulli	<i>Solanum violaceum Ortega</i>	5	0.03	-3.50	-0.11
10	Kombumul	<i>Acanthospermum hispidum</i>	7	0.04	-3.17	-0.13
11	Ponnangani	<i>Alternanthera pungens</i>	6	0.04	-3.32	-0.12
12	wild thulasi	<i>Hyptis suaveolens (L.)</i>	10	0.06	-2.81	-0.17
13	Gopuram Tangi	<i>Andrographis echinoides</i>	12	0.07	-2.63	-0.19
14	Amman Paccharisi	<i>Euphorbia hirta</i>	9	0.05	-2.91	-0.16
15	Paca poondu	<i>Pavonia gallaensis</i>	8	0.05	-3.03	-0.15
16	Perandai	<i>Cissus quadrangularis</i>	7	0.04	-3.17	-0.13
17	Vishnukrandi	<i>Evolvulus alsinoides</i>	7	0.04	-3.17	-0.13
18	Musumusukkai	<i>Mukia aderspatana</i>	7	0.04	-3.17	-0.13
19	Sirupunaikkali	<i>Passiflora foetida</i>	8	0.05	-3.03	-0.15
20	Nagathali	<i>Opuntia dillenii</i>	7	0.04	-3.17	-0.13
21	Agave	<i>Agave weberi</i>	7	0.04	-3.17	-0.13
<b>H (Shannon Diversity Index)</b>						

**Table 3.26 Species Richness (Index) in 300 m Radius**

Details	H	H max	Evenness	Species Richness
Tree	2.04	2.08	0.98	1.87
Shrubs	2.07	2.08	1.00	1.73
Herbs	3.02	3.04	0.99	3.91



**Figure 3.27 Species Richness (Index) in 300 m Radius**

**Table 3.27 Flora in Buffer Zone**

S. No	Local Name	Scientific name	Family name
<b>Tree</b>			
1	Vembu	<i>Azadirachta indica</i>	Meliaceae
2	Pongam oiltree	<i>Pongamia pinnata</i>	Fabaceae
3	Karuvelam	<i>Acacia nilotica</i>	Mimosaceae
4	Thennai maram	<i>Cocos nucifera</i>	Arecaceae
5	Arasanmaram	<i>Ficus religiosa</i>	Moraceae
6	Puliyamaram	<i>Tamarindus indica</i>	Legumes
7	Punnai	<i>Calophyllum inophyllum</i>	Calophyllaceae
8	Athi	<i>Ficus recemosa</i>	Moraceae
9	Vazhaimaram	<i>Musa</i>	Musaceae
10	Kadukkai	<i>Terminalia chebula</i>	Combretaceae
11	Nettilinkam	<i>Polylathia longifolia</i>	Annonaceae
12	Amanakku	<i>Ricinus communis</i>	Euphorbiaceae
13	Perumungil	<i>Bambusa bambos</i>	Poaceae
14	Karungali	<i>Acacia sundra</i>	Legumes
15	Sapota	<i>Manilkara zapota</i>	Sapotaceae
16	Eucalyptus	<i>Eucalyptus globules</i>	Myrtaceae
17	Navalmaram	<i>Syzygium cumini</i>	Myrtaceae
18	Ezhumuchaipalam	<i>Citrus lemon</i>	Rutaceae

19	Alamaram	<i>Ficus benghalensis</i>	Moraceae
20	Panai maram	<i>Borassus flabellifer</i>	Arecaceae
21	Manga	<i>Mangifera indica</i>	Anacardiaceae
22	Thekku	<i>Tectona grandis</i>	Verbenaceae
23	Nelli	<i>Emblia officinalis</i>	Phyllanthaceae
24	Nettilinkam	<i>Polylathia longifolia</i>	Annonaceae
25	Karuvelam maram	<i>Vachellia nilotica</i>	Fabaceae
26	Palamaram	<i>Artocarpus heterophyllus</i>	Moraceae
27	Vadanarayani	<i>Delonix elata</i>	Fabaceae
28	Marudaani	<i>Lawsonia inermis</i>	Lythraceae
29	Manja kadambai	<i>Adina cordifolia</i>	Rubiaceae
30	Pappali maram	<i>Carica papaya L</i>	Caricaceae
31	Nochi	<i>Vitex negundo</i>	Verbenaceae
32	Vilvam	<i>Aegle marmelos</i>	Rutaceae
33	Nuna maram	<i>Morinda citrifolia</i>	Rubiaceae
34	Koyya	<i>Psidium guajava</i>	Myrtaceae
35	Seethapazham	<i>Annona reticulata</i>	Annonaceae
36	Velipparuthi	<i>Murraya koenigii</i>	Asclepiadaceae
37	Moonghil	<i>Bambusa bambo</i>	Poaceae
<b>Shrubs</b>			
1	Avarai	<i>Senna auriculata</i>	Fabaceae
2	Sundaika	<i>Solanum torvum</i>	Solanaceae
3	Arali	<i>Nerium indicum</i>	Apocynaceae
4	Idlipoo	<i>xoracoc cine</i>	Rubiaceae
5	Neermulli	<i>Hydrophila auriculata</i>	Acanthaceae
6	Icham	<i>Phoenix pusilla</i>	Arecaceae
7	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
8	Kattamanakku	<i>Jatropha curcas</i>	Euphorbiaceae
9	Thuthi	<i>Abutilon indicum</i>	Meliaceae
10	Chemparuthi	<i>Hibiscu rosa-sinensis</i>	Malvaceae
11	Kundumani	<i>Abrus precatorius</i>	Fabaceae
12	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
13	Thottalchinungi	<i>Mimosa pudica</i>	Mimosaceae
<b>Herbs, Climber, Creeper, Grass &amp; Cactus</b>			
1	Nayuruv	<i>Achyranthes aspera</i>	Amaranthaceae
2	Vetukaayapoond	<i>Tridax procumbens</i>	Asteraceae
3	Kaattu piral	<i>Hibiscus hispidissimus</i>	Malvaceae
4	Kuppaimeni	<i>Acalypha indica</i>	Euphorbiaceae
5	Karisilanganni	<i>Eclipta prostrata</i>	Asteraceae
6	Korai	<i>Cyperus rotundus</i>	Cyperaceae
7	Kumattikkirai	<i>Allmania nodiflora</i>	Amaranthaceae
8	Kunnakora	<i>Cyperus compressus</i>	Cyperaceae

9	Keelaneeli	<i>Phyllanthus niruri</i>	Phyllanthaceae
10	Kanamvazha	<i>Commelina benghalensis</i>	Commelinaceae
11	Thumbai	<i>Leucas aspera</i>	Lamiaceae
12	Partiniyam	<i>Parthenium</i>	Asteraceae
13	Thoiya keerai	<i>Digeria muricata</i>	Amaranthaceae
14	Pulliyari	<i>Oxalis corniculata</i>	Oxalidaceae
15	Mukurattai	<i>Boerhavia diffusa</i>	Nyctaginaceae
16	Kaduku	<i>Brassica juncea</i>	Brassicaceae
17	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
18	Arugampul	<i>Cynodon dactylon</i>	Poaceae
19	Manjal	<i>Curcuma longa</i>	Zingiberaceae
20	Manathakkali	<i>Solanum nigrum</i>	Solanaceae
21	Kanamvazha	<i>Commelina benghalensis</i>	Commelinaceae
22	Nai kadugu	<i>Celome viscosa</i>	Capparidaceae
23	Koraikkilangu	<i>Cyperus articulatus</i>	Cyperaceae
24	Karisilanganni	<i>Eclipta prostrata</i>	Asteraceae
25	Korai	<i>Cyperus rotundus</i>	Cyperaceae
26	Kunnakora	<i>Cyperus compressus</i>	Cyperaceae
27	Mukurattai	<i>Boerhavia diffusa</i>	Nyctaginaceae
28	Kovai	<i>Coccinia grandis</i>	Cucurbitaceae
29	Perandai	<i>Cissus quadrangularis</i>	Vitaceae
30	Mudakkotan	<i>Cardiospermum helicacabum</i>	Sapindaceae
31	Sangupoo	<i>Clitoria ternata</i>	Fabaceae
32	Malli	<i>Jasminum augustifolium</i>	Oleaceae
33	Vallikeerai	<i>Ipomoea aquatica</i>	Convolvulaceae
34	Siru puladi	<i>Desmodium triflorum</i>	Fabaceae
35	Sithrapaalavi	<i>Euphorbia prostrata</i>	Euphorbiaceae
36	mookuthi poondu	<i>Wedelia trilobata</i>	Asteraceae
37	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
38	Chevvarakupul	<i>Chloris barbata</i>	Amaranthaceae
39	Nagathali	<i>Opuntia dillenii</i>	Cactaceae

### **Forest Vegetation**

There Are No Biosphere Reserves or National Parks or Important Bird Areas (Ibas), Sanamavu R.F. Located On 8.8 Km NE, Denkanikottai R. F9.6km SE, Udedurgam R.F12.3km SE, Naganur R.F 11.6km SW, Thally R.F 17.6km SW, Cauvery North WLS 12.45km SW. The *Azadirachta Indica*, *Vachellia Leucophloea*, *Albizia Amara*, *Zizyphus Oenoplia*, *Pterolobium Hexapetalum*, *Lannea Coromandelica*, *Melia Azedarach*, *Mundulea Sericea*, *Pedaliu Murex*, *Pergularia Daemia*, *Barleria Prionitis*, *Lantana Camara*, *Agave Weberi*. These Types of Plants Are Abundant in The Reserve Forest. From The Study, It Is

Confirmed That the Area Under Study (Mine Lease Area and the 10 Km Buffer Zone) Is Not Ecologically Sensitive.

### 3.5.2 Fauna

The faunal survey was carried out for Mammals, Birds, Reptiles, Amphibians and Butterflies. There are no rare, endangered, threatened (RET) and endemic species present in Mine lease area.

**Table 3.28 Methodology applied during survey of fauna**

S. No.	Taxa	Method of Sampling	References
1	Insects	Random walk, Opportunistic observations	Pollard (1977); Kunte (2000)
2	Reptiles	Visual encounter survey (Direct Search)	Daniel J.C (2002)
3	Amphibians	Visual encounter survey (Direct Search)	
4	Mammals	Tracks and Signs	Menon V (2014)
5	Avian	Random walk, Opportunistic observations.	Grimmett R (2011); Ali S (1941)

#### ***Fauna in Core Zone***

A total of 26 varieties of species were observed in the Core zone (Table.3.29). Among them are 8 Insects (31%), 5 Reptiles (19%), 4 Mammals (15%) and 9 Avian (35%). A total of 26 species belonging to 20 families were recorded from the core area. The study shows that number of species decreases towards the mining area. This might be due the lack of vegetation. None of these species in the core zone are threatened or endemic. The survey was conducted to identify species listed in IUCN Red List. According to the field data, any species are not of Schedule I and nine species are of schedule IV. 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 3.29.

#### ***Fauna in Buffer Zone***

A total of 50 species belonging to 36 families have been recorded from the buffer zone area (Table.3.28). Based on habitat classification the majority of species were Birds 15 (30%), followed by Insects 14 (28%), Reptiles 13 (26%), Mammals 5 (10%) and Amphibians 3 (6%). There are 7 Schedule II species and 27 species are under schedule IV according to Indian wild life Act 1972. A total fifteen species of bird were sighted in the study area. There are no critically endangered, endangered, vulnerable and endemic species were observed.

**Table 3.29 Fauna in Core Zone**

S. No	Common name/English Name	Family Name	Scientific Name	Schedule list wildlife protection act 1972	IUCN Red List data
<b>Insects</b>					
1	Plain Tiger	Nymphalidae	<i>Dananeuschrysippus</i>	NL	NE
2	Tawny coster	Nymphalidae	<i>Danaus chrysippus</i>	Schedule IV	LC
3	Red-veined darter	Libellulidae	<i>Sympetrum fonscolombii</i>	NE	LC
4	Grasshopper	Acrididae	<i>Hieroglyphus sp</i>	NL	LC
5	Termite	Blattodea	<i>Hamitermes silvestri</i>	NE	LC
6	Blue tiger	Nymphalidae	<i>Tirumala limniace</i>	Schedule IV	LC
7	Striped tiger	Nymphalidae	<i>Danaus plexippus</i>	Schedule IV	LC
8	Ant	Formicidae	<i>Camponotus vicinus</i>	NL	NL
<b>Reptiles</b>					
1	Garden lizard	Agamidae	<i>Calotes versicolor</i>	NE	NE
2	Common house gecko	Gekkonidae	<i>Hemidactylus frenatus</i>	NE	NE
3	Rat snake	Colubridae	<i>Ptyas mucosa</i>	Sch II (Part II)	LC
4	Common krait	Elapid snakes	<i>Bungarus caeruleus</i>	Schedule IV	LC
5	Fan-Throated Lizard	Agamidae	<i>Sitanaponticeriana</i>	NL	LC
<b>Mammals</b>					
1	Indian Field Mouse	Muridae	<i>Mus booduga</i>	Schedule IV	LC
2	Asian Small Mongoose	Herpestidae	<i>Herpestes javanicus</i>	Schedule II	LC
3	Rat	Murids	<i>Rattusrattus</i>	Schedule IV	LC
4	Rat snake	Colubridae	<i>Ptyas mucosa</i>	Sch II (Part II)	LC
<b>Avian</b>					
1	Common myna	Sturnidae	<i>Acridotheres tristis</i>	NE	LC
2	Black drongo	Dicruridae	<i>Dicrurus macrocercus</i>	NE	LC
3	Koel	Cucalidae	<i>Eudynamys scolopaceus</i>	Schedule IV	LC
4	Common cuckoo	Cucalidae	<i>Cuculus canorus</i>	NE	LC
5	House crow	Corvidae	<i>Corvus splendens</i>	NE	LC
6	Crow Pheasant	Cucalidae	<i>Centropus sinensis</i>	Schedule IV	LC
7	Rose-ringed parakeet	Psittaculidae	<i>Psittacula krameri</i>	Schedule IV	LC
8	Asian green bee-eater	Meropidae	<i>Meropsorientalis</i>	NL	LC
9	Cattle egret	Ardeidae	<i>Bubulcus ibis</i>	NE	LC

\*NE- Not evaluated; LC- Least Concern, NT –Near Threatened, T- Threatened



**Table 3.30 Fauna in Buffer Zone**

S. No	Common name/ English Name	Family Name	Scientific Name	Schedule list wildlife Protection act 1972	IUCN Red List data
<b>Insects</b>					
1	Honey bee	Apidae	<i>Apis cerana</i>	Schedule IV	LC
2	Blue tiger	Nymphalidae	<i>Tirumala limniace</i>	Schedule IV	LC
3	Common Indian crow	Nymphalidae	<i>Euploea core</i>	Schedule IV	LC
4	Tawny coster	Nymphalidae	<i>Danaus chrysippus</i>	Schedule IV	LC
5	Grasshopper	Acrididae	<i>Hieroglyphus sp</i>	NL	LC
6	Jewel beetle	Buprestidae	<i>Eurythyrea austriaca</i>	Schedule IV	NA
7	Red-veined darter	Libellulidae	<i>Sympetrum fonscolombii</i>	NL	LC
8	Ant	Formicidae	<i>Camponotus vicinus</i>	NL	NL
9	Praying mantis	Mantidae	<i>mantis religiosa</i>	NL	NL
10	Dragonfly	Gomphidae	<i>Ceratogomphus pictus</i>	Schedule IV	LC
11	Milkweed butterfly	Nymphalidae	<i>Danainae</i>	NL	LC
12	Striped tiger	Nymphalidae	<i>Danaus plexippus</i>	Schedule IV	LC
13	Lesser grass blue	Lycaenidae	<i>Zizina otis indica</i>	Schedule IV	LC
14	Common Tiger	Nymphalidae	<i>Danaus genutia</i>	Schedule IV	LC
<b>Reptiles</b>					
1	Garden lizard	Agamidae	<i>Calotes versicolor</i>	NL	LC
2	Chameleon	Chamaeleonidae	<i>Chameleon zeylanicus</i>	Schedule II	LC
3	Fan-Throated Lizard	Agamidae	<i>Sitanaponticeriana</i>	NL	LC
4	Common house gecko	Gekkonidae	<i>Hemidactylus frenatus</i>	NL	LC
5	Rat snake	Colubridae	<i>Ptyas mucosa</i>	Sch II (Part II)	LC
6	Olive keel back water snake	Natricidae	<i>Atretium schistosum</i>	Sch II (Part II)	LC
7	Whip Snake	Elapidae	<i>Dryphis nasutus</i>	Sch II (Part II)	LC
8	Common krait	Elapid snakes	<i>Bungarus caeruleus</i>	Schedule IV	LC
9	Indian wall lizard	Gekkonidae	<i>Hemidactylus flaviviridis</i>	Schedule IV	NL
10	Saw scaled viper	Elapidae	<i>Echis carinatus</i>	Sch II (Part II)	LC
11	Brahminy skink	Scincidae	<i>Eutropis carinata</i>	NL	LC
12	Russell's viper	Viperidae	<i>Vipera russeli</i>	Sch II (Part II)	LC
13	Common skink	Scincidae	<i>Mabuya carinatus</i>	NL	LC
<b>Mammals</b>					
1	Indian palm squirrel	Sciuridae	<i>Funambulus palmarum</i>	Schedule IV	LC

2	Indian Field Mouse	Muridae	<i>Mus booduga</i>	Schedule IV	LC
3	Indian hare	Leporidae	<i>Lepus nigricollis</i>	Schedule IV	LC
4	Asian Small Mongoose	Herpestidae	<i>Herpestes javanicus</i>	Schedule (Part II)	LC
5	Brown rat	Muridae	<i>Rattus norvegicus</i>	Schedule IV	LC
<b>Aves</b>					
1	Koel	Cuculidae	<i>Eudynamys</i>	Schedule IV	LC
2	Cattle egret	Ardeidae	<i>Bubulcus ibis</i>	NL	LC
3	Common myna	Sturnidae	<i>Acridotheres tristis</i>	NL	LC
4	House crow	Corvidae	<i>Corvus splendens</i>	NL	LC
5	Asian green bee-eater	Meropidae	<i>Merops orientalis</i>	NL	LC
6	Red-vented Bulbul	Pycnonotidae	<i>Pycnonotus cafer</i>	Schedule IV	LC
7	Rose-ringed parakeet	Psittaculidae	<i>Psittacula krameri</i>	Schedule IV	LC
8	Shikra	Accipitridae	<i>Accipiter badius</i>	NL	LC
9	Common quail	Phasianidae	<i>Coturnix coturnix</i>	Schedule IV	LC
10	Black drongo	Dicruridae	<i>Dicrurus macrocercus</i>	Schedule IV	LC
11	Two-tailed Sparrow	Dicruridae	<i>Passer domesticus</i>	Schedule IV	LC
12	Grey Francolin	Phasianidae	<i>Francolinus pondicerianus</i>	Schedule IV	LC
13	Common Quail	Phasianidae	<i>Coturnix coturnix</i>	Schedule IV	LC
14	White-breasted waterhen	Rallidae	<i>Amaurornis phoenicurus</i>	NL	LC
15	Common Coot	Rallidae	<i>Fulica atra</i>	Schedule IV	LC
<b>Amphibians</b>					
1	Indian Burrowing frog	Dicroglossidae	<i>Sphaerotheca breviceps</i>	Schedule IV	LC
2	Pond Frog	Ranidae	<i>Rana hexadactyla</i>	Schedule IV	LC
3	Tiger Frog	Chordata	<i>Hoplobatrachus tigerinus (Rana tigerina)</i>	Schedule IV	LC

\*NL-Not listed, LC-Least concern, NT-Near threatened.

### ***Aquatic Vegetation***

The field survey for assessing the aquatic vegetation was also undertaken during the study period. Fish is commonly found in all types of natural water bodies and very common source of food in Eastern South India. The local fishermen were enquired and also the secondary resources were reviewed to collect information on the fishes found in the study area. Few common species are; *Catla (Catla catla)*, *Channa striata*, *Oreochromis niloticus*.

**Table 3.31 Aquatic Fauna and Flora**

Sl. No	Common Name	Scientific name	Family Name	IUCN Red List of Threatened Species
<b>Flora</b>				
1	Water hyacinth	<i>Eichornia crassipes</i>	Pontederiaceae	NA
2	Blue waterlily	<i>Nymphaea nouchali</i>	Nymphaeaceae	LC
3	Cross Grass	<i>Carex cruciata</i>	Cyperaceae	NA
4	Scutch grass	<i>Cynodon dactylon</i>	Poaceae	LC
<b>Fauna</b>				
5	Thilopia	<i>Oreochromis niloticus</i>	Cichlidae	LC
6	Catla	<i>Catla catla</i>	Cyprinidae	LC
7	Koravi meen	<i>Channa striata</i>	Channidae	LC
8	Roghu	<i>Labeo rohita</i>	Cyprinidae	LC

\*LC- Least Concern, NA-Not yet assessed

### **Phytoplankton's:**

Microcystis, Nitzschia, Oscillatoria, Navicula and Pediastrum sps.

### **Zooplanktons:**

These consist of microscopic organisms from groups Protozoa, Rotifers, Cladocera and Copepoda etc. Some common species of zooplanktons are; *Deflandre*, *Arcella vulgaris*, *Centropyxis spinosa*, *Arcella discoides*, *Arcella hemispherica*, *Centropyxis aculeate*, *Trigonopyxis arcuata*, *Brachionus calyciflorus*, *Lecane curvicornis*, *Brachionus angularis*, *Polyarthra vulgaris*, *Filinia longiseta*.

### **Food chain**

The food chain in aquatic ecosystems often begins with the algae or phytoplankton producers, and then the zooplankton that feed on them. This type of food chain is found in nearby lakes and rivers with phytoplankton, zooplankton, fish *Artiola* gray and humans.

Ex: Phytoplankton→Zooplankton→small fish→large fish → Human

### **3.5.3 Agriculture Horticulture in Krishnagiri district:**

Major horticulture crops cultivated in this district are fruits crops like mango, banana, sapota and guava, vegetables like brinjal, bhendi, capsicum, onion and chillies, spices like turmeric and pepper, and flower crops like rose, gerbera and carnations.

### **Major Agricultural Crops**

Major horticulture crops cultivated in this district are vegetables crops like tomato, brinjal, chillies, onion and turmeric. Details of major field crops and Agricultural in 1km radius is given in Table. 3.32.

**Table 3.32 Major Crops in 1km radius**

S. No	Major crops	Scientific name	Families
1	Sorghum	<i>Sorghum bicolor</i>	Poaceae
2	Gingelly	<i>Sesamum indicum</i>	Pedaliaceae

3	Groundnut	<i>Arachis hypogaea</i>	Legumes
4	Millets	<i>Panicum miliaceum L</i>	Poaceae
5	Sesame	<i>Sesamum indicum</i>	Pedaliaceae
6	Cotton	<i>Gossypium herbaceum</i>	Malvaceae

### **Major Horticulture Crops**

Horticulture includes cultivation of fruits, vegetables, nuts, seeds, herbs, sprouts, mushrooms, algae, flowers, seaweeds and non-food crops such as grass and ornamental trees and plants. It also includes plant conservation, landscape restoration, landscape and garden design.

### **Horticulture**

Major horticulture crops cultivated in Krishnagiri district are fruit crops like mango, banana, Sapota and guava, vegetables like tomato, brinjal, Veandai, chillies, onion and tapioca, spices like turmeric. Details of major field crops and horticulture cultivation in 1km radius is given in Table 3.33.

**Table 3.33 Major Field Crops & Horticulture cultivation in 1km radius.**

S. No	Common Name	Scientific Name	Family
<b>Major Horticultural Crops</b>			
1	Guava	<i>Psidium guajava</i>	Myrtaceae
2	Sapota	<i>Manilkara zapota</i>	Sapotaceae
3	Lemon	<i>Citrus × limon</i>	Rutaceae
4	Papaya	<i>Carica papaya</i>	Caricaceae
5	mango	<i>Mangifera indica</i>	Anacardiaceae
6	banana	<i>Musa × paradisiaca</i>	Musaceae
<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	Bottle Gourd	<i>Lagenaria siceraria</i>	Cucurbits
12	Veandai kai	<i>Abelmoschus esculentus</i>	Mallows
13	Moringa	<i>Moringa oleifera</i>	Moringaceae

### **Results**

Biological assessment of the site was done to identify ecologically sensitive areas and whether there are any rare, endangered, endemic or threatened (REET) species of flora & fauna in the core area as well its buffer zone to be impacted. The study has also been designed to suggest suitable mitigation measures, if necessary, for protection of wildlife habitats and conservation of REET species if any. The study found that there is no endemic, endangered migratory fauna found in the area according to IUCN Red List. This area is not also a migratory path of any faunal species. Hence, this small mining operation over short period of time will not have any significant impact on the surrounding flora and fauna.

### **3.6 SOCIO ECONOMICS ENVIRONMENT**

#### **3.6.1 Introduction**

An essential part of environmental study is socio-economic environment incorporating various facts related to socio-economic conditions in the area, which deals with the total environment. Socio economic study 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 of aesthetic significance such as temples, historical monuments etc. at the baseline level. This would help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project. Socio-economic study of an area provides a good opportunity to assess the socio -economic condition and possibly makes a change in living and social standards of the particular area benefitted due to the project.

#### **3.6.2 Objectives of the Study**

The main objectives of the study are as follows:

- ❖ To know the current socio-economic condition in the region to cover the sub sectors education, health, sanitation, and water & food security.
- ❖ To recommend practical strategic interventions in the sector.
- ❖ To help in providing better living standards.
- ❖ To understand skill sets and plan for employment opportunities which shall be created.

#### **3.6.3 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

#### **3.6.4 Methodology & Analysis**

Data for this project was collected via a combination of secondary sources and primary source interviews, questionnaires, field research) in the study area.

#### **3.6.5 Socio-Economic Status of Study area**

The study area covers 14 Villages including Achettipalli, Anekollu, Bairamangalam, Belagundapalli, Hosappuram, Jagirkarupalli, Kundumaranapalli, Mugalur, Muthuganapalli, Nagondapalli, Onalvadi, Panchakshipuram, Poonapalli. As Gopanapalli is the village in which the proposed project site is located, the summary of population facts for the village is exclusively provided in Table 3.34 and for other 13 villages in Tables 3.35- 3.37.

**Table 3.34 Gopanapalli Village Population Facts**

<b>Gopanapalli</b>	
Number of Households	650
Population	3010
Male Population	1534
Female Population	1476
Children Population	316
Sex-ratio	962
Literacy	70.04%
Male Literacy	78.37%
Female Literacy	61.39%
Scheduled Tribes (ST) %	12
Scheduled Caste (SC) %	888
Total Workers	1704
Main Worker	1368
Marginal Worker	336

Source: <https://www.census2011.co.in/data/village/643819-gopanapalli-tamil-nadu.html>

**Table 3.35 Population and Literacy Data of Study Area**

<b>Village</b>	<b>No of Households</b>	<b>Total Population Person</b>	<b>Total Population Male</b>	<b>Total Population Female</b>	<b>Literates Population Person</b>	<b>Literates Population Male</b>	<b>Literates Population Female</b>	<b>Illiterate Persons</b>	<b>Illiterate Male</b>	<b>Illiterate Female</b>
Achettipalli	697	3066	1562	1504	1861	1056	805	1205	506	699
Anekollu	628	2858	1471	1387	1482	861	621	1376	610	766
Bairamangalam	1207	4932	2569	2363	3376	1940	1436	1556	629	927
Belagundapalli	1018	4092	2073	2019	2824	1575	1249	1268	498	770
Hosappuram	763	3561	1830	1731	2048	1166	882	1513	664	849
Jagirkarupalli	393	1905	1004	901	1046	630	416	859	374	485
Kundumaranapalli	863	3867	1972	1895	2243	1342	901	1624	630	994
Mugalur	609	2593	1352	1241	1471	862	609	1122	490	632
Muthuganapalli	281	1135	581	554	634	365	269	501	216	285
Nagondapalli	674	2929	1513	1416	1918	1110	808	1011	403	608
Onalvadi	1607	6656	3411	3245	4443	2475	1968	2213	936	1277
Panchakshipuram	442	1882	973	909	1166	664	502	716	309	407
Poonapalli	738	3061	1542	1519	2000	1111	889	1061	431	630

**Table 3.36 Educational Facilities & Water & Drainage Facilities Data of Study Area**

<b>Village</b>	<b>Private Primary School (Numbers)</b>	<b>Govt Vocational Training School/ITI (Numbers)</b>	<b>Primary Health Centre (Numbers)</b>	<b>Tap Water Untreated</b>	<b>River/Canal</b>	<b>Is the Area Covered under Total Sanitation Campaign (TSC)?</b>	<b>Telephone (landlines)</b>	<b>Public Bus Service</b>	<b>Gravel (kutcha) Roads</b>	<b>Commercial Bank</b>	<b>Agricultural Credit Societies</b>	<b>Self - Help Group (SHG)</b>	<b>Nutritional Centres- Anganwadi Centre</b>	<b>Community Centre with/without TV</b>	<b>Power Supply for Domestic Use</b>
Achettipalli	2	0	0	1	2	2	1	1	1	2	2	1	1	1	1
Anekollu	2	0	0	1	1	1	1	1	1	2	2	1	1	1	1
Bairamangalam	2	0	0	1	2	1	1	2	1	2	2	1	1	1	1
Belagundapalli	1	0	0	1	2	2	1	1	1	2	2	1	1	2	1
Hosappuram	2	0	0	1	2	2	2	1	1	2	2	1	1	1	1
Jagirkarupalli	2	0	0	1	2	1	2	2	1	2	2	1	1	1	1
Kundumaranapalli	1	0	0	1	2	1	2	1	1	2	2	1	1	1	1
Mugalur	2	0	0	1	2	2	1	1	1	2	2	1	1	2	1
Muthuganapalli	2	0	0	1	2	2	2	1	1	2	2	1	1	2	1
Nagondapalli	2	0	0	1	2	1	1	1	1	2	2	1	1	1	1
Onalvadi	1	0	0	1	2	2	1	1	1	2	2	1	1	1	1
Panchakshipuram	2	0	0	1	2	1	1	2	1	2	2	1	1	2	1
Poonapalli	1	0	0	1	2	1	1	1	1	2	2	1	1	1	1

**Table 3.37 Other Facilities in the Study Area**

<b>Village</b>	<b>Total Worker Population Person</b>	<b>Total Worker Population Male</b>	<b>Total Worker Population Female</b>	<b>Main Working Population Person</b>	<b>Main Working Population Male</b>	<b>Main Working Population Female</b>	<b>Main Cultivator Population Person</b>	<b>Main Agricultural Labourers Population Person</b>	<b>Main Other Workers Population Person</b>	<b>Non-Working Population Person</b>
Achettipalli	1429	987	442	1405	980	425	530	509	307	1637
Anekollu	1713	918	795	1496	832	664	923	446	94	1145
Bairamangalam	2330	1573	757	1723	1257	466	725	282	690	2602
Belagundapalli	1839	1255	584	1623	1144	479	309	394	900	2253
Hosappuram	1822	1115	707	1693	1064	629	427	1118	119	1739
Jagirkarupalli	1058	612	446	883	566	317	535	121	193	847
Kundumaranapalli	1784	1164	620	1562	1099	463	513	454	560	2083
Mugalur	1072	851	221	1039	845	194	530	361	147	1521
Muthuganapalli	599	371	228	556	353	203	66	347	142	536
Nagondapalli	1310	908	402	928	638	290	203	104	575	1619
Onalvadi	2861	2009	852	2524	1813	711	400	525	1548	3795
Panchakshipuram	824	611	213	801	600	201	521	172	97	1058
Poonapalli	1424	1001	423	890	648	242	311	188	366	1637



### **3.6.6 Recommendation and Suggestion**

- ❖ Awareness program should be conducted to make the population aware of education and to get a better livelihood.
- ❖ Vocational training programme should 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 should be generated.
- ❖ Health care centre and ambulance facility should be provided to the population to get easy access to medical facilities. Apart from that, as these areas are prone to various diseases a hospital with modern facilities should be opened on a priority basis in a central place to provide better health facilities to the villagers around the project.
- ❖ While developing an Action Plan, it is very important to identify the population who falls under the marginalized and vulnerable groups. Therefore, 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 in the study area 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 a 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.

### **3.7 TRAFFIC DENSITY**

The traffic survey conducted based on the transportation route of material, the Rough Stone and gravel is proposed to be transported mainly through Village Road and Rayakottai-Hosur (SH-85) as shown in Table 3.38 and in Figure 3.28. Traffic density measurements were 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. Direction for counting the traffic. At the end of each hour, fresh counting and recording was undertaken.

**Table 3.38 Traffic Survey Locations**

Station Code	Road Name	Distance and Direction	Type of Road
TS1	Village Road	0.58 km-SW	Village Road
TS2	SH-85 Attibele - Royakottai	3.2 km East	SH-85Attibele - Royakottai

Source: On-site monitoring by GTMS FAE & TM

**Table 3.39 Existing Traffic Volume**

Station code	HMV		LMV		2/3 Wheelers		Total PCU
	No	PCU	No	PCU	No	PCU	
TS1	65	195	51	51	82	41	287
TS2	98	285	56	56	99	50	391

Source: On-site monitoring by GTMS FAE & TM

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

**Table 3.40 Rough Stone Transportation Requirement**

Transportation of Rough and Gravel per day		
Capacity of trucks	No. of Trips per day	Volume in PCU
15 tonnes	8	24

Source: Approved Mining Plan

**Table 3.41 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 – 1960guidelines
Village Road	287	24	311	1200
SH-85 Attibele - Royakottai	391	24	415	1200

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

- Due to these projects the existing traffic volume will not exceed the traffic limit. As per the IRC 1960 this existing village road can handle 1,200 PCU in hour and Major district road can handle 1,500 PCU in hour. Hence there will not be any conjunction due to this proposed transportation.

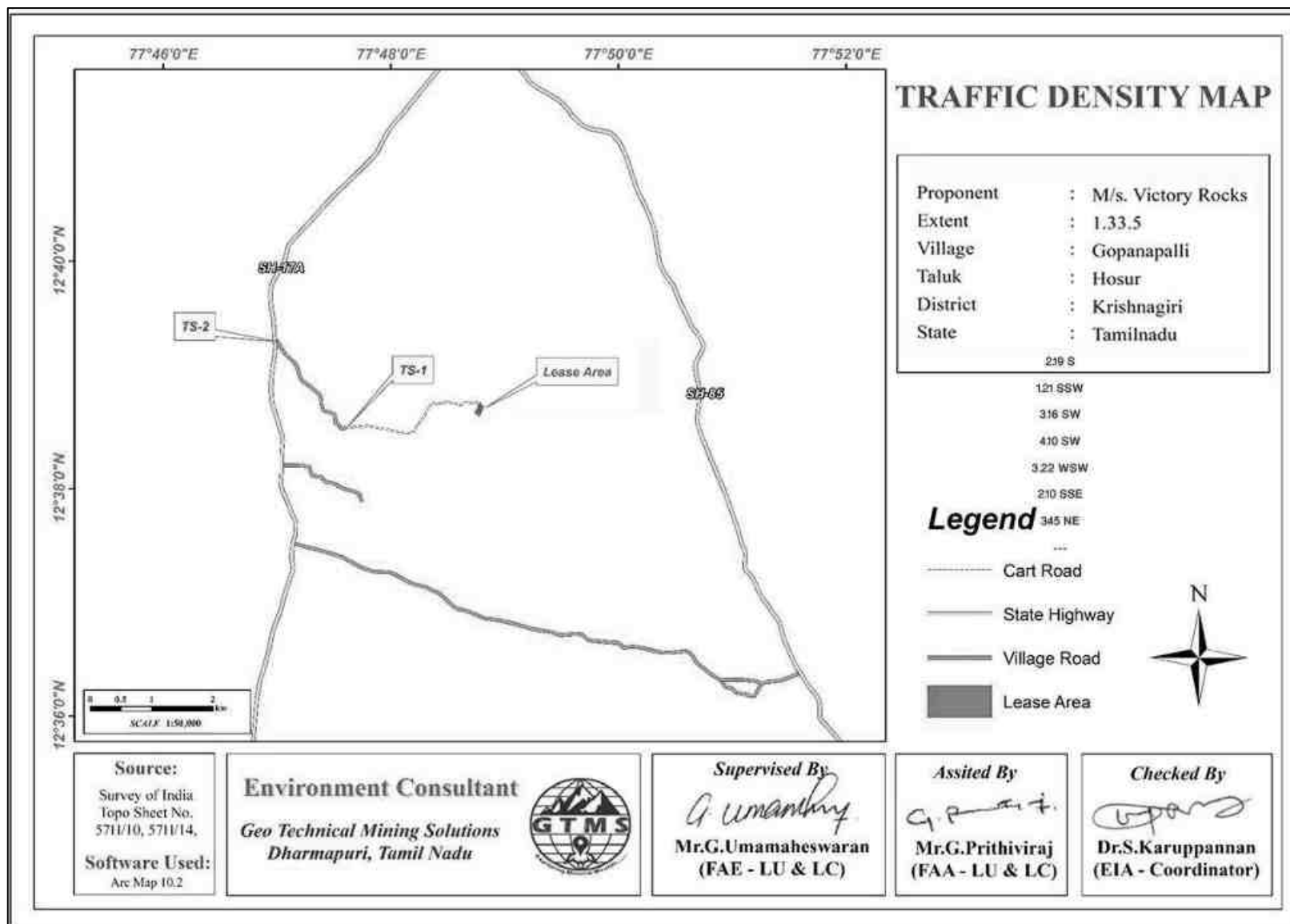


Figure 3.28 Traffic Density Map

### 3.8 SITE SPECIFIC FEATURES

There are no Wildlife Sanctuaries and National Park within 10 km radius. Therefore, there will be no need of acquisition/diversion of forest land. The details related to the environmentally sensitive areas around the proposed mine lease area i.e., 10 km radius and the nearby water bodies are given in the Table 3.42.

**Table 3.42 Details of Environmentally Sensitive Ecological Features in the Study Area**

S. No.	Sensitive Ecological Features	Name	Areal Distance in km
1	National Park / Wild life Sanctuaries	None	Nil within 10 km radius
		Cauvery North WLS	12.45km SW
2	Reserve Forest	Sanamavu Reserve Forest	8.8 km NE
		Denkanikotta R.F	9.6km SE
		Udedurgam R.F	12.3km SE
		Naganur R.F	11.6km SW
		Jawalgiri R.F	17.5km SW
		Thally R.F	17.6km WSW
		Marandahalli Extn R.F	17.8km SE
		Aiyur Extn I R.F	16.6km SE
		Kolatti R.F	20km SSE
		Panai R.F	19.2km SSE
		Athimugam II R.F	21.8km NE
		Settipalli R.F	21.5km NE
3	Lakes/Reservoirs/ Dams/Streams/Rivers	Lake	1.9km N
		Lake	2.15km
		Chinnati dam	7.91km SE
4	Tiger Reserve/Elephant Reserve/ Biosphere Reserve	None	Nil within 10 km radius
5	Critically Polluted Areas	None	Nil within 10 km radius
6	Mangroves	None	Nil within 10 km radius
7	Mountains/Hills	None	Nil within 10 km radius
8	Centrally Protected Archaeological Sites	None	Nil within 10 km radius
9	Industries/ Thermal Power Plants	None	Nil within 10 km radius
10	Defence Installation	None	Nil within 10 km radius

*Source: Survey of India Toposheet*





**Figure 3.29 Field Study Photographs**

## CHAPTER IV

### ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

#### 4.0 GENERAL

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. This chapter discusses the anticipated impacts on soil, land, water, air, noise, biological, and socioeconomic environments.

#### 4.1 LAND ENVIRONMENT

##### 4.1.1 Anticipated Impact

The proposed project would result in:

- ✚ Permanent change on land use and land cover.
- ✚ Change in topography of the mine lease area.
- ✚ Problems to agricultural land and human habitations due to dust, and noise caused by movement of heavy vehicles
- ✚ Degradation of the aesthetic environment of the core zone due to quarrying
- ✚ Soil erosion and sediment deposition in the nearby agricultural fields during the rainy season
- ✚ Increase in agricultural productivity of land when mine water is discharged to the surrounding lands for irrigation

##### 4.1.2 Common Mitigation measures for the proposed Project

- ✚ 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
- ✚ 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., 10 m safety barrier and other safety provided) so as to help minimize 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.

## **4.2 SOIL ENVIRONMENT**

### **4.2.1 Anticipated Impact**

- ✚ Deterioration of soil quality in the surrounding area due to runoff from the project area
- ✚ Decrease in the agricultural productivity of the surrounding land due to soil quality degradation

### **4.2.2 Common Mitigation Measures from proposed project**

- ✚ Construction of garland drains, settling pits, and check dams to prevent runoff and siltation
- ✚ Run-off diversion – Garland drains will be constructed around the project boundary to prevent surface flows from entering the quarry works areas and will be discharged into the settling tanks to reduce suspended sediment loads before runoff is discharged from the quarry site.
- ✚ Retain existing or re-plant the vegetation will be retained 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.

## **4.3 WATER ENVIRONMENT**

### **4.3.1 Anticipated Impact**

- ✚ Surface and ground water resources may be contaminated due to pit water discharge, domestic sewage, discharge of oil and grease bearing waste water from washing of vehicles and machineries, and washouts from surface exposure or working areas
- ✚ As the proposed project acquires 2.5 KLD of water from water vendors, it will not extract water by developing abstraction structures in the lease area. Therefore, the project will not have impact on depletion of aquifer beneath the lease area.

### **4.3.2 Common Mitigation Measures for the Proposed Project**

- ✚ Rain water from mine pit will be treated in settling tanks before being used for dust suppression and tree plantation purposes
- ✚ Domestic sewage from site office will be discharged in septic tank and then directed to soak pits
- ✚ Water from the tipper wash-down facility and machinery maintenance yard will be passed through interceptor traps/oil separators prior to its reuse
- ✚ The garland drainage will be connected to settling tank and sediments will be trapped in the settling tanks and only clear water will be discharged to the natural drainage
- ✚ Periodic (every 6 month once) analysis of ground water quality of quarry pit water and ground water of nearby villages will be conducted
- ✚ Artificial recharge structures will be established in suitable locations as part of the rainwater harvesting management program.



## 4.4 AIR ENVIRONMENT

### 4.4.1 Anticipated Impact from Proposed Project

- ✚ During mining at various stages of 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.

#### 4.4.1.1 Emission Estimation

Emission resulting from different mining activities is estimated using relevant empirical formulae developed by Chaulya et al., 2001. The equations used for SPM emission estimation have been given in Table 4.1.

**Table 4.1 Empirical Formula for Emission Rate from Overall Mine**

	Pollutant	Source Type	Empirical Equation	Parameters
Overall Mine	SPM	Area	$E = [u^{0.4} a^{0.2} \{9.7 + 0.01p + b/(4 + 0.3b)\}]$	$u$ = Wind speed(m/s); $p$ = Mineral production (Mt/yr); $b$ = Overburden handling (Mm <sup>3</sup> /yr); $a$ = Lease area(km <sup>2</sup> ); $E$ = Emission rate(g/s).

The emission rate thus calculated using the empirical formula is used as one of the inputs in the AERMOD modelling. It is important to note that PM<sub>10</sub> emission rate is derived from the SPM estimation in the background that PM<sub>10</sub> constitutes 52% of SPM emission. The PM<sub>2.5</sub> and PM<sub>10</sub> emission results have been given in Table 4.2.

**Table 4.2-Estimated Emission Rate**

Activity	Pollutant	Calculated Value (g/s)	Lease Area in m <sup>2</sup>	Calculated Value (g/s/m <sup>2</sup> )
Overall Mine	PM <sub>2.5</sub>	0.171328808	13350	1.28336E-05
Overall Mine	PM <sub>10</sub>	1.14219205	13350	8.55575E-05

#### 4.4.1.2 Modelling of Incremental Concentration

Anticipated incremental concentration and net increase in emissions due to quarrying activities is predicted by AERMOD Software and the incremental values of the air pollutants were added to the base line data monitored at the proposed site to predict total GLC of the pollutants, as shown in Tables 4.3-4.4.

#### 4.4.1.3 Model Results

The post project resultant concentrations of PM<sub>2.5</sub> and PM<sub>10</sub> were given in Tables 4.3-4.

**Table 4.3 Incremental & Resultant GLC of PM<sub>2.5</sub>**

Station ID	Distance to core area (km)	Direction	PM <sub>2.5</sub> Concentrations(µg/m <sup>3</sup> )			Comparison against air quality standard (60 µg/m <sup>3</sup> )	Magnitude of change (%)	Significance
			Baseline	Predicted	Total			
AAQ1	2.22	S	24.1	3	27.1	Below Standard	12.45	Not Significant
AAQ2	3.15	SW	19.0	0.5	19.5		2.63	
AAQ3	4.12	SW	21.7	0.5	22.2		2.30	
AAQ4	3.24	WSW	22.1	0.5	22.6		2.26	
AAQ5	3.12	SSE	15.6	1	16.6		6.41	
AAQ6	2.01	NE	20.0	0.5	20.5		2.50	
AAQ7	---	---	21.5	5.84	27.34		27.16	

**Table 4.4 Incremental & Resultant GLC of PM<sub>10</sub>**

Station ID	Distance to core area (km)	Direction	PM <sub>10</sub> Concentrations (µg/m <sup>3</sup> )			Comparison against air quality standard (100 µg/m <sup>3</sup> )	Magnitude of change (%)	Significance
			Baseline	Predicted	Total			
AAQ1	2.22	S	44.3	5	49.3	Below Standard	11.29	Not Significant
AAQ2	3.15	SW	33.5	1	34.5		2.99	
AAQ3	4.12	SW	37.4	0.5	37.9		1.34	
AAQ4	3.24	WSW	37.7	1	38.7		2.65	
AAQ5	3.12	SSE	33.5	5	38.5		14.93	
AAQ6	2.01	NE	36.4	0.5	36.9		1.37	
AAQ7	---	---	41.0	9.3	50.3		22.68	

The values of cumulative concentration i.e., background + incremental concentration of pollutant in all the receptor locations are still within the prescribed NAAQ limits without effective mitigation measures. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be controlled further.

#### **4.4.2 Mitigation Measures**

##### ***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.

##### ***Haul Road and Transportation***

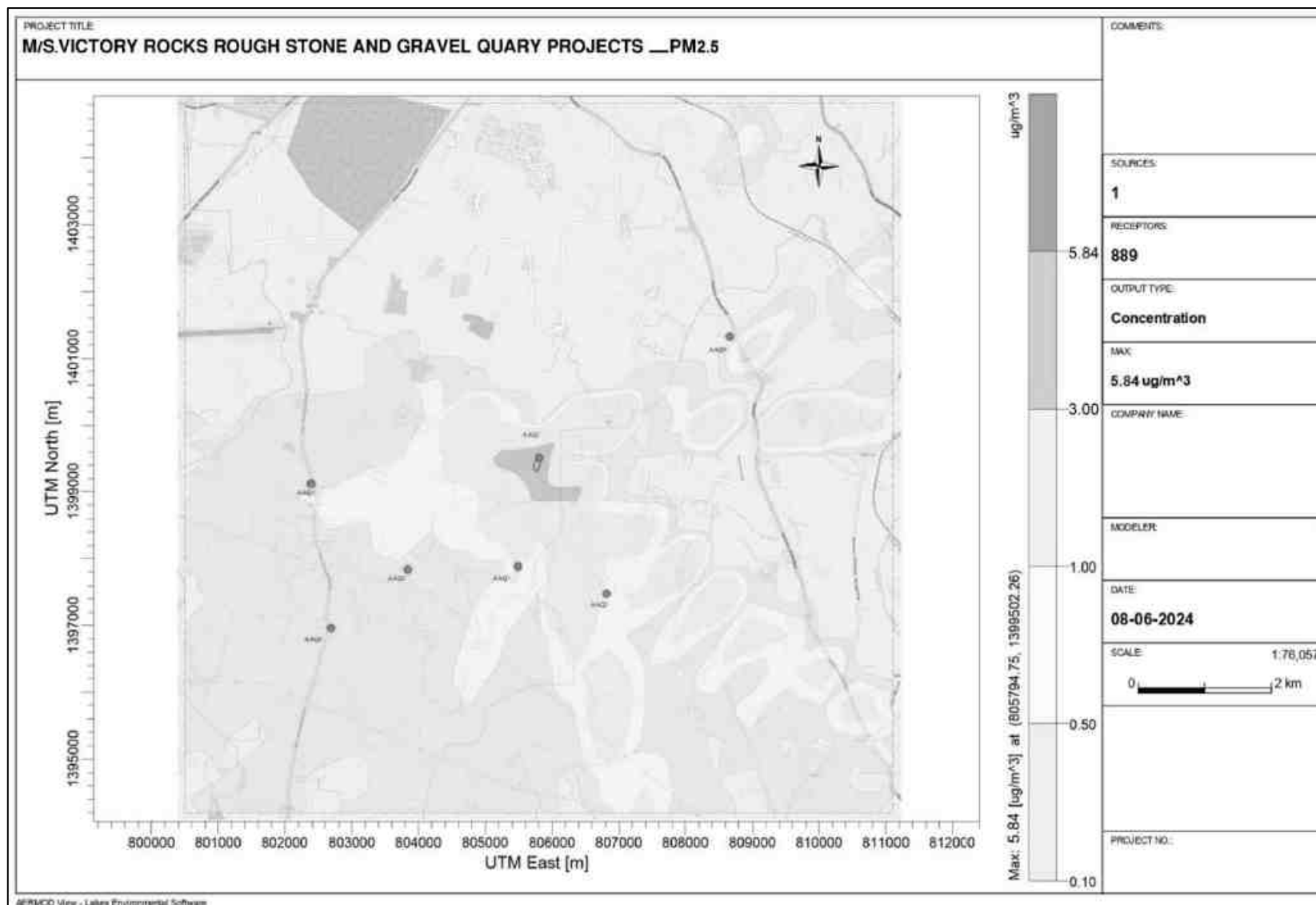
- ✚ Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation
- ✚ Transportation of material will be carried out during day time and material will be covered with tarpaulin
- ✚ The speed of tippers plying on the haul road will be limited to < 20 km/hr to avoid generation of dust
- ✚ Water sprinkling on haul roads and 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 and reduces pollution.
- ✚ The un-metalled haul roads will be compacted weekly before being put into use.
- ✚ Overloading of tippers will be avoided to prevent spillage.
- ✚ It will be ensured that all transportation vehicles carry a valid PUC certificate.
- ✚ Haul roads and service roads will be graded to clear accumulation of loose materials

##### ***Green Belt***

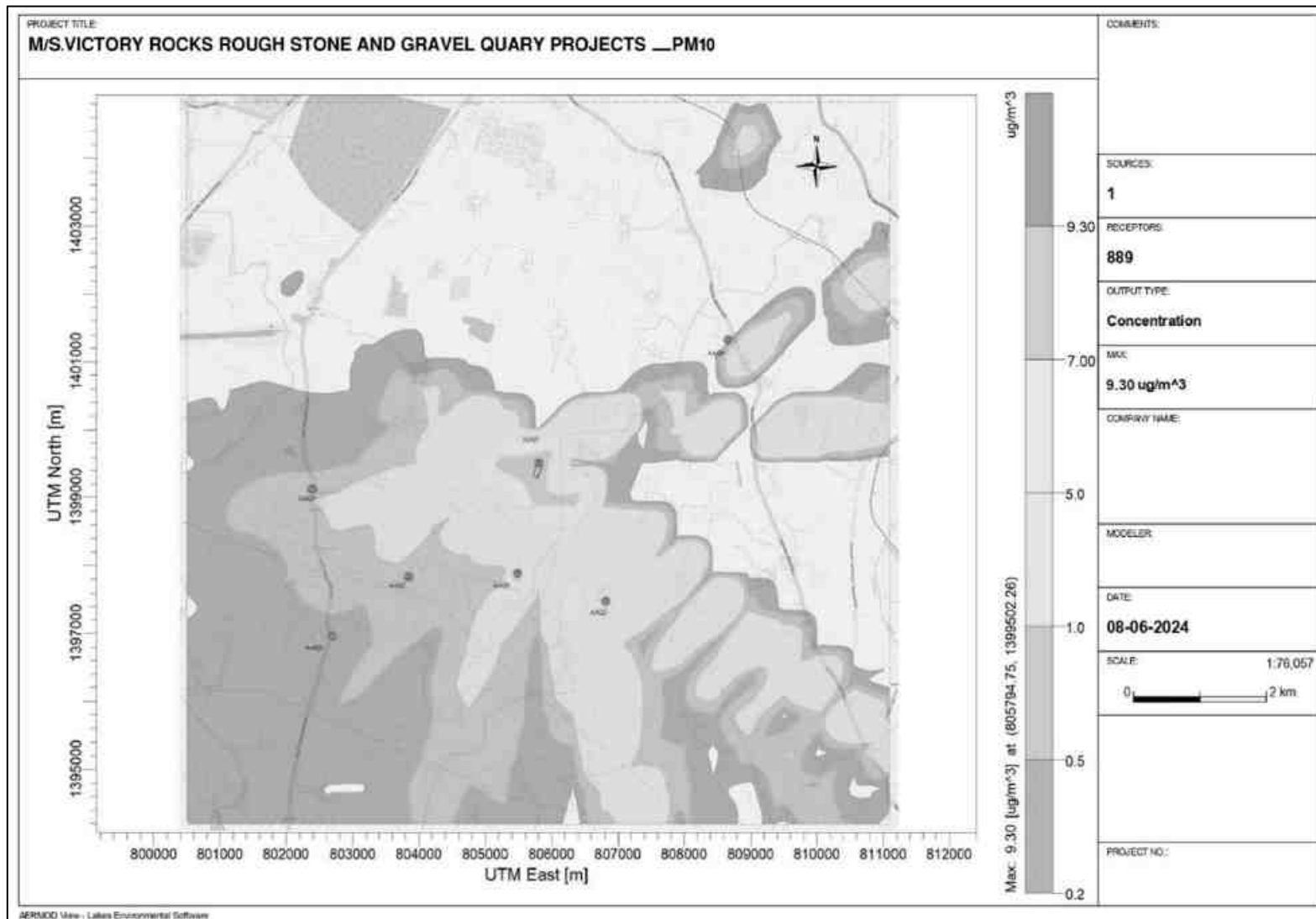
- ✚ Planting of trees all along mine haul roads outside the lease and regular grading of haul roads will be practiced to prevent the generation of dust due to movement of tractors/tippers.
- ✚ Green belt of adequate width will be developed around the project site.

##### ***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 and tipper drivers.
- ✚ Ambient air quality monitoring will be conducted every six months to assess effectiveness of mitigation measures proposed.



**Figure 4.1 Predicted Incremental Concentration of PM<sub>2.5</sub>**



**Figure 4.2 Predicted Incremental Concentration of PM<sub>10</sub>**

## 4.5 NOISE ENVIRONMENT

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 a mathematical 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  $r_1$  and  $r_2$  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.

$$L_{p \text{ total}} = 10 \log \{10^{(L_{p1}/10)} + 10^{(L_{p2}/10)} + 10^{(L_{p3}/10)} + \dots\}$$

### 4.5.1 Anticipated Impact

The attenuation due to several factors including ground reflection, atmosphere, wind speed, temperature, trees, and buildings as 35.5 dB (A), the barrier effect. 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, and 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 4.5.

**Table 4.5 Activity and Noise Level Produced by Machinery**

S. 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
<b>Total</b>			<b>95.8</b>

The total noise to be produced by mining activity is calculated to be 95.8 dB (A).

Generally, most mining operations produce noise between 95.8 dB (A).

**Table 4.6 Predicted Noise Incremental Values**

Noise Monitoring Location	Distance From Project Site(m)	Baseline Noise Level (dBA)m During Day Time	Predicted Noise Level (dBA)	Total (dBA)
Near Vijayakumar lease	1380	42.1	21.16	42.13
Gulisandiram	690	38.9	27.18	39.18
Kallu Barundur	2420	36.9	16.28	36.94
Barandhur	3860	38.7	12.23	38.71
Muduganappalli	3300	40.6	13.59	40.61
Kottur	2090	39.4	17.56	39.43
Angondapalli	3450	32.1	13.20	32.16
Between Core	100	43.8	43.96	46.89
NAAQ Standards	Industrial Day Time - 75 dB (A) & Night Time- 70 dB (A) Residential Day Time -55 dB (A) & Night Time- 45 dB (A)			

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. Therefore, no impact is anticipated on the noise environment due to the project.

#### 4.5.2 Common Mitigation Measures

The following noise mitigation measures are proposed for control of noise:

- ✚ Usage of sharp drill bits while drilling which will help in reducing noise
- ✚ Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise
- ✚ Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise
- ✚ Silencers / mufflers will be installed in all machineries
- ✚ Green Belt/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise
- ✚ Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured through training and awareness
- ✚ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.

### 4.5.3 Ground Vibrations

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 kutchha 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. The ground vibrations due to the blasting in the quarry are calculated using the empirical equation. The empirical equation for assessment of peak particle velocity (PPV) is given below:

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

Where,

V = peak particle velocity (mm/s), K = site and rock factor constant (500) Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6), R = distance from charge (m)

**Table 4.7 Predicted PPV Values due to Blasting**

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in mm/s	Fly rock distance in m	Air Blast	
					Pressure (kPa)	Sound Level (dB)
P1	5.63	690	0.058	19	0.01	114

**Table 4.8 Predicted PPV Values due to Blasting at 100-500 m radius**

Location ID	Maximum Charge in kgs	Radial Distance in m	PPV in mm/s	Fly rock distance in m	Air Blast	
					Pressure (kPa)	Sound Level (dB)
P1	5.63	100	1.28	19	0.11	135
		200	0.42		0.05	127
		300	0.22		0.03	123
		400	0.14		0.02	120
		500	0.097		0.02	118

The PPV results shows that the ground vibration is well below the permissible limits set by DGMS through circular 7,1997 for domestic houses near by the lease area at the dominant frequency of <8 Hz.

### 4.5.4 Common Mitigation Measures

- ✚ The blasting operations in the cluster quarries are carried out without deep hole drilling and blasting using delay detonators which reduce the ground vibrations.



- ✚ Proper quantity of explosives, 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 minimize 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 minimize vibration effects
- ✚ Appropriate blasting techniques shall be adopted in such a way that the predicted peak particle velocity shall not exceed 1.09mm/s
- ✚ Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices.

## **4.6 ECOLOGY AND BIODIVERSITY**

### **4.6.1 Anticipated Impact on Flora**

- ✚ During loading the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly
- ✚ The Number of plants in the mining lease area is given in Chapter III which vegetation in the lease area may be removed during mining.
- ✚ Carbon released from quarrying machineries and tippers during quarrying would be 626 kg per day, 169058 kg per year, as provided in Table 4.9.

**Table 4.9 Carbon Released During Five Years of Rough Stone and Gravel Production**

	Per day	Per year	Per 5 years
Fuel consumption of excavator	44	11975	59876
Fuel consumption of compressor	5.2	1404	7020
Fuel consumption of tipper	184	49702	248510
Total fuel consumption in liters	234	63081	315406
CO <sub>2</sub> emission in kg	626	169058	845289

**4.6.2 Mitigation Measures**

- ✚ During conceptual stage, the top bench will be re-vegetated by planting local /native species and lower benches will be converted into rainwater harvesting structure following completion of mining activities, which will replace habitat resources for fauna species in this locality over a longer time.
- ✚ None of the plants in the lease area will be cut during operational phase of the mine. we recommend uprooting and planting of the 10 trees along the 7.5 m safety zone to prevent environmental pollution during quarrying. As the survival rate due to uprooting was only 30%, 100 seedlings will be procured at the rate of 10 seedlings per tree and planted in 7.5 m safety zone.
- ✚ Existing roads will be used; new roads will not be constructed to reduce impact on flora.
- ✚ To mitigate carbon emission due to mining activities, we recommend planting trees around the quarry to offset the carbon emission during quarrying. A tree can sequester 16004 kg of carbon per year. Therefore, we recommend planting large number of trees around the quarry and near school campuses, government wasteland, roadsides etc.
- ✚ As per the greenbelt development plan as recommended by SEAC (Table 4.11), about 1310 trees will be planted within three months from the beginning of mining. These trees, when grown up would sequester carbon of about 80020 kg of the total carbon, as provided in Table 4.10.

**Table 4.10 CO<sub>2</sub> Sequestration**

CO <sub>2</sub> sequestration in kg	59	16004	80020
Remaining CO <sub>2</sub> not sequestered in kg	567	153054	765269
Trees required for environmental compensation	6377		
Area required for Environmental Compensation in Hectares	13		

**Table 4.11 Recommended Species for Greenbelt Development Plan**

S. No	Botanical Name of the Plant	Family Name	Common Name	Category	Dust Capturing Efficiency Features
1	<i>Azadirachta indica</i>	Meliaceae	Vembu	Tree	Well distinct thick at both the layer Well distinct in Palisade & Spongy parenchyma. Spongy parenchyma is present at lower epidermis Many Vascular bundles arranged almost parallel series
2	<i>Tectona grandis</i>	Lamiaceae	Teak	Tree	
3	<i>Polyalthia longifolia</i>	Annonaceae	Nettilingam	Tree	
4	<i>Albizia lebbek</i>	Fabaceae	Vagai	Tree	
5	<i>Delonix regia</i>	Fabaceae	Cemmayir-konrai	Tree	
6	<i>Bauhinia racemosa</i>	Fabaceae	Aathi	Tree	
7	<i>Cassia fistula</i>	Fabaceae	Sarakondrai	Tree	
8	<i>Aegle marmelos</i>	Rutaceae	Vilvam	Tree	
9	<i>Pongamia pinnata</i>	Fabaceae	Pungam	Tree	
10	<i>Thespesia populnea</i>	Malvaceae	Puvarasu	Tree	

**Table 4.12 Greenbelt Development Plan**

	No. of trees proposed for plantation	No. of trees expected to survive @ 80%	Area to be covered(m <sup>2</sup> )
Plantation in the construction phase (3 months)	Number of plants inside the mine lease area		
	267	213	2403
	Number of plants outside the mine lease area		
	400	320	3600
<b>Total</b>	<b>667</b>	<b>533</b>	<b>6003</b>

**Table 4.13 Budget for Greenbelt Development Plan**

Activity	Plantation in the construction phase(3Months)	Cost	Capital Cost (Rs.)	Recurring Cost-per annum
Plantation inside the mine lease area (in safety margins)	267	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))"	53400	8010
Plantation outside the area	400	Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	120000	12000
<b>Total</b>			<b>173400</b>	<b>20010</b>

Source: EMP budget

#### **4.6.3. Anticipated Impact on Fauna**

- ✚ Direct impact is anticipated on fauna of core zone
- ✚ Insignificant impact is anticipated on fauna in the buffer area due to air emissions, noise, vibration, transportation, waste water discharges, and changes in land use

#### **Mitigation Measures on fauna**

- ✚ Fencing will be constructed around the proposed mine lease area to restrict the entry of stray animals
- ✚ The workers shall be trained not to harm any wildlife near the project site

#### **4.6.4. Aquatic Biodiversity Impact**

- ✚ There is a small pond and lake within 1km around the quarry lease area and the dust generated during the quarrying may affect water bodies.
- ✚ Dust generated during quarrying can affect aquatic plants and animals in water bodies.

#### **Mitigation Measures**

- ✚ Planting trees around quarries prevents dust from escaping and prevents dust from spreading into water bodies. Aquatic plants and animals in water bodies are not affected.

#### **4.6.5 Impact on agriculture and horticulture crops in 1km Radius**

- ✚ Problems to agricultural and horticulture land due to dust caused by movement of heavy vehicles.
- ✚ Soil erosion and sediment deposition in the nearby water bodies due to earthworks during the rainy season.
- ✚ The fugitive dust released from the mining operations may cause effect on the agricultural and horticulture land who are directly exposed to the fugitive dust.
- ✚ Dust from the quarries is likely to affect reproductive systems in nearby agricultural and horticulture lands.
- ✚ Dust from quarries can affect plant growth and reduce vegetable yields.

#### **4.6.6 Mitigation Measures on agriculture and horticulture crops.**

- ✚ The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas. In order to compensate the loss of vegetation cover, it is suggested to carry out afforestation program mainly inside and outside of the lease area in different phases.
- ✚ Quarry approach roads are sprayed with water 3 times a day to control dust. Thus, the damage to the nearby farmlands is controlled.
- ✚ A green belt will be created in 7.5 safety zone around the quarry to contain the dust from the quarry and prevent the dust from spreading to the adjacent agricultural land.
- ✚ 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 to < 20 km/hr to avoid generation of dust.

## **4.7 SOCIO ECONOMIC ENVIRONMENT**

### **4.7.1 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.

### **4.7.2 Common 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

## **4.8 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

### **4.8.1 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

#### **4.8.2 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.

#### **4.8.3 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.
- ✚ 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 will be taken up.

#### **4.8.4 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, Spirometry 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.

## **4.9 MINE WASTE MANAGEMENT**

No waste is anticipated from any of the proposed quarries.

## **4.10 MINE CLOSURE**

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. Therefore, progressive mine closure plan should be specifically dealt with in the mining plan and is to be reviewed along with mining plan. 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.

### **4.10.1 Mine Closure Criteria**

The criteria involved in mine closure are discussed below:

#### **4.10.2 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.,

#### **4.10.3 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 discharges 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.

#### **4.10.4 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 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 program, as vegetation cover is the best long-term method of stabilizing the site. When the major earthwork components of the rehabilitation program 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.
- ✚ Where it is desirable to get a quick growth response from the native flora during those times when moisture is not a limiting factor. For example, development of green barriers
- ✚ The Mine closure plan should be as per the approved mining 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.



## **CHAPTER V**

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

#### **5.0 INTRODUCTION**

Consideration of alternatives to a proposed project is a requirement of EIA process. During the scoping process, alternatives to a proposed project 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 proposed project is site specific and has the 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 area.
- ❖ 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.
- ❖ As the proposed project 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 the mine site is mineral specific.

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

Manual open cast mining method with secondary blasting will be applied to extract rough stone and in the area. The proposed mining lease areas have following advantages:

- ❖ As the mineral deposition is homogeneous and batholith formation, opencast method of working is preferred over underground method.
- ❖ The material will be loaded with the help of excavators into tractors/tippers and transported to the need by customers.
- ❖ 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.

## **CHAPTER VI**

### **ENVIRONMENTAL MONITORING PROGRAMME**

#### **6.0 GENERAL**

The monitoring and evaluation of environmental parameters indicates potential changes occurring in the environment, which paves way for implementation of rectifying measures wherever required to maintain the status of the natural environment. Evaluation is also a very effective tool to judge the effectiveness or deficiency of the measures adopted and provides insight for future corrections. 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-TN as well as the conditions set forth under the order issued by Tamil Nadu Pollution Control Board while granting CTE/CTO.

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

Implementation of EMP and periodic monitoring will be carried out by respective project proponents. A comprehensive monitoring mechanism has been devised for monitoring of impacts due to proposed 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 the respective 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 the proposed quarry. The responsibilities of this cell will be:

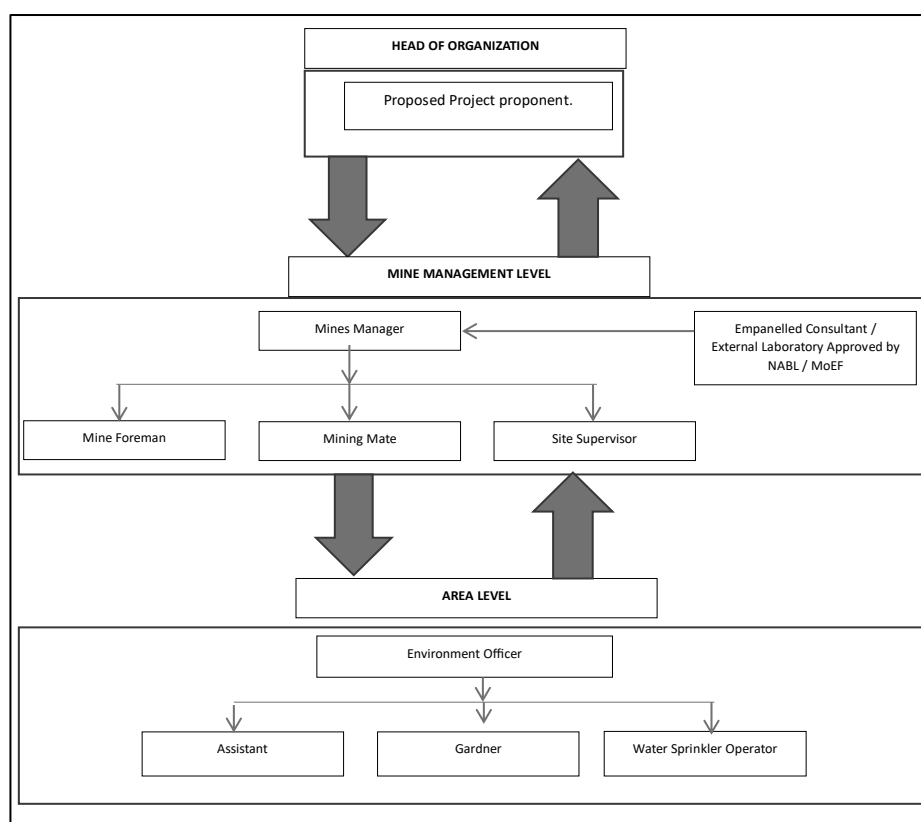
- ❖ Implementation of pollution control measures
- ❖ Monitoring programme implementation
- ❖ Post-plantation care
- ❖ To check the efficiency of pollution control measures taken
- ❖ Any other activity as may be related to environment
- ❖ Seeking expert's advice when needed.

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 the proposed project proponent. The half-yearly reports are submitted to Ministry of Environment and Forest, Regional Office and SEIAA-TN 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). The Environmental Monitoring Cell will be formed for the proposed project. The structure of the cell will be as shown in Figure 6.1.



**Figure 6.1 Proposed environmental monitoring chart**

## 6.2 IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES

The mitigation measures proposed in chapter IV 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 for Proposed Project**

S. 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

Monitoring shall confirm that commitments are being met. This may take the form of direct measurement and recording of quantitative information, such as amounts and concentrations of discharges, emissions and wastes, for measurement against statutory standards. Monitoring may include socio-economic interaction, through local liaison activities or even assessment of complaints.

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 proposed monitoring schedule have been provided in Table 6.2.

**Table 6.2 Proposed Monitoring Schedule Post EC for the Proposed Quarry**

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 m BGL
5	Noise	2 Locations (1 Core & 1 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night
		At the nearest habitation		During	Peak particle velocity

6	Vibration	(in case of reporting)	–	blasting operation	
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 ENVIRONMENT MONITORING PROGRAM

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 recurring cost for Environmental Monitoring Programme is Rs **2,95,000** /- per annum for the proposed project site.

**Table 6.3 Environment Monitoring Budget**

S. No.	Parameter	Capital Cost	Recurring Cost per annum
1	Air Quality	-	Rs 60,000/-
2	Meteorology	-	Rs 15,000/-
3	Water Quality	-	Rs 20,000/-
4	Water Level Monitoring		Rs 10,000/-
5	Soil Quality	-	Rs 20,000/-
6	Noise Quality	-	Rs 10,000/-
7	Vibration Study	-	Rs 1,50,000/-
8	Greenbelt	-	Rs 10,000/-
<b>Total</b>		-	<b>Rs 2,95,000 /-</b>

Source: Field Data

#### 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.

## **CAPTER VII**

### **ADDITIONAL STUDIES**

#### **7.0 GENERAL**

Additional studies deal with:

- ❖ Public Consultation for Proposed Project
- ❖ Risk Assessment
- ❖ Disaster Management Plan
- ❖ Cumulative Impact Study
- ❖ Plastic Waste Management

#### **7.1 PUBLIC CONSULTATION FOR PROPOSED PROJECT**

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 was made and the public opinions on the proposed project will be updated in the final EIA/EMP report.

#### **7.2 RISK ASSESSMENT FOR PROPOSED PROJECT**

Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening. The methodology for the risk assessment is 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 proposed project.

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 Table 7.1.

**Table 7.1 Risk Assessment & Control Measures for Proposed Project**

<b>S. No</b>	<b>Risk factors</b>	<b>Causes of risk</b>	<b>Control measures</b>
1	Accidents due	Improper handling	All safety precautions and provisions of Mine

	to explosives and heavy mining machineries	and unsafe working practice	<p>Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations;</p> <p>Workers will be sent to the Training in the nearby Group Vocational Training Centre</p> <p>Entry of unauthorized persons will be prohibited;</p> <p>Fire-fighting and first-aid provisions in the mine office complex and mining area;</p> <p>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> <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>Before commencing work, drivers personally check the 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</p>



		While reversal & overtaking of vehicle  Operator of truck leaving his cabin when it is loaded.	to operate the vehicle. Concave mirrors should be kept at all corners All vehicles should be fitted with reverse horn with one spotter at every tipping point Loading according to the vehicle capacity Periodical maintenance of vehicles as per operator manual
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.

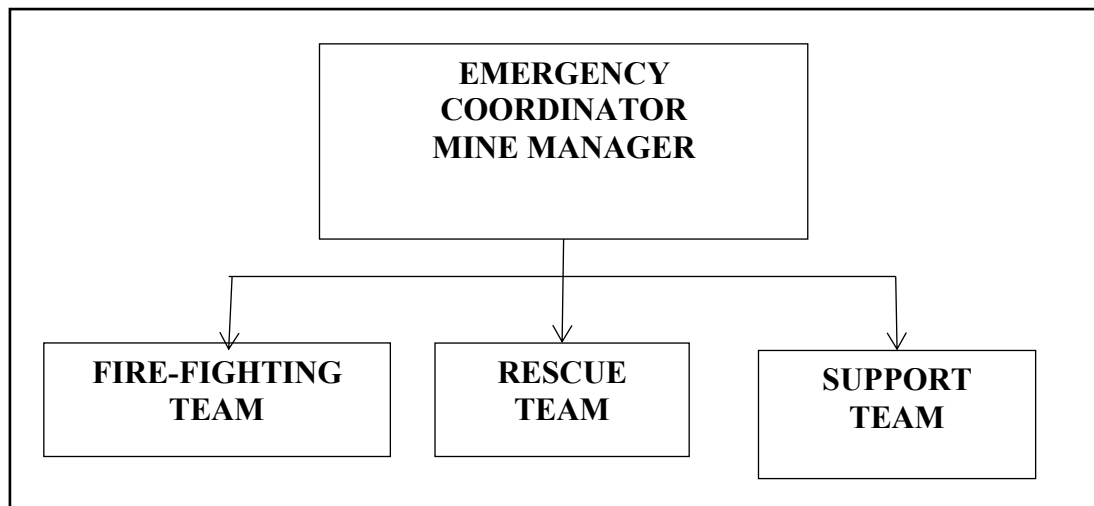
*Source: Analysed and proposed by FAE & EC*

### **7.3 DISASTER MANAGEMENT PLAN FOR PROPOSED PROJECT**

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. Structure of the team has been shown in Figure 7.1.



**Figure 7.1 Disaster management team layout for proposed project**

### **7.3.1 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

### **7.4 CUMULATIVE IMPACT STUDY**

The Cumulative Impact is mainly anticipated due to drilling & blasting and excavation and transportation activities in all the quarries within the cluster and major impact anticipated is on air & noise environment and ground vibrations due to blasting. For this cumulative study, 3 proposed projects, known

as P1, P2 and P3 are taken into consideration. The details of P1 have been given in Table 1.2 and the details of P2 & P3 is given in the Table 7.2 & 7.3

**Table 7.2 Salient Features of the Proposed Project “P2”**

Name of the Quarry	M/s.Vijay Blue Metals Rough Stone Quarry	
Type of Land	Government Poramboke Land	
Extent	2.62.0 ha	
S.F.No	327/1 (Part)	
Toposheet No	57-H/14	
Highest Elevation	896 m AMSL	
Latitude	12°38'40.34"N to 12°38'42.83"N	
Longitude	77°48'46.87"E to 77°49'0.80"E	
Ultimate Pit Dimension	30m (20 m AGL + 10 m BGL)	
Geological Resources	Rough stone (m <sup>3</sup> )	Top Soil (m <sup>3</sup> )
	860903	28160
Mineable Reserves	Rough stone (m <sup>3</sup> )	Top Soil (m <sup>3</sup> )
	250061	19527
Proposed production for remaining 5 years	Rough stone (m <sup>3</sup> )	Top Soil (m <sup>3</sup> )
	224211	19527
Method of Mining	Open cast semi mechanized mining method	
Topography	Elevated Terrain	
Machinery proposed	Jack hammer	2
	Excavator	1
	Compressor	1
	Tipper	8
Proposed Manpower Deployment	19 Nos	
Project Cost	Rs.1,29,73,000/-	
Proposed Water Requirement	3.25 KLD	

**Table 7.3 Salient Features of the Proposed Project “P3”**

<b>Name of the Quarry</b>	<b>C. Manivannan</b>
Type of Land	Government Poramboke Land
Extent	3.00.0 ha
S.F. No	327/1 (Part-2)
Toposheet No	57-H/14

Highest Elevation	876 m AMSL	
Latitude	12°38'51.46"N to 12°38'42.89"N	
Longitude	77°49'04.19"E to 77°48'56.58"E	
Ultimate Pit Dimension	52m	
Proposed production for 5 years	Rough stone (m <sup>3</sup> )	Top Soil (m <sup>3</sup> )
	243809	45924
Method of Mining	Open cast semi mechanized mining method	
Topography	Elevated Topography	
Machinery proposed	Jack hammer	2
	Excavator	1
	Compressor	1
	Tipper	5
Proposed Manpower Deployment	18	
Project Cost	Rs.87,60,000/-	
Proposed Water Requirement	2.5 KLD	

## 7.5 Air Environment

As the production of rough stone plays a vital role in affecting the air environment. The data on the cumulative production resulting from the three proposed quarries have been given in Tables 7.4.

**Table 7.4 Cumulative Production Load of Rough Stone**

Proposed Production Details				
Quarry	No of Years in m <sup>3</sup>	Per Year in m <sup>3</sup>	Per Day in m <sup>3</sup>	Number of Lorry Load Per Day
P1 (6 years)	74553	12425	46	8
P2 (5 years)	224211	44842	166	28
P3 (5 years)	243809	48762	181	30
<b>Grand Total</b>	<b>542573</b>	<b>106029</b>	<b>393</b>	<b>66</b>

The cumulative study shows that the overall production of rough stone from the 3 projects is 393m<sup>3</sup> per day with a capacity of 66 trips of rough stone per day ie., when the P1, P2 for 5 years and P3 for remaining 6 years.

## 7.6 Cumulative Impact of Air Pollutants

The results on the cumulative impact of the 3 proposed projects on air environment of the cluster have been provided in Table 7.5. The cumulative values resulting from the 3 projects

for each pollutant do not exceed the permissible limits set by CPCB.

**Table 7.5 Cumulative Impact of Air Pollutants from the 3 Proposed Projects**

Pollutants	Baseline Data ( $\mu\text{g}/\text{m}^3$ )	Incremental Values ( $\mu\text{g}/\text{m}^3$ )			Cumulative Value ( $\mu\text{g}/\text{m}^3$ )
		P1	P2	P3	
PM <sub>2.5</sub>	20.6	5.84	7.99	6.40	<b>40.83</b>
PM <sub>10</sub>	37.7	9.30	15.1	10.8	<b>72.9</b>

## 7.7 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.

**Table.7.6 Cumulative Impact of Noise from 3 Proposed projects on Gulisandiram Habitation**

Location ID	Distance (m)	Direction	Background Value (Day) dB (A)	Incremental Value dB(A)	Total Predicted dB (A)	Residential Area Standards dB (A)
Habitation Near P1	690	SW	38.9	27.18	39.18	55
Habitation Near P2	740	SW		26.58	39.15	
Habitation Near P3	630	SW		27.97	39.24	
Cumulative Noise (dB (A))					43.9	

Source: Lab Monitoring Data

Cumulative analysis of noise due to 3 proposed projects shows that habitation of Gulisandiram will receive about 43.9 dB (A) respectively. The cumulative results for all the villages in consideration do not exceed the limit set by CPCB for residential areas for day time.

## Ground Vibrations

Cumulative results of ground vibrations due to mining activities in the all the 3 proposed project have been shown in Table 7.7.

**Table 7.7 Cumulative Effect of Ground Vibrations Resulting from 3 proposed project on Habitation of Gulisandiram**

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in mm/s
P1	5.63	690	0.058

P2	16.92	740	0.123
P3	5.7	630	0.067
<b>Total</b>			<b>0.248</b>

Results from the above tables 7.7 indicate that the cumulative PPV value of each habitation 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.

## 7.8 Socio Economic Environment

Socio Economic benefits of the 3 proposed projects were calculated and the results have been shown in Table 7.8 the 3 projects will contribute Rs. **15,00,000** towards CER fund.

**Table 7.8 Socio Economic Benefits from 3 proposed project**

Location ID	Project Cost	CER Cost
P1	Rs.1,96,20,000	5,00,000
P2	Rs.87,60,000	5,00,000
P3	Rs.1,95,97,500	5,00,000
<b>Grand Total</b>	<b>Rs. 4,79,77,500</b>	<b>15,00,000</b>

**Table 7.9 Employment Benefits from 3 proposed project**

Location ID	Employment
P1	16
P2	19
P3	18
<b>Grand Total</b>	<b>53</b>

A total of 53 people will get direct employment due to 3 proposed mine in cluster.

## 7.9 Ecological Environment

**Table 7.10 Greenbelt Development Benefits From 3 proposed project**

Code	Number of Trees proposed	Area to be covered (m <sup>2</sup> )	No. of Trees expected to be grown @ 80% survival rate	Species recommended
P1	668	6008	534	<i>Azadirachta indica, Albizia lebbeck, Delonix regia, Techtona grandis, etc.,</i>
P2	1310	11790	1048	
P3	1500	13500	1200	
<b>Total</b>	<b>3478</b>	<b>31298</b>	<b>2782</b>	

Cumulative studies show that the 3 proposed project will plant about 500 native tree species like *Azadirachta indica*, *Albizia lebbeck*, *Delonix regia*, *Tectona grandis*, etc inside and outside the lease area. It is expected that 80 % of trees, i.e., 3478 trees will survive in this green belt development program.

## 7.10 PLASTIC WASTE MANAGEMENT PLAN FOR PROPOSED PROJECT

All 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.

### 7.11 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.

A detailed action plan to manage plastic waste has been provided in Table 7.11.

**Table 7.11 Action Plan to Manage Plastic Waste**

S. 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 FAEs and EC

## **CHAPTER VIII**

### **PROJECT BENEFITS**

#### **8.0 General**

The proposed project at Gopanapalli Village aims to produce **74553m<sup>3</sup>** of rough stone for a period of 6 year. 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 16 persons for carrying out mining operations and give preference to the local people in providing employment in this cluster. In addition, there will be an opportunity for 10 indirect employments to the form of contractual jobs, business opportunities, and service facilities etc. Because of this, the economic status of the local people will improve.

#### **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 quarry project is located in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu. The area has already well-established communications roads and other facilities. The following physical infrastructure facilities will further improve due to proposed project.

- ❖ 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, DMF, GST etc.,

## **8.6 CORPORATE SOCIAL RESPONSIBILITY**

Individual project proponents 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.

Under this programme, the project proponents will take-up following programmes for social and economic development of villages within 5 km of the project site. For this purpose, separate budget will be provided every year. For finalization of these schemes, proponent will interact with LSG. The schemes will be selected from the following broad areas –

- ❖ Health Services
- ❖ Social Development
- ❖ Infrastructure Development
- ❖ Education & Sports
- ❖ Self-Employment
- ❖ CSR Cost Estimation

- ❖ CSR activities mainly contributing to education, health, training of women self-help groups and infrastructure etc., will be taken up in the Gopanapalli Village. CSR budget is allocated.

## 8.7 CORPORATE ENVIRONMENT RESPONSIBILITY

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. As per para 6 (II) of the office memorandum, being a green field project & capital investment is  $\leq 100$  crores, the proposed project shall contribute 2% of capital investment towards CER as per directions of EAC/SEAC. However, the SEAC has suggested to allocate CER fund on the basis of the extent of the project. Therefore, Rs. 5,00,000 is allocated for CER. The proposed utilization of the budget of CER activities is given in Table 8.1.

**Table 8.1 CER Action Plan**

S. No.	Activity	Budget (Rs.in Lakh)
1	The applicant Indents to involve in corporate environment responsibilities (CER) activities such as renovation of existing toilet, plantation within the school premises, donating environment related books to the nearby school library, etc.	Rs.5,00,000
	<b>Total</b>	<b>Rs.5,00,000</b>

*Source: Field survey conducted by FAE in consultation with project proponent*

## 8.8 SUMMARY OF PROJECT BENEFITS

The project would pay about **Rs. 85,51,724** to the state government through various ways, as provided in Table 8.2.

**Table 8.2 Project Benefits to the State Government**

Particulars	Budget for Rough Stone (Rs.)
CER	5,00,000
Seigniorage @ Rs.90/m <sup>3</sup> of Rough Stone	67,09,770
District Mineral Foundation Tax @ 10% of Seigniorage	6,70,977
Green Tax @ 10% of Seigniorage	6,70,977
<b>Total</b>	<b>85,51,724</b>

## **CHAPTER IX**

### **ENVIRONMENTAL COST BENEFIT ANALYSIS**

Not Applicable, Since Environmental Cost Benefit Analysis not recommended at the Scoping stage.

## **CHAPTER X**

### **ENVIRONMENTAL MANAGEMENT PLAN**

#### **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 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 **M/s Victory Rocks** 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 programs 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.

#### **10.2 Description of the Administration and Technical Setup**

The environment monitoring cell discussed under chapter VI 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 program.
- ❖ 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.

### 10.3 Budgetary Provision for Environmental Management

Adequate budgetary provision has been made by the company for execution of Environmental Management Plan. The Table 10.1 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

**Table 10.1 EMP Budget for Proposed Project**

Attribute	Mitigation measures	Provision for Implementation	Capital Cost	Recurring Cost/annum
			(Rs.)	(Rs.)
Air Environment	Compaction, gradation and drainage on both sides	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare and yearly maintenance @ Rs. 10,000/- per hectare	13350	13350
	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
	Air quality will be regularly monitored as per norms within ML area & ambient area	Yearly compliance as per CPCB norms	0	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	Dust extractor @ Rs.	25000	2500

	eco- friendly drill machine with separate dust extractor unit	25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance		
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin to avoid escape of fines to the atmosphere	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 tipper/dumper deployed	20000	0
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes	0	5000
	Regular sweeping and maintenance of roads for at least about 200 m from quarry entrance	Provision for 2 labours @ Rs.10,000/labour (Contractual) / hectare	0	26700
	Installing wheel wash system near exit gate of quarry	Installation + Maintenance + Supervision	50000	20000
<b>Total Air Environment</b>			<b>908350</b>	<b>187550</b>
<b>Noise Environment</b>	Source of noise will be transportation vehicles, and 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 implementations 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 tons of blasted material	0	208748
<b>Total Noise Environment</b>			<b>50000</b>	<b>210748</b>
<b>Water Environment</b>	Water Management	Provision for garland drain @ Rs. 10,000/- per hectare with maintenance of Rs. 5,000/-per annum	13350	6675
<b>Total Water Environment</b>			<b>13350</b>	<b>6675</b>
<b>Waste Management</b>	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency (capital cost, recurring cost for collection /disposal).	25000	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>Total Waste Management</b>			<b>30000</b>	<b>22000</b>
<b>Implementation of EC,</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	10000	1000
<b>Total Implementation of EC, Mining Plan</b>			<b>10000</b>	<b>1000</b>
<b>Occupational Health</b>	Workers will be provided with Personal Protective Equipment	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and	64000	16000

		tear (say, @ Rs. 1000/- per employee)		
	Health checkup for workers will be provisioned	IME & PME Health checkup @ Rs. 1000/- per employee	0	16000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	5340
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	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	267000	13350
	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	66750	13350
	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>Total Occupational Health and Safety</b>			<b>437750</b>	<b>851040</b>
<b>Development of Green Belt</b>	Green belt development - 500 trees per hectare (267 Inside Lease Area & 401 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))"	53400	8010
		Avenue Plantation @ 300 per plant (capital) for	120150	12015



		plantation outside the lease area and @ 30 per plant maintenance (recurring)		
<b>Total Development of Green Belt</b>			<b>173550</b>	<b>20025</b>
<b>Mine Closure</b>	Closure includes 10% of the amount allotted for Greenbelt development, wire fencing, and garland drainage (Rule 27 in MCDR 2017 for Cat B mines will pay 2 lakhs per hectare or minimum amount of financial assurance of 5 lakhs)		45390	0
	G.O.(Ms)No.23, Dated: 28.09.2021	Section IVA of TNMMCR 1959 (@10% of Seigniorage Fee) (Seigniorage Fee for Rough stone = Rs.90)	670977	0
<b>TOTAL</b>			<b>2339367 (Include. Mine Closure)</b>	<b>1299038</b>

**Table 10.2 Estimation of Overall EMP Budget after Adjusting 5% Annual Inflation**

<b>I<sup>st</sup> Year</b>	<b>II<sup>nd</sup> Year</b>	<b>III<sup>rd</sup> Year</b>	<b>IV<sup>th</sup> Year</b>	<b>V<sup>th</sup> Year (including Mine Closure Cost)</b>	<b>Total Recurring Cost</b>	<b>Total EMP Cost</b>
1299038	1363990	1432190	1503799	1578989	7178007	9517374

In order to implement the environmental protection measures, an amount of **Rs.2339367** as capital cost and recurring cost as **Rs.1299038** as recurring cost/annum is proposed considering present market price considering present market scenario for the proposed project. After the adjustment of 5% inflation per year, the overall EMP cost for 5 years will be **Rs.9517374** as shown in Table 10.2.

#### **10.4 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.

## CHAPTER XI

### SUMMARY AND CONCLUSION

#### 11.1 INTRODUCTION

As the proposed rough stone mining project (P1) falls within the quarry cluster of 500m radius with the total extent of 11.57.5 ha, it requires submission of EIA report for grant of Environmental Clearance (EC) after conducting public hearing. The proposed project falling in S.F.No. 327/3 over the extent of 1.33.5 ha is situated in the cluster falling in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu. The quarries involved in the calculation of cluster extent are three proposed quarries, Two existing quarries.

#### 11.2 PROJECT DESCRIPTION

The proposed project area is located between Latitudes from 12°38'34.51"N to 12°38'40.75"N and Longitudes from 77°48'51.48"E to 77°48'55.56"E in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu. According to the approved mining plan, about 74553m<sup>3</sup> of rough stone will be mined up to the proposed depth of 40 m (20m AGL + 20 m BGL) for six years. The quarrying operation is proposed to be carried out by opencast semi mechanized mining method involving drilling, blasting, and formation of benches of the prescribed dimensions.

#### 11.3 DESCRIPTION OF THE ENVIRONMENT

Baseline data were collected to evaluate the existing environmental condition in the core were carried out covering **December-2023 through February-2024** with CPCB guidelines. Environmental baseline data were collected by an NABL accredited and MoEF notified **Ekdant Enviro Services Pvt.ltd** and in the buffer area, the monitoring of ambient air quality, noise levels, water quality and soil analysis for the nearby cluster were done in winter from **December-2022 through February-2023** through the third party NABL accredited **Enviro Farmers labs & Technologies laboratory**. The baseline monitoring done for 5km radius (TERMS OF REFERENCE [TOR] FOR EIA REPORT FOR ACTIVITIES / PROJECTS REQUIRING ENVIRONMENTAL CLEARANCE) Prepared by Administrative Staff College of India, Bellavista, Khairatabad, AUGUST 2009, Page No.86) not varied as much. Therefore, we utilize the baseline data for this cluster which is collected for the adjacent cluster in the year between December 2022 to February 2023 as per the Office Memorandum F.No.IA3- 22/10/2022-IA.III [E 177258] issued by Government of India Ministry of Environment, Forest and Climate Change (IA Division) dated 8th June 2022.

##### 11.3.1 Land Environment

Land use pattern of the area of 5 km radius was studied using Sentinel II imagery. LULC types and their extent are given in Table 1.

**Table.11.1 LULC Statistics of the Study Area**

S. No.	Classification	Area (ha)	Area (%)
1	Crop land	5361.77	69.15
2	Dense forest	2.21	0.03
3	Dense grassland/grazing land	234.74	3.03
4	Fallow land	61.38	0.79
5	Mining/industrial area	83.95	1.08
6	Land with or without area	1067.76	13.77
7	Plantations	831.73	10.73
8	Water bodies	110.52	1.43
<b>Total</b>		<b>7754.07</b>	<b>100.0</b>

Source: Sentinel II Satellite Imagery

### 11.3.2 Soil Environment

#### *Physical Characteristics*

The soil samples in the study area show loamy textures varying between silty clay loam, silty loam and sandy loam. pH of the soil varies from 6.93 to 8.22 indicating slightly acidic to slightly alkaline nature. Electrical conductivity of the soil varies from 2.93 to 3.65 dsm<sup>-1</sup>. Bulk density ranges between 0.79 and 0.92 g/cm<sup>3</sup>. There is low moderate soil erosion south west of the lease area.

#### *Chemical Characteristics*

Nitrogen ranges between 1.27 and 1.63 %. Phosphate ranges between 0.88 and 2.22 %. Potassium ranges between 2.23 and 4.27 %. Boron ranges between 13.58 and 19.81 mg/kg. Zinc content ranges between 13.58 and 19.81 mg/kg soil.

### 11.3.3 Water Environment

#### *Surface Water Resources and Quality*

Lakes near Mugalur and near Gopanapalli are the prominent surface water resources present in the study area. The proposed project area is located 2.16 km SW of the lake near Mugalur and 2.15 km NW of the lake near Gopanapalli. Totally, two surface water samples, known as SW1 and SW2 were collected from the lakes to assess the baseline water quality.

#### *Ground Water Resources and Quality*

Groundwater in the study area occurs in the crystalline rocks of Archaean age and recent alluvium. The movement of the groundwater is controlled by the intensity of weathering and fracturing of crystalline rocks. Dug wells and bore wells are the most common ground water abstraction structures in the area. However, in dry season, people in the study area heavily rely on bore wells for their domestic and agriculture purpose. Five groundwater samples, known as

GW1, GW2, GW3, GW4 and GW5 were collected from bore wells and open wells were analyzed for physico-chemical conditions, heavy metals and bacteriological contents in order to assess baseline quality of ground water. The WQI is a unique digital rating expression that expresses overall water quality status viz: excellent, good, poor, very poor and unsuitable quality based on various water quality parameters. It is used as an important tool to compare the quality of groundwater and their management in a particular region. The WQI of ground water samples fall under good (four sample), poor (one sample), and suitable for domestic and agriculture purpose. Poor quality indicating their not suitability for drinking and suitable for domestic and agriculture purpose.

#### **11.3.4 Air Environment**

As per the monitoring data, PM<sub>2.5</sub> ranges from 17.1 µg/m<sup>3</sup> to 23.3µg/m<sup>3</sup> PM<sub>10</sub> from 33.6µg/m<sup>3</sup> to 40.7µg/m<sup>3</sup> SO<sub>2</sub> from 7.2 µg/m<sup>3</sup> to 10.9µg/m<sup>3</sup> NO<sub>x</sub> from 11.9 µg/m<sup>3</sup> to 19.4g/m<sup>3</sup>. The concentration levels of the pollutants fall within the acceptable limits of NAAQS prescribed by CPCB.

#### ***Air quality Index (AQI)***

The AQI shows that the air quality of the study area falls within good category 39 causing minimal impact to human health.

#### **11.3.5 Noise Environment**

Noise level in core zone was 43.8 dB (A) Leq during day time and 32.8dB(A) Leq during night time. Noise levels recorded in buffer zone during day time varied from 32.1 to 42.1dB (A) Leq and during night time from 28.5 to 36.5dB (A) Leq. Thus, the noise level for industrial and residential area meets the requirements of CPCB.

#### **11.3.6 Biological Environment**

The study found that there is no endemic, endangered migratory fauna found in the area. This area is not also a migratory path of any faunal species. Hence, this small mining operation over short period of time will not have any significant impact on the surrounding flora and fauna.

#### ***Flora in mine lease area (core zone)***

Taxonomically 16 species belonging to 10 families have been recorded from the core mining lease area. Based on habitat classification of the enumerated plants the majority of species were 5 Tree (29.5 %) followed by Herbs & Climbers & Grass 7 (41%), Shrubs 4 (29.5%).

#### ***Flora in 300 m radius buffer zone***

Taxonomically 36 species belonging to 25 families have been recorded from the 300m radius buffer zone. Based on habitat classification of the enumerated plants the majority of species were seven Tree (19.5 %) followed by Herbs & Climbers & Grass 21 (58.5%), Shrubs 8 (22%).

### ***Flora in 10 km radius buffer zone***

Similar type of environment also in buffer area but with more flora diversity compare than core zone area, because of nearby agriculture land was found to be dominate in all the directions. Majority of the flat landscape around project unit is occupied by agriculture fields. It contains a total of 89 species belonging to 43 families have been recorded from the buffer zone. The floral (89) varieties among them Trees 37 (42%) Shrubs 13 (14%) and Herbs & Climbers & Creeper & Cactus 39 (44%).

### ***Fauna in Core Zone***

A total of 26 varieties of species were observed in the Core zone. Among them are 8 Insects (31%), 5 Reptiles (19%), 4 Mammals (15%) and 9 Avian (35%). A total of 26 species belonging to 20 families were recorded from the core area. The study shows that number of species decreases towards the mining area. This might be due the lack of vegetation. None of these species in the core zone are threatened or endemic. The survey was conducted to identify species listed in IUCN Red List. According to the field data, any species are not of Schedule I and nine species are of schedule IV.

### ***Fauna in Buffer Zone***

A total of 50 species belonging to 36 families have been recorded from the buffer zone area. Based on habitat classification the majority of species were Birds 15 (30%), followed by Insects 14 (28%), Reptiles 13 (26%), Mammals 5 (10%) and Amphibians 3 (6%). There are 7 Schedule II species and 27 species are under schedule IV according to Indian wild life Act 1972. A total fifteen species of bird were sighted in the study area. There are no critically endangered, endangered, vulnerable and endemic species were observed.

### **11.3.7 Socio Economic Environment**

The proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area, thus leading to the improvement of people's standard of living.

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

### **11.4.1 Land Environment Anticipated Impact**

The proposed project would result in:

- ❖ Permanent change on land use and land cover.
- ❖ Change in topography of the mine lease area.
- ❖ Problems to agricultural land and human habitations due to dust, and noise caused by movement of heavy vehicles
- ❖ Degradation of the aesthetic environment of the core zone due to quarrying
- ❖ Soil erosion and sediment deposition in the nearby agricultural fields during the rainy

season

- ❖ Increase in agricultural productivity of land when mine water is discharged to the surrounding lands for irrigation

#### **Mitigation Measures**

- ❖ 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
- ❖ 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., 10 m safety barrier and other safety provided) so as to help minimize 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.

#### **11.4.2 Water Environment Anticipated Impact**

- ❖ Surface and ground water resources may be contaminated due to pit water discharge, domestic sewage, discharge of oil and grease bearing waste water from washing of vehicles and machineries, and washouts from surface exposure or working areas
- ❖ As the proposed project acquires 3.0KLD of water from water vendors, it will not extract water by developing abstraction structures in the lease area. Therefore, the project will not have impact on depletion of aquifer beneath the lease area.

#### **Mitigation Measures**

- ❖ Rain water from mine pit will be treated in settling tanks before being used for dust suppression and tree plantation purposes
- ❖ Domestic sewage from site office will be discharged in septic tank and then directed to soak pits
- ❖ Water from the tipper wash-down facility and machinery maintenance yard will be passed through interceptor traps/oil separators prior to its reuse
- ❖ The garland drainage will be connected to settling tank and sediments will be trapped in the settling tanks and only clear water will be discharged to the natural drainage
- ❖ Periodic (every 6 month once) analysis of ground water quality of quarry pit water and ground water of nearby villages will be conducted

- ❖ Artificial recharge structures will be established in suitable locations as part of the rainwater harvesting management program.

### **11.4.3 AIR ENVIRONMENT**

#### **Anticipated Impact**

- ❖ During mining at various stages of 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.

#### **Mitigation Measures**

- ❖ 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
- ❖ Controlled blasting will be carried out using suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone
- ❖ Blasting will be restricted to a particular time of the day i.e., at the time of lunch hours
- ❖ 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
- ❖ 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 to < 20 km/hr to avoid generation of dust
- ❖ The un-metalled haul roads will be compacted weekly before being put into use
- ❖ It will be ensured that all transportation vehicles carry a valid PUC certificate
- ❖ Haul roads and service roads will be graded to clear accumulation of loose materials
- ❖ Planting of trees all along main mine haul roads and around the project site will be practiced to prevent the generation of dust
- ❖ Dust mask will be provided to the workers and their use will be strictly monitored

#### **11.4.4 Noise Environment**

##### **Anticipated Impact**

The attenuation due to several factors including ground reflection, atmosphere, wind speed, temperature, trees, and buildings as 35.5 dB (A), the barrier effect. 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, and attenuation factor. Source data has been computed taking into account of all the machinery and activities used in the mining process.

##### ***Mitigation Measures***

- ❖ Usage of sharp drill bits while drilling which will help in reducing noise
- ❖ Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise
- ❖ Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise
- ❖ Silencers / mufflers will be installed in all machineries
- ❖ Green Belt/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise
- ❖ Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured through training and awareness
- ❖ Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.

#### **11.4.5 Biological Environment Impact on Ecology and Biodiversity**

- ❖ During loading the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly
- ❖ The Number of plants in the mining lease area is given in Chapter III Table 3.21 which vegetation in the lease area may be removed during mining.
- ❖ Carbon released from quarrying machineries and tippers during quarrying would be 772 kg per day, 208390 kg per year.

##### **Mitigation Measures on Flora**

- ❖ During conceptual stage, the top bench will be re-vegetated by planting local /native species and lower benches will be converted into rainwater harvesting structure following
- ❖ completion of mining activities, which will replace habitat resources for fauna species in this locality over a longer time.
- ❖ None of the plants in the lease area will be cut during operational phase of the mine. we



recommend uprooting and planting of the 10 trees along the 7.5 m safety zone to prevent environmental pollution during quarrying. As the survival rate due to uprooting was only 30%, 100 seedlings will be procured at the rate of 10 seedlings per tree and planted in 7.5 m safety zone.

- ❖ Existing roads will be used; new roads will not be constructed to reduce impact on flora.
- ❖ To mitigate carbon emission due to mining activities, we recommend planting trees around the quarry to offset the carbon emission during quarrying. A tree can sequester 16004 kg of carbon per year. Therefore, we recommend planting large number of trees around the quarry and near school campuses, government wasteland, roadsides etc.
- ❖ As per the greenbelt development plan as recommended by SEAC (Table 4.11), about 1310 trees will be planted within three months from the beginning of mining. These trees, when grown up would sequester carbon of about 80020 kg of the total carbon.

#### **Anticipated Impact on Fauna**

- ❖ Direct impact is anticipated on fauna of core zone
- ❖ Insignificant impact is anticipated on fauna in the buffer area due to air emissions, noise, vibration, transportation, waste water discharges, and changes in land use

#### **Mitigation Measures on Fauna**

- ❖ Fencing will be constructed around the proposed mine lease area to restrict the entry of stray animals
- ❖ The workers shall be trained not to harm any wildlife near the project site

#### **Impact on agriculture and horticulture crops in 1km Radius**

- ❖ Problems to agricultural and horticulture land due to dust caused by movement of heavy vehicles.
- ❖ Soil erosion and sediment deposition in the nearby water bodies due to earthworks during the rainy season.
- ❖ The fugitive dust released from the mining operations may cause effect on the agricultural and horticulture land who are directly exposed to the fugitive dust.
- ❖ Dust from the quarries is likely to affect reproductive systems in nearby agricultural and horticulture lands.
- ❖ Dust from quarries can affect plant growth and reduce vegetable yields

#### **Mitigation Measures on agriculture and horticulture crops.**

- ❖ The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas. In order to compensate the loss of vegetation cover, it is suggested to carry out afforestation program mainly inside and outside of the lease area in

different phases.

- ❖ Quarry approach roads are sprayed with water 3 times a day to control dust. Thus, the damage to the nearby farmlands is controlled.
- ❖ A green belt will be created in 7.5 safety zone around the quarry to contain the dust from the quarry and prevent the dust from spreading to the adjacent agricultural land.
- ❖ 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 to < 20 km/hr to avoid generation of dust.

#### **11.4.6 Socio Economic Environment**

##### **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.

##### ***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

#### **11.4.7 Occupational Health**

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

## 11.2 Environment Monitoring Program

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, PM2.5, PM10, SO2 and NOx.
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 m 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*

## 11.5 ADDITIONAL STUDIES

### 11.5.1 Risk Assessment

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. 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 proposed project.

### 11.5.2 Disaster Management Plan

The objective of the disaster management plan is to make use of the combined resources of the mine and the outside services to:

- ❖ Rescue and treat 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.

### 11.5.3 Cumulative Impact Study

The results on the cumulative impact of the three proposed projects on air environment of the cluster do not exceed the permissible limits set by CPCB for air pollutants.

- ❖ The cumulative results of noise for the habitation in consideration do not exceed the limit set by CPCB for residential areas for day time.
- ❖ PPV resulting from three proposed project is well below the permissible limit of Peak Particle Velocity of 5 mm/s.
- ❖ The proposed three projects will allocate Rs. 15,00,000/- towards CER as recommended by SEAC.
- ❖ The proposed three projects will directly provide jobs to 53 local people, in addition to indirect jobs.
- ❖ The proposed three projects will plant 3478 about trees in and around the lease area.
- ❖ The proposed three projects will add 198 PCU per day to the nearby roads.

### 11.5.4 Project Benefits

Various benefits are envisaged due to the proposed mine and benefits anticipated from the proposed project to the locality, neighborhood, region and nation as a whole are:

- ❖ Direct employment to 16 local people
- ❖ Creation of community assets (infrastructure) like school buildings, village roads/ linked roads, dispensary & health Centre, community Centre, market place etc.,
- ❖ Strengthening of existing community facilities through the Community Development Program
- ❖ Skill development & capacity building like vocational training.
- ❖ Rs. 5,00,000 will be allocated for CER

## 11.7 ENVIRONMENT MANAGEMENT PLAN

In order to implement the environmental protection measures, an amount of **Rs.2339367** as capital cost and recurring cost as **Rs.1299038** as recurring cost/annum is proposed considering present market price considering present market scenario for the proposed project. After the adjustment of 5% inflation per year, the overall EMP cost for 5 years will be **Rs.9517374**.

## CHAPTER XII

### DISCLOSURES OF CONSULTANT

The Project Proponent, **M/s. Victory Rocks** has engaged **Geo Technical Mining Solutions**, a NABET accredited consultancy for carrying out the EIA study as per the ToR issued.

**Address of the consultancy:**

No: 1/213B Natesan Complex,  
Oddapatti, Dharmapuri – 636705,  
Tamil Nadu, India.  
Email: [info.gtmsdpi@gmail.com](mailto:info.gtmsdpi@gmail.com)  
Web: [www.gtmsind.com](http://www.gtmsind.com)  
Phone: 04342 232777.

The accredited experts and associated members who were engaged in this EIA study are given below:

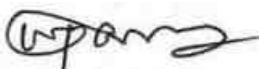
S.No.	Name of the expert	In house/ Empanelled	Sector	Functional Area	Category
Approved Functional Area Experts & EC					
1.	Dr.S.Karuppannan	EIA Coordinator (EC) In-house	1(a)(i)	Mining	A
2.	G. Prithiviraj	In-house, FAE	1(a)(i)	LU	B
3.	G. Umamaheswaran	In-house, FAE	1(a)(i)	GEO	B
4.	Dr.M.Vijaya Prabhu	Empanelled FAE	1(a)(i)	HG	B
5.	Dr. D.Kalaimurugan	In-house, FAE	1(a)(i)	SC	B
6.	R.Revathi	In-house, FAE	1(a)(i)	WP	B
7.	P. Venkatesh	In-house, FAE	1(a)(i)	AP	B
8.	C.Kumaresan	In-house, FAE	1(a)(i)	NV	B
9.	R. Elavarasan	In-house, FAE	1(a)(i)	EB	B
10.	Dr. G. Prabakaran	In-house, FAE	1(a)(i)	SE	B
11.	J.N. Manikandan	Empanelled FAE	1(a)(i)	RH, SHW, AP	B
12.	Dr. R. Arunbalaji	In-house, FAE	1(a)(i)	AQ, AP, NV	B

Approved Functional Area Associates					
13.	R.Srikrishna	FAA	1(a)(i)	LU	B
14.	K.Prithivi	FAA	1(a)(i)	GEO	B
15.	K.Ravichandiran	FAA	1(a)(i)	HG	B
16.	E.Kavitha	FAA	1(a)(i)	SC,EB	B
17.	M.Arunkumar	FAA	1(a)(i)	WP,HW	B
18.	P.Moorthy	FAA	1(a)(i)	AP	B
19.	P.Dhatchayini	FAA	1(a)(i)	AQ	B
20.	V.Malavika	FAA	1(a)(i)	NV,HW	B
Team Members					
21.	G. Umamaheswaran	In-house, FAE	1(a)(i)	TM for EC	B

### **DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA & EMP**

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

Signature

: 

Date

:

Name

: **Dr. S. Karuppannan**

Designation

: EIA Coordinator

Name of the EIA consultant organization


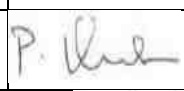

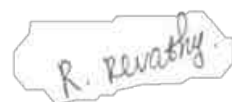




: Geo Technical Mining Solutions







Period of Involvement

: Till date


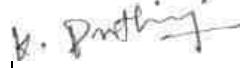

We, the FAEs and FAAs hereby declare that information furnished in this EIA/EMP report for **M/s. Victory Rocks**, rough stone quarry project with the extent of 1.33.5ha situated in the cluster with the extent of 11.57.5ha in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State is true and correct to the best of our knowledge.

### List of Functional Area Experts Engaged in this Project






S. No.	Functional Area	Involvement	Name of the Experts	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>	J.N. Manikandan	
			P. Venkatesh	
			Dr.R. Arun Balaji	
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>	R.Revathi	
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. M. Vijay Prabhu	
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>	G.Umamaheswarar	
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>	Dr. G. Prabhakaran	
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> <li>Impact of the project on flora and fauna.</li> <li>Suggesting species for greenbelt development.</li> </ul>	R. Elavarasan	

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>	J.N. Manikandan	
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>	G. Prithviraj	
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>	C. Kumaresan	
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>	Dr.R. Arun Balaji	
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. D.Kalaimurugan	
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>	J.N. Manikandan	

**List of Functional Area Associate Engaged in this Project**

S.No.	Name	Functional Area	Involvement	Signature
1	R.Srikrishna	LU	<ul style="list-style-type: none"> <li>○ Site visit with FAE</li> <li>○ Provide inputs &amp; Assisting FAE for LU</li> </ul>	
2	K.Prithivi	GEO	<ul style="list-style-type: none"> <li>○ Field visits along with FAE</li> <li>○ Assistance to FAE in both primary and secondary data collection</li> </ul>	
3	K.Ravichandiran	HG	<ul style="list-style-type: none"> <li>○ Site visit with FAE</li> <li>○ Provide inputs &amp; Assisting FAE for HG</li> </ul>	



4	E.Kavitha	SC,EB	<input type="checkbox"/> Field visits along with FAE <input type="checkbox"/> Assistance to FAE in both primary data collection	
5	M.Arunkumar	WP,HW	<input type="checkbox"/> Site visit with FAE <input type="checkbox"/> Assistance to FAE in collection of both primary and secondary data	
6	P.Moorthy	AP	<input type="checkbox"/> Site visit with FAE <input type="checkbox"/> Assistance to FAE in collection of both primary and secondary data	
7	P. Dhatchayini	AQ	<input type="checkbox"/> Site visit with FAE <input type="checkbox"/> Assistance to FAE in collection of both primary and secondary data	
8	V. Malavika	NV, SHW	<input type="checkbox"/> Site visit along with FAE <input type="checkbox"/> Assistance in report preparation	

**DECLARATION BY THE HEAD OF THE ACCREDITED CONSULTANT ORGANIZATION**

I, **Dr. S. KARUPPANNAN**, Managing Partner, **Geo Technical Mining Solutions**, hereby, confirm that the above-mentioned functional area experts and team members prepared the EIA/EMP report for M/s. Victory Rocks, rough stone quarry project with the extent of 1.33.5ha situated in the cluster with the extent of 11.57.5ha in Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State is true and correct to the best of my knowledge.

Signature : 

Date :

Name : **Dr. S. Karuppannan**

Designation : Managing Partner

Name of the EIA Consultant Organization : Geo Technical Mining Solutions NABET

Certificate No & Issue Date : NABET/EIA/23-26/RA 0319

Validity : Till 31.12.2026



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

**TERMS OF REFERENCE (ToR)**

**Lr No.SEIAA-TN/F.No.10058/SEAC/ToR-1505/2023 Dated:31.07.2023**

To

M/s. Victory Rocks,  
D.No.4/637, Dasarapalli Village,  
Denkanikottai Taluk,  
Krishnagiri District- 635118.

Sir / Madam,

**Sub:** SEIAA, Tamil Nadu – Terms of Reference with Public Hearing (ToR) for the Proposed Rough Stone Quarry over an extent of 1.33.5Ha at S.F. No: 327/3 of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu by M/s. Victory Rocks - under project category – “B1” and Schedule S.No. 1(a) – ToR issued along with Public Hearing- preparation of EIA report – Regarding.

**Ref:**

1. Online proposal No. SIA/TN/MIN/430765/2023, Dated:25/05/2023.
2. Your application submitted for Terms of Reference dated: 27.05.2023.
3. Minutes of the 392<sup>nd</sup> Meeting of SEAC held on 14.07.2023.
4. Minutes of the 642<sup>nd</sup> meeting of Authority held on 31.07.2023.

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

The proponent, M/s. Victory Rocks has submitted application for ToR, in Form-I, Pre-Feasibility report for the Proposed Rough Stone Quarry over an extent of 1.33.5Ha at S.F. No: 327/3 of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu.

  
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SEIAA-TN

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

Proposed Rough Stone Quarry over an extent of 1.33.5Ha at S.F. No: 327/3 of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu by M/s. Victory Rocks-For Terms of Reference. (SIA/TN/MIN/430765/2023, Dated:25/05/2023).

The proposal was placed in this 392<sup>nd</sup> Meeting of SEAC held on 14.07.2023. The details of the project furnished by the proponent are available in the website (parivesh.nic.in).

**The SEAC noted the following:**

1. The Project Proponent, M/s. Victory Rocks has applied for Terms of Reference for the Proposed Rough Stone Quarry over an extent of 1.33.5Ha at S.F. No: 327/3 of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu.
2. The proposed quarry/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. As per the mining plan the lease period is 10 years. The mining plan is for the period of five years & production should not exceed 280511 m<sup>3</sup> of Rough Stone with ultimate depth of mining 50m (22m AGL +28m BGL).
4. Earlier, the PP has obtained EC from District Level Environmental Impact Assessment Authority, Krishnagiri vide Lr.No.03/DEIAA-KGI/EC.No.89/2018 dated:27.08.2018 for the quantity of 280511 cu.m of Rough Stone upto a depth of 50m. This EC issued by the DEIAA has been filed before the SEIAA-TN for reappraisal in compliance to the order of the Hon'ble NGT in O.A142 of 2022 as per the Guidelines stipulated in MoEF &CC OM F.No. IA3-22/11/2023-IA.III (E-208230), dated. 28.04.2023.
5. It is an Existing quarry lease area. The lease deed was executed on 23.03.2020 and lease period is upto 22.03.2030.
6. The PP has furnished last permit details and transported quantity upto 30.01.2023 is 74,640 cu.m of Rough Stone.
7. It has been observed that the bench geometry of bench height of 7 m with bench width of 5 m is provided in the approved Mining Plan which is not in consistent with the legal requirements of the MMR 1961 and further, the PP has not obtained the permission for the relaxation of the bench dimensions from the Director of Mines Safety, Chennai Region.

Based on the presentation made by the proponent, SEAC decided to recommend for grant of Terms of Reference (TOR) with Public Hearing, subject to the following specific TOR conditions,

  
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SEIAA-TN

in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC and additional ToR conditions given in **ANNEXURE-I** are to be included in EIA/EMP Report:

1. As per Metalliferous Mines Regulation 1961, under Chapter XI, 106 (2) (a)  
*"..... the face shall be benched and the sides shall be sloped at an angle of not more than 60 degrees from the horizontal. The height of any bench shall not exceed six meters and the breadth thereof shall not be less than the height. ...."*  
Hence, the proponent shall revise the Mining Plan with bench height and width as per the Metalliferous Mines Regulation 1961 and a revised mining plan/scheme of mining approved by the concerned Assistant Director of Dept. of Geology & Mining shall be submitted with a bench geometry of not less than 6m height × 6m width.
2. For the existing quarry, the PP shall obtain a letter from the concerned AD (Mines) which include 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. Violation in the quarry during the past working.
  - vii. Quantity of material mined out outside the mine lease area (or) in the adjacent quarry/land.
  - viii. Existing condition of Safety zone/benches
2. Details of any penalties levied on the PP for any violation in the quarry operation
3. The PP shall submit Certified Compliance Report obtained from the office of the concerned DEE/TNPCB (or) IRO, MoEF & CC, Chennai and appropriate mitigating measures for the non-compliance items, if any.
4. The Project Proponent shall furnish the revised EMP for remaining life of the mine in the format prescribed by the SEAC.
5. 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,

  
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SEIAA-TN

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.

#### ANNEXURE-I

1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:
  - (i) Original pit dimension
  - (ii) Quantity achieved Vs EC Approved Quantity
  - (iii) Balance Quantity as per Mineable Reserve calculated.
  - (iv) Mined out Depth as on date Vs EC Permitted depth
  - (v) Details of illegal/illicit mining
  - (vi) Violation in the quarry during the past working.
  - (vii) Quantity of material mined out outside the mine lease area
  - (viii) Condition of Safety zone/benches
  - (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.
2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.
3. The 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.
4. 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.

  
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SEIAA-TN

5. 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.
6. 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.
7. 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.
8. 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.
9. 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,
  10. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
  11. Quantity of minerals mined out.
    - Highest production achieved in any one year
    - Detail of approved depth of mining.
    - Actual depth of the mining achieved earlier.
    - Name of the person already mined in that leases area.
    - If EC and CTO already obtained, the copy of the same shall be submitted.
    - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
  12. 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).
  13. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,

  
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14. 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.
15. 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.
16. 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.
17. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
18. 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.
19. 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.
20. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
21. 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

  
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- be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
22. 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.
  23. 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.
  24. 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.
  25. Impact on local transport infrastructure due to the Project should be indicated.
  26. 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.
  27. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
  28. 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.
  29. 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.
  30. 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

  
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coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner

31. 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.
32. 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.
33. 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.
34. 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.
35. 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.
36. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
37. 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.
38. 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.
39. 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.
40. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

  
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Appendix -I  
List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	<i>Azadirachta indica</i>	Vitrans	நெல்
2	<i>Adenanthera pavonina</i>	Marachi	மரபாசி
3	<i>Albizia lebbek</i>	Vaagai	வாகை
4	<i>Albizia amara</i>	Ural	உரல்
5	<i>Bauhinia purpuria</i>	Mandhara	மந்தாரை
6	<i>Bauhinia racemosa</i>	Aathi	அத்தி
7	<i>Bauhinia speciosa</i>	Iravathi	இரவத்தி
8	<i>Berberis asiatica</i>	Kattuvai	கட்டுவாய்
9	<i>Borassus flabellifera</i>	Panna	பன்னா
10	<i>Butea monostachya</i>	Murukomanam	முருகமணம்
11	<i>Butea celtis</i>	Baru, Serivala	பரூ, செவிலா
12	<i>Calophyllum inophyllum</i>	Pannai	பன்னை
13	<i>Cassia fistula</i>	Sarakandhu	சரகாந்து
14	<i>Cassia rostrata</i>	Sengondra	செங்கண்டா
15	<i>Chloroxylon swietenia</i>	Purakamaram	புரகாமரம்
16	<i>Cordia allamanda</i>	Kongu, Marudhara	கொங்கு, மரூதரா
17	<i>Cordia allamanda</i>	Naravali	நரவாலி
18	<i>Cordia allamanda</i>	Mavalangum	மாவலங்கு
19	<i>Dillenia indica</i>	Uva, Usha	உவா, உஷா
20	<i>Dillenia pentagyna</i>	Soru, Uva, Serrata	சுரு, உவா, செரட்டா
21	<i>Diospyros reticulata</i>	Karutagai	கரடிகை
22	<i>Diospyros schlegelii</i>	Vagavai	வகவாய்
23	<i>Ficus religiosa</i>	Kalichu	கலிசு
24	<i>Hibiscus rosa-sinensis</i>	Astragalus	அஸ்டிராலஸ்
25	<i>Hibiscus rosa-sinensis</i>	Aachi	அச்சி
26	<i>Hibiscus rosa-sinensis</i>	Aachi	அச்சி
27	<i>Lantana camara</i>	Odium	ஒடியம்
28	<i>Lagerströmia speciosa</i>	Poo Maravali	பூ மரவாலி
29	<i>Lagerströmia speciosa</i>	Nesakottamaram	நெசகோட்டாமரம்
30	<i>Lagerströmia speciosa</i>	Vai Maravali	வாய் மரவாலி
31	<i>Lagerströmia speciosa</i>	Puravai	புரவாய்
32	<i>Mallotus laetifolius</i>	Thupai	தூபை
33	<i>Melastoma malabarium</i>	Madhukarai	மடகுகரை
34	<i>Melastoma malabarium</i>	Madhukarai	மடகுகரை
35	<i>Melastoma malabarium</i>	Madhukarai	மடகுகரை
36	<i>Melastoma malabarium</i>	Madhukarai	மடகுகரை
37	<i>Melastoma malabarium</i>	Madhukarai	மடகுகரை
38	<i>Melastoma malabarium</i>	Madhukarai	மடகுகரை
39	<i>Melastoma malabarium</i>	Madhukarai	மடகுகரை

40	<i>Pongamia pinnata</i>	Munna	முன்னா
41	<i>Pongamia pinnata</i>	Narumunna	நாரமுன்னா
42	<i>Pongamia pinnata</i>	Malapooram	மலபூரம்
43	<i>Prosopis juliflora</i>	Vanni marai	வணை மரம்
44	<i>Pterocarpus marsiprum</i>	Vengai	வேங்கை
45	<i>Pterocarpus marsiprum</i>	Vennangu, Tada	வேணாங்கு, தாடா
46	<i>Pterocarpus marsiprum</i>	Polavai	பலவாய்
47	<i>Pithecellobium dulce</i>	Karpala	கர்பலா
48	<i>Salmalia persica</i>	Uva Marai	உவா மரம்
49	<i>Sapindus emarginatus</i>	Marupungan, Sootpikai	மரபுங்கு, சோத்பிகை
50	<i>Saraca asoca</i>	Asoca	அசோகா
51	<i>Streblus asper</i>	Pirai marai	பிரை மரம்
52	<i>Streblus asper</i>	Yetti	யெட்டி
53	<i>Streblus asper</i>	Therthang Kottai	தேர்தங்க கோட்டை
54	<i>Syzygium cumini</i>	Nayal	நயால்
55	<i>Terminalia bellerica</i>	Thandi	தாண்டி
56	<i>Terminalia arjuna</i>	Ven marudhu	வேண மரூது
57	<i>Terminalia arjuna</i>	Sandhana vembu	சந்தன வேம்பு
58	<i>Theophrasta populnea</i>	Puvavai	புவவாய்
59	<i>Walsbya trifoliata</i>	Valvura	வால்வூரா
60	<i>Wrightia tinctoria</i>	Veppalai	வேப்பலை
61	<i>Wrightia tinctoria</i>	Kodukkapuli	கோடககபுலி


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

The subject was placed in the 642<sup>nd</sup> Authority meeting held on 31.07.2023. The Authority noted that the subject was appraised in the 392<sup>nd</sup> Meeting of SEAC held on 14.07.2023. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing** under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions and conditions in **Annexure 'B'** of this minutes in addition to the following conditions.

**Annexure 'B'****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.

  
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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.

  
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**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.

  
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**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.

  
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40. As per the MoEF& CC office memorandum F.No.22-65/2017-1A.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

  
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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.

  
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- 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

  
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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

  
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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

  
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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.

  
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- 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.

  
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8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of acquisition, nearby (in 2-3 km.) water body, population, 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.

  
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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

  
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further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.

- The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
- The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29<sup>th</sup> August, 2017.

  
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**Copy to:**

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



**From**

Dr. S.Vediappan, M.Sc.,Ph.d.,  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

**To**

Tvl. Victory Rocks,  
D.No. 4/637, Dasarapalli Village,  
Denkanikottai Taluk ,  
Krishnagiri District - 635118.

**Roc.No.178/2018/Mines Dated:23.05.2023**

**Sir,**

**Sub:** Mines and Minerals - Rough stone - Krishnagiri District - Hosur Taluk - Gopanapalli village - Government land S.F.No. 327/3 over an extent 1.33.5 Hects - Tender Cum Auction conducted - Tvl. Victory Rocks declared as highest tenderer - Approved Mining Plan and Environmental Clearance obtained - Lease granted to Tvl. Victory Rocks - Other quarry situated in 500 mtrs radial distance requested- Details furnished - reg.

**Ref:** 1. The District Collector, Krishnagiri Proc. Rc.No. 178/2018 /Mines dated: 23.03.2020.  
2. Mining Plan approved by the Deputy Director of Geology and Mining, krishnagiri Rc.No.178/2018/ Mines dated: 23.05.2018.  
3. Tvl. Victory Rocks letter dated: 18.05.2023.

\*\*\*\*\*

Kind attention is invited to the references cited above.

2) Tvl. Victory Rocks, Krishnagiri has been granted Rough Stone quarrying lease over an extent of 1.33.5 hecets of Government land in S.F.No. 327/3 of Gopanapalli Village, Hosur Taluk, Krishnagiri District for a period of 10 years vide The District Collector, Krishnagiri Proc. Rc.No. 178/2018 /Mines dated: 23.03.2020, under the provisions of Rule 8 of Tamil Nadu Minor Mineral Concession Rule 1959. The lease deed was executed on 23.03.2020 and the lease period is valid upto 22.03.2030.

3) The Mining plan for Rough Stone in Gopanapalli Village, Hosur Taluk was approved by the Deputy Director of Geology and Mining, Krishnagiri vide letter Rc.No. 178/2018/ Mines dated: 23.05.2018.

**For VICTORY ROCKS**

  
Partner

4) In this connection, the lessee Tvl. Victory Rocks, has requested vide letter dated: 18.05.2023 to issue the details of other quarries situated within 500 mts radial distance from the subject quarry is furnished as follows.

**i) Details of Existing quarries**

Sl. No	Name of the Lessee and address	Taluk and Village	SF. No	Extent in Hect	Collector's Proc. No and Date	Period of Lease
1.	Tvl. Victory Rocks, D.No. 4/637, Dasarapalli Village, Denkanikottai Taluk, Krishnagiri District - 635118.	Gopanapalli Village Hosur Taluk	327/3	1.33.5	Roc.No.178/2018/Mines dated: 09.03.2018	23.03.2020 to 22.03.2030 (This Proposal)
2.	Thiru. V. Jayaprakash, HIG.301, New Temple Land, Hudco, Hosur, Krishnagiri District.	Gopanapalli Village Hosur Taluk	327/1 (Part-1)	3.00.0	Roc.No.104/2016/Mines dated: 29.07.2016	05.08.2016 to 04.08.2026
3.	Thiru. G.R. Anand Babu, S/o. Ramasamy, D.No. 15, Mahalakshmi Nagar, 1 <sup>st</sup> Phase, Behind old ASTC, Hudco, Hosur-635109, Krishnagiri District.	Gopanapalli Village Hosur Taluk	327/2	1.62.0	Roc.No.15/2017 /Mines dated: 24.10.2017.	13.06.2018 to 12.06.2023

**ii) Details of Expired / Abandoned quarries**


Sl. No	Name of the Lessee and address	Taluk and Village	SF. No	Extent in Hect	Collector's Proc. No and Date	Period of Lease
1	Thiru. V. Anandan, S/o. Vadigi, D.No. H320, Rayakottai Hudco, R.K. Road, Hosur Taluk, Krishnagiri District.	Gopanapalli Village Hosur Taluk	346 (Part-1), 353 & 354/2	2.02.2	Roc.No.355/2015/ Mines dated: 18.05.2015	11.01.2015 to 10.01.2020

**For VICTORY ROCKS**

*S. R. R.*  
Partner

**iii) Details of other proposal / Applied quarries**

Sl. No	Name of the Lessee and address	Taluk and Village	SF. No	Extent in Hect	Collector's Proc. No and Date	Period of Lease
1.	M/s. Vijay Blue Metals, No. M-7, Old Temple, Taluk Office Road, Hosur Taluk, Krishnagiri - 635109	Gopanapalli Village Hosur Taluk	327/1	2.62.0	Roc.No.186/2018 /Mines dated: 09.03.2018	Tender EC obtained. Lease not yet granted.
2.	Thiru. C. Manivannan, S/o. Chandran, Janappanoor, Chikkakandapalli, Krishnagiri District.	Gopanapalli Village Hosur Taluk	327/1 (Part-2)	3.00.0	Roc.No.105/2016 /Mines dated: 29.07.2016	Tender EC obtained. Lease not yet granted.


  
 Deputy Director,  
 Dept of Geology and Mining,  
 Krishnagiri.

  
 28/5/23

**Copy to :-**

The Chairman, Tamil Nadu State Environment  
 Impact Assessment Authority,  
 3<sup>rd</sup> Floor, Panakal Maligai,  
 No. 1 Jeenes Road, Saidapet,  
 Chennai -15.

**For VICTORY ROCKS**

  
 Partner

# MODIFIED MINING PLAN

FOR GOPANAPALLI VILLAGE ROUGH STONE MINING LEASE INCLUDING

## PROGRESSIVE QUARRY CLOSURE PLAN

Govt Poramboke land /Opencast, Semi-Mechanized mining/non-forest/

Non-captive use 'B2' Category

(Prepared under rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959)

### LOCATION OF THE LEASE AREA

STATE : TAMILNADU  
DISTRICT : KRISHNAGIRI  
TALUK : HOSUR  
VILLAGE : GOPANAPALLI  
S.F. NO's : 327/3  
EXTENT : 1.33.5 HECTARES

### ADDRESS OF THE APPLICANTS

**M/s.Victory Rocks,**

No.4/637, Dasarapalli Village & Post,

Denkanikottai Taluk,

Krishnagiri District.

### PREPARED BY

**Dr.S.KARUPPANNAN.M.Sc., Ph.D.,**

RQP/MAS/263/2014/A

### **GEO TECHNICAL MINING SOLUTIONS**

(A NABET Accredited & ISO Certified Company)

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Mob. : +91 9443937841, +917010076633,

E-mail: [info.gtmsdpi@gmail.com](mailto:info.gtmsdpi@gmail.com) ,

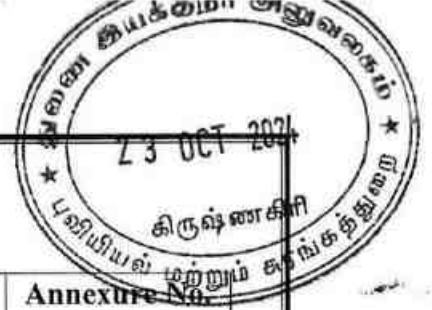
Website: [www.gtmsind.com](http://www.gtmsind.com)





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### ANNEXURES

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6	Mine Lease Plan	II	1:1000
7	Surface, Geological Plan & Sections	III	Plan 1:1000 <b>Sections</b> Hor 1:1000 Ver 1:500
8	Year wise Development, Production Plan & Sections	IV	Plan 1:1000 <b>Sections</b> Hor 1:1000 Ver 1:500
9	Mine Layout Plan and Land Use Pattern	V	Plan 1:1000
10	Conceptual Plan & Sections	VI	Plan 1:1000 <b>Sections</b> Hor 1:1000 Ver 1:500

**M/s.Victory Rocks,**  
No.4/637, Dasarapalli Village & Post,  
Denkanikottai Taluk,  
Krishnagiri District.



**CONSENT LETTER FROM THE LESSEE**

The Modified Mining plan in respect of rough stone quarry lease in Government Poramboke land at S.F.No's: 327/3 over an extent of 1.33.5 hectares of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State has been prepared by

**Dr. S. KARUPPANNAN., M.Sc., Ph.D. Regn. No. RQP/MAS/263/2014/A**

I request the **Deputy Director, Department of Geology and Mining, Krishnagiri District** to make further correspondence regarding modifications of the Modified mining plan with the said Recognized Qualified Person on this following address

**Dr. S.KARUPPANNAN.M.Sc., Ph.D.,**  
RQP/MAS/263/2014/A  
**GEO TECHNICAL MINING SOLUTIONS**  
(A NABET Accredited & ISO Certified Company)  
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Ph: +91 9443937841., 7010076633.  
E-mail: info.gtmsdpi@gmail.com,  
Website: [www.gtmsind.com](http://www.gtmsind.com)

I hereby undertake that all modifications so made in the Modified Mining plan the Recognized 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.

Place: Krishnagiri, TN

Date: 13/06/2024

  
Signature of the Applicant  
(M/s.Victory Rocks)



**M/s.Victory Rocks,**  
No.4/637, Dasarapalli Village & Post,  
Denkanikottai Taluk,  
Krishnagiri District.



**DECLARATION**

The Modified Mining Plan in respect of rough stone quarry lease in Government Poramboke land at S.F.No's: 327/3 over an extent of 1.33.5 hectares of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State have been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Place: Krishnagiri, TN

Date: 13/06/2024

Signature of the Applicant  
(M/s.Victory Rocks)

**Dr. S.KARUPPANNAN.M.Sc.,Ph.D.,**

RQP/MAS/263/2014/A

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Website: [www.gtmsind.com](http://www.gtmsind.com)



### CERTIFICATE

This is to certify that, the provisions of 8(6)(b) Tamil Nadu Minor Minerals Concession Rules, 1959 have been observed in the Modified Mining Plan for the rough stone quarry lease S.F.No's: 327/3 over an extent of 1.33.5 hectares of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State prepared to **M/s.Victory Rocks, Krishnagiri.**

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

Place: Dharmapuri, TN

Date:

Signature of the Recognized Qualified Person

**Dr.S.KARUPPANNAN,M.Sc,Ph.D.,**

RQP/MAS/263/2014/A

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**Dr. S.KARUPPANNAN.M.Sc.,Ph.D.,**

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E-mail: info.gtmsdpi@gmail.com,

Website: [www.gtmsind.com](http://www.gtmsind.com)



### CERTIFICATE

Certified that, in preparation of Modified Mining Plan in respect of rough stone quarry lease in Government Poramboke land at S.F.No's: 327/3 over an extent of 1.33.5hectares of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State prepared to **M/s.Victory Rocks, Krishnagiri**, Covers all the provisions of Mines Act, Rules, and Regulations etc made there under and whenever specific permission are required, the applicant will approach the Director General of Mines Safety, Chennai. The standards prescribed by DGMS in respect of Mines Health will be strictly implemented.

Place: Dharmapuri, TN

Date:

Signature of the Recognized Qualified Person

**Dr.S.KARUPPANNAN,M.Sc,Ph.D.,**

RQP/MAS/263/2014/A

**GEO TECHNICAL MINING SOLUTIONS**

A NABET Accredited and ISO Certified Company

1/213-B, Ground Floor, Natesan Complex,

Collectorate Post Office, Oddapatti,

Dharmapuri-636705, TamilNadu, India

# MODIFIED MINING PLAN

FOR GOPANAPALLI VILLAGE ROUGH STONE MINING LEASE IN PROGRESSIVE

## PROGRESSIVE QUARRY CLOSURE PLAN

Govt Poramboke land / Open cast-Semi-Mechanized mining/ Non-forest/

Non-captive use 'B' Category

(Prepared under rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959)



### INTRODUCTORY NOTES:

- Lease particulars:** The modified mining plan with progressive mine closure plan has prepared for M/s. Victory Rocks, having office at No.4/637, Dasarapalli Village & Post, Denkanikottai Taluk, Krishnagiri District, Tamil Nadu State and The District Collector, Krishnagiri, had granted a quarry lease for a period of 10 years in favor of M/s. Victory Rocks to quarrying rough stone, in Government Poramboke land at S.F.No's: 327/3 over an extent of 1.33.5hectares of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State vide the District Collector, Krishnagiri proceedings Roc.No.178/2018/Mines Dated: 09.03.2018.
- Previous mining plan approval & EC:** The original Mining plan was prepared by Recognized Qualified Person as per the precise area communication letter of District Collector Roc.No.178/2018/Mines Dated: 09.03.2018 and approved by the Deputy Director, Department of Geology and Mining, Krishnagiri vide Roc.No.178/2018/Mines Dated: 23.05.2018. The DEIAA-Tamil Nadu has granted environmental clearance for the production of 280511m<sup>3</sup> of rough stone vide DEIAA Lr.No.03/DEIAA-KGI/EC.No.89/2018 Dated: 27.08.2018. The lease was executed on 23.03.2020 to 22.03.2030 for a period of 10 years.
- Preparation and submission of Modified Mining Plan:** Accordingly, Modified Mining Plan with progressive mine closure plan has prepared for existing quarrying of rough stone, S.F.No's: 327/3 over an extent of 1.33.5hectares of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State.
- Review of Previous Mining Plan:** The original mining plan had been prepared for a total production of 280511m<sup>3</sup> of rough stone upto a restricted depth of 50m (22m AGL & 28m BGL).

*The proposal was placed in 392nd SEAC meeting held on 14.07.2023. Based on the presentation and documents, it has been observed that the bench geometry of bench height of 7m with bench width of 5m is provided in the approved mining plan which*

is not in consistent with the legal requirements of the MMR 1961. So SEAC after detailed discussion decided to Revised mining plan/Scheme of mining approved by the competent authority for accommodating the bench geometry designed with 5m height & 5m width without affecting the provisions of MMR 1961.

e) **Present existing pit dimensions:**

Existing Pit details		
Pit No's	Area in Sq.m	Depth (m)
I	2247	13.5
II	6320	20

f) **Previous approved quantity and achieved quantity:** As per the approved Mining plan, the proposed quantity was at 280511m<sup>3</sup> of rough stone up to a depth of 50m (22m AGL & 28m BGL).

S.No	Approved Quantity in m <sup>3</sup>		Achieved Quantity in m <sup>3</sup>
	Rough Stone in m <sup>3</sup>	Topsoil in m <sup>3</sup>	Rough Stone in m <sup>3</sup>
I	280511	12382	108840

g) **Updated Geological resources and Mineable reserves:** The lease area of 1.33.Shectares have been splitted into one longitudinal and two transverse section to calculate the volume of material up to the depth of 40m (20m above ground level and 20m below ground level) (R.L.896m-856m). The longitudinal and transverse cross sections were assigned by XY-AB & XY-CD as respectively. Using the cross-sectional method, total reserve is estimated to be 224184m<sup>3</sup> including the resources of safety zone and topsoil. Of which, rough stone is about 221634m<sup>3</sup> and topsoil is about 2550m<sup>3</sup> (Refer Plate No. III).

The updated mineable reserve is estimated to be 75956m<sup>3</sup> by deducting the reserve safety zone, block in benches from the total Geological resources. The rough stone is about 74553m<sup>3</sup> upto a depth of 40m (20m above ground level and 20m below ground level) (R.L.896m-856m) (Refer Plate No. VI) after leaving necessary safety distance from the lease boundary.

h) **Proposed Production Schedule:** Total proposed production of 75956m<sup>3</sup> by deducting the reserve safety zone, block in benches from the total Geological resources. Of which, rough stone resources of about 74553m<sup>3</sup> upto depth of 40m (20m AGL and 20m BGL) for 6 years period. Therefore, we computed the resources from (R.L.896m-856m) (Refer Plate No's. IV).



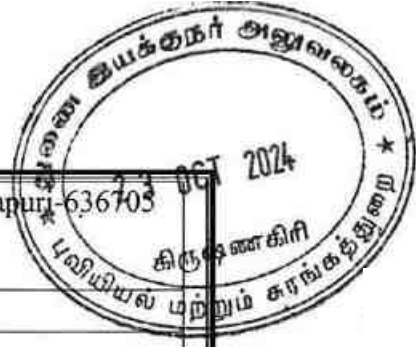
i) **Environmental Sensitivity of the periphery of proposed lease area:**

- i). **Interstate boundary:** There is a Karnataka interstate boundary situated about 8.15km away on the northwest of the lease area.
- ii). **Wildlife Sanctuaries any:** There are no wildlife animal sanctuaries within the radius of 10km from the project site under the wildlife (Protection) Act, 1972.
- iii). **Forest (conservation) Act, 1980:** There is no reserved forest within the 1km radius and nearest reserve forest is  
1.Sanamavu R.F – 6.7km – East Side
- iv). **CRZ Notification, 2019:** There is no Sea coastal zone found within radius of 10km and this project site doesn't attract CRZ Notification, 2019.

**1.0 GENERAL:**

a.	Name of the Applicant	:	M/s.Victory Rocks,
	Applicant address	:	No.4/637, Dasarapalli Village & Post, Denkanikottai Taluk
	District	:	Krishnagiri
	State	:	Tamilnadu
	Pin code	:	
	Phone	:	
	Fax	:	Nil
	Gram	:	Nil
	Telex	:	Nil
	E-mail	:	.....
b.	Status of the Applicant		
	Private individual	:	---
	Cooperative Association	:	---
	Private company	:	Private Company
	Public Company	:	---
	Public Sector Undertaking	:	---
	Joint Sector Undertaking	:	---
	Other (pl. specify)	:	---
c.	Mineral(s) Which are occurring in the area and which the applicant intends to mine	:	Rough Stone Quarry Lease
d.	Period for which the mining lease granted /renewed/ proposed to be applied	:	The District Collector, Krishnagiri has been communicated to the applicant for rough stone quarry lease period of 10years.
e.	Name of the RQP preparing the Mining Plan	:	Dr. S.KARUPPANNAN.M.Sc.,Ph.D.,
	Address	:	Geo Technical Mining Solutions (A NABET Accredited & ISO certified Company) No: 1/213-B, Natesan Complex,Oddapatti,





		Collectorate Post office, Dharmapuri-636703 Web site: <a href="http://www.gtmsind.com">www.gtmsind.com</a>
Phone	:	+91 9443937841, 7010076633
Fax	:	Nil
e-mail	:	info.gtmsdpi@gmail.com
Telex	:	Nil
Registration number	:	RQP/MAS/263/2014/A
Date of grant/renewal	:	16.12.2014
Valid upto	:	15.12.2024
f.	Name of the prospecting agency	The Commissioner, Department of geology and mining
	Address	Thiru.Ve.Ka.Industrial Estate, Guindy, Chennai-600 032
	Phone	+91 9443937841, 7010076633
g.	Reference No. and date of consent letter from the state government	The District Collector, Krishnagiri vide <b>Roc.No.178/2018/Mines Dated 09.03.2018</b>

## 2.0 LOCATION AND ACCESSIBILITY:

a.	Details of the Area:		:	Refer plate no: IA & IB	
	District & State		:	Krishnagiri, Tamil Nadu	
	Taluk		:	Hosur	
	Village		:	Gopanapalli	
	Khasra No./ Plot No./ Block Range/ Felling Series etc.:				
	Survey No.	Sub division	Total Extent in Hect	Patta No.	Ownership / Occupancy
	327/3	-	1.33.5	---	Govt Poramboke land
	Lease area (hectares)		:	1.33.5 Hectares	
	Whether the area is recorded to be in forest (please specify whether protected, reserved, etc)		:	Government Poramboke Land	
	Ownership / Occupancy		:	Government of Tamil Nadu	
Existence of Public Road / Railway line if any nearby and approximate distance			✓ Exploited quarry materials will be transported through the approach road on the North side of the lease area. ✓ There is an SH-85 road situated about		



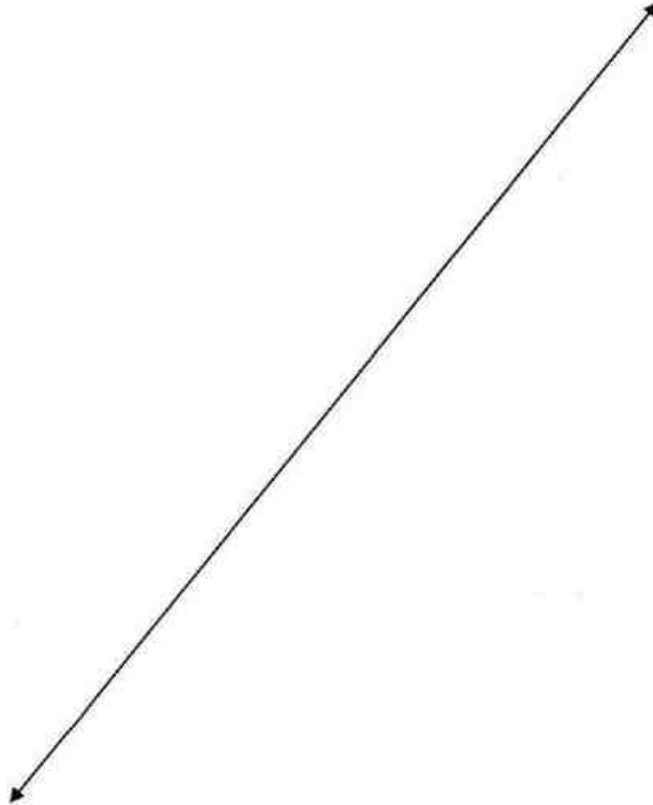
	:	3.2km radius away on eastern side from the site which is connecting Attibele - Rayakottai road. ✓ There is no NH road situated around 5km radius from the lease area. ✓ There is a railway line situated about 4.98km radius away on northeast side of the lease area.															
Toposheet No. with latitude and longitude	:	Toposheet No. <b>57 H/14</b> Latitude: From 12°38'34.51"N to 12°38'40.75"N Longitude: From 77°48'51.48"E to 77°48'55.56"E															
Geo-Coordinates of the lease boundary:																	
<table border="1"> <thead> <tr> <th>PILLAR ID</th> <th>LATITUDE</th> <th>LONGITUDE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>12°38'40.60"N</td> <td>77°48'55.56"E</td> </tr> <tr> <td>2</td> <td>12°38'34.51"N</td> <td>77°48'53.43"E</td> </tr> <tr> <td>3</td> <td>12°38'36.08"N</td> <td>77°48'51.48"E</td> </tr> <tr> <td>4</td> <td>12°38'40.57"N</td> <td>77°48'52.73"E</td> </tr> </tbody> </table>			PILLAR ID	LATITUDE	LONGITUDE	1	12°38'40.60"N	77°48'55.56"E	2	12°38'34.51"N	77°48'53.43"E	3	12°38'36.08"N	77°48'51.48"E	4	12°38'40.57"N	77°48'52.73"E
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4	12°38'40.57"N	77°48'52.73"E															
Land use pattern (Forest, Agricultural, Grazing, Barren etc.)	:	It is an existing quarry lease area.															
b.	:	<i>Attach a general location and vicinity map showing area boundaries and existing and proposed access routs. It is preferred that the area to be marked on a survey of India topographical map or a cadastral map or forest map as the case may be. However if none of these are available, the area should be shown on an accurate sketch map on scale of 1 : 5000.</i>															





**i) INFRASTRUCTURE AND COMMUNICATION:**

S.No	Description	Place	Distance	Direction
a.	Nearest post office	Gopanapalli	2.4Km	West
b.	Nearest police station	Mathigiri	5.6km	North
c.	Nearest fire station	Hosur	12.3km	North
d.	Nearest medical facility	Mathigiri	5.3km	North
e.	Nearest school	Gopanapalli	2.18km	West
f.	Nearest railway station	Kelamangalam	6.2km	Southeast
g.	Nearest port facility	Chennai	274.3km	Northeast
h.	Nearest airport	Bengaluru	43.7km	Northwest
i.	Nearest DSP office	Hosur	8.2km	North
j.	Nearest villages	Sudalam	1.9km	North
		Manchalagiri	2.1km	East
		Goolisandram	0.7km	Southwest
		Gopanapalli	2.0km	West



## PART – A

### 3.0 GEOLOGY AND MINERAL RESERVES:

(a) Briefly describe the topography and general geology and local/mine geology of the mineral deposit including drainage pattern:

(i)	Topography	:	The applied lease area exhibits an elevated terrain and maximum elevation is 896m AMSL and minimum elevation is 876m AMSL. There is previously partly exploited in this lease area with a reached depth of level is 20m. The slope is towards southeast side and falls in Toposheet no. 57 H/14.
(ii)	<p><b>General Geology of the District:</b></p> <p>Geology: The prominent geomorphic units identified in the district through interpretation of satellite imagery are structural hills in the southwestern part of the district, denudational land forms like buried pediments in the plains and inselbergs and plateaus represented by conical hills aligned with major lineaments. Krishnagiri district forms part of the upland plateau region with many hill ranges and undulating plains. The western part of the district has hill ranges of Mysore plateau with a chain of undulating hills and deep valleys extending in NNE-SSW direction. The plains of the district have an average elevation of 375m AMSL. The plateau region along the western boundary and the northwestern part of the district has an average elevation of 914m AMSL. The Guthrayan Durg with an elevation of 1395 m AMSL is the highest peak in the district.</p> <p><b>Soils:</b></p> <p>Soils have been classified into Black soil, mixed soil, red loamy soil, gravelly and sandy soils. Red loamy and sandy soils are predominant in Hosur taluk. Vast stretches of loam soils and black soils occur in Krishnagiri district.</p> <p><b>Lineaments:</b></p> <p>A lineament may be a fault, fracture, master joint, a long and linear geological formation, vegetation served may be the result of faulting and fracturing and hence it is inferred that they are the areas and zones of increased porosity and permeability in hard rock areas. The data have been checked by field studies and Survey of India topographical maps at the 1: 1,00,000 scale.</p>		



**Order of Superposition of the proposed lease area,**

Age	Group	Rock Formation
Recent to Sub recent	----	Red Soil
Archean	Charnockite Group	Quartzite, Charnockite

(iii) Local / Mine Geology of The Mineral Deposit:

**Topography of the proposed lease area:**

The applied lease area exhibits an elevated terrain and the maximum elevation is 896m AMSL and minimum elevation 876m AMSL. The present mining lease area is located in the southern sloping flank of the deposit and covered by red soil. There is previously partly exploited in this lease area with a reached depth of level is 20m. The rocks exhibits layered, medium to coarse grained hornblende biotite, orthopyroxene charnockite gneiss.

The topsoil is obtained about 0-1.0m(R.L.896-895m) and a rough stone starts from 1.0m to 40m (R.L.895-856m) from top of the surface level. The Surface plan showing elevation, contour, accessibility road and Geological map was prepared the proposed lease area.

**Mode of origin:**

The Charnockite series originally was assumed to have developed by the fractional crystallization of silicate magma. Subsequent studies have shown, however, that many, if not all, of the rocks are metamorphic, formed by recrystallization at high pressures and moderately high temperatures.

**Physiography of the rocks:**

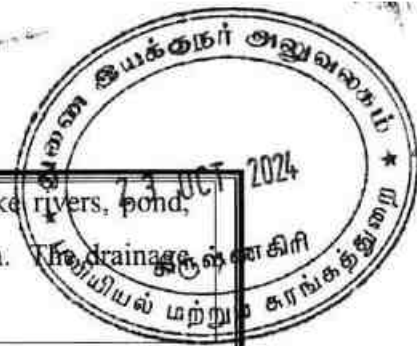
General characteristics of the rocks of this series has recorded that the rocks are in general bluish gray or darkish in colour and extremely fresh in appearance with an even grained granular structure.

**Chemical composition of rocks:**

The compositional characteristics of coexisting orthopyroxene, garnet and biotite have established several petrographic varieties within the Charnockites-Enderbites such as the granulite's and gneisses. Plagioclase feldspars, alkali feldspars and quartz are the salic minerals present in this series of rocks.

**Order of superposition of the proposed lease area,**

Age	Group	Rock Formation
Recent to Sub recent	----	Topsoil
Archaean	Charnockite Group	Charnockites.



(iv)	Drainage Pattern	:	There is no major water bodies like rivers, pond, etc., located within a radius of 50m. The drainage is dendritic in nature.
(b)	<p><i>The topographic plan of the lease area prepared on a scale of 1 :1000 or 1 : 2000 with contour interval of 3 to 10m depending upon the topography of the area should be taken as the base plan for preparation of geological plan. The details of exploration already carried out including evidences of mineral existence should be shown on the geological plan:</i></p>		
	a. Present status:	:	No exploration carried out. The lease area was presently operated quarrying of rough stone in favor of M/s.Vicory rocks, over an extent of 1.33.5 Hectares for a period of 10 years. There is existing pit level-1 Area 2247 Sq.m X D13.5m, pit level-2 is Area 6320 Sq.m X D20m. Hence, RQP personally examined during mining survey.
	b. Surface Plan	:	Surface plan showing elevation contour and accessibility road was prepared at the scale of 1: 1000, as shown in Plate No. III.
(c)	Geological sections should be prepared at suitable intervals on a scale of 1: 1000 / 1: 2000:	:	Longitudinal and transverse geological cross sections were prepared at the horizontal scale of 1: 1000 and at the vertical scale of 1:500, as shown in Plate No. IIIA.
(d)	<p><i>Broadly indicate the Yearwise future programme of exploration, taking into consideration the future production programme planned in next five years as in table below:-</i></p> <p>No future programmed proposed in this area. Its massive homogeneous parent rock. Hence exploration proposal is not required to this mining project.</p>		
<p><i>(e) Indicate geological and recoverable reserves and grade, duly supported by standard method of estimation and calculations along with required sections (giving split up of various categories i.e. proved, probable, possible). Indicate cut-off grade. Availability of resources should also be indicated for the entire leasehold.</i></p>			

23 OCT 2024

(f) Indicate mineable reserves by slice plan / level plan method, as applicable, as per the proposed mining parameters: -

MINEABLE RESERVES							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In m <sup>3</sup>	Rough Stone in m <sup>3</sup>	Residual Topsoil in M <sup>3</sup>
XY-AB	V	69	43	5	14835	14835	.....
	VI	64	33	5	10560	10560	.....
	VII	59	23	5	6785	6785	.....
	VIII	54	13	5	3510	3510	.....



TOTAL					35690	35690	0
XY-CD	I	23	61	1	1403	.....	1403 கிருஷ்ணகிரி
	I	17	61	4	4148	4148	புதியபுல் மற்றும் கரங்கத்துறை
	II	26	51	2.5	3315	3315	
		60	51	2.5	7650	7650	
	III	55	41	5	11275	11275	.....
	IV	50	31	5	7750	7750	.....
	V	45	21	5	4725	4725	.....
TOTAL					40266	38863	1403
GRAND TOTAL					79129	74553	1403

#### 4.0 MINING:

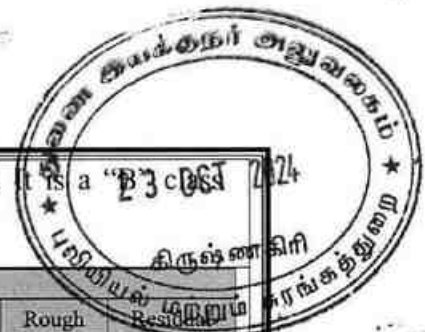
a)	Briefly describe the existing / proposed method for developing / working the deposit with all design parameters. (Note: In case of pocket deposits, sequence of development/working may be indicated on the same plan)	:	The mining operation is open-cast, semi-mechanized method are adopted and on single shift basis only. Under the regulation 106 of the Metalliferous Mines Regulations, 1961 in all open cast workings in hard rock, the benches and sides should be properly benched and sloped. The bench height should not exceed 5m and the bench width should not less than the bench height. The slope of the benches should not exceed 45° from horizontal.
----	---	---	---

b)	<i>Indicate quantum of development and tonnage and grade of production expected pit wise as in table below.</i>
----	---

Total proposed production rough stone is about **74553m<sup>3</sup>** up to a depth of 40m (20m AGL + 20mBGL) (R.L.896-856m) for Six years plan period. Average production is **12425m<sup>3</sup>** of rough stone per year (Refer Plate No's. VIA).

Year	Pit No.(s)	Topsoil/Overburden (m <sup>3</sup> )	ROM (m <sup>3</sup> )	Saleable rough stone (m <sup>3</sup> ) @ 100%	Rough stone rejects(m <sup>3</sup> )	Sub grade/Weathered rock (m <sup>3</sup> )	Saleable Gravel (m <sup>3</sup> )	Rough stone to waste ratio
V	I	1403	16516	15113	---	---	---	1:0.11
VI		---	14835	14835	---	---	---	---
VII		---	10560	10560	---	---	---	---
VIII		---	11275	11275	---	---	---	---
IX		---	11430	11430	---	---	---	---
X		---	11340	11340	---	---	---	---
Total	---	1403	75956	74553	---	---	---	---





c)	<b>Composite plans and Year wise sections (In case of 'A' class mines):</b>	:	Not applicable. It is a "B" category quarry lease																																																																																																																																																																																			
	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th colspan="9">YEARWISE PRODUCTION</th> </tr> <tr> <th>Section</th> <th>Year</th> <th>Bench</th> <th>Length in (m)</th> <th>Width in (m)</th> <th>Depth in (m)</th> <th>Volume In M<sup>3</sup></th> <th>Rough Stone in m<sup>3</sup></th> <th>Topsail in M<sup>3</sup></th> </tr> <tr> <td rowspan="4">XY-CD</td> <td rowspan="4">V-YEAR</td> <td>I</td> <td>23</td> <td>61</td> <td>1</td> <td>1403</td> <td>.....</td> <td>1403</td> </tr> <tr> <td>I</td> <td>17</td> <td>61</td> <td>4</td> <td>4148</td> <td>4148</td> <td>.....</td> </tr> <tr> <td rowspan="2">II</td> <td>26</td> <td>51</td> <td>2.5</td> <td>3315</td> <td>3315</td> <td>.....</td> </tr> <tr> <td>60</td> <td>51</td> <td>2.5</td> <td>7650</td> <td>7650</td> <td>.....</td> </tr> <tr> <td colspan="6">TOTAL</td> <td>16516</td> <td>15113</td> <td>1403</td> </tr> <tr> <td>XY-AB</td> <td>VI-YEAR</td> <td>V</td> <td>69</td> <td>43</td> <td>5</td> <td>14835</td> <td>14835</td> <td>.....</td> </tr> <tr> <td colspan="6">TOTAL</td> <td>14835</td> <td>14835</td> <td>0</td> </tr> <tr> <td>XY-AB</td> <td>VII-YEAR</td> <td>VI</td> <td>64</td> <td>33</td> <td>5</td> <td>10560</td> <td>10560</td> <td>.....</td> </tr> <tr> <td colspan="6">TOTAL</td> <td>10560</td> <td>10560</td> <td>0</td> </tr> <tr> <td>XY-CD</td> <td>VIII-YEAR</td> <td>III</td> <td>55</td> <td>41</td> <td>5</td> <td>11275</td> <td>11275</td> <td>.....</td> </tr> <tr> <td colspan="6">TOTAL</td> <td>11275</td> <td>11275</td> <td>0</td> </tr> <tr> <td>XY-AB</td> <td rowspan="2">IX-YEAR</td> <td>VII</td> <td>32</td> <td>23</td> <td>5</td> <td>3680</td> <td>3680</td> <td>.....</td> </tr> <tr> <td>XY-CD</td> <td>IV</td> <td>50</td> <td>31</td> <td>5</td> <td>7750</td> <td>7750</td> <td>.....</td> </tr> <tr> <td colspan="6">TOTAL</td> <td>11430</td> <td>11430</td> <td>0</td> </tr> <tr> <td>XY-AB</td> <td rowspan="3">X-YEAR</td> <td>VII</td> <td>27</td> <td>23</td> <td>5</td> <td>3105</td> <td>3105</td> <td>.....</td> </tr> <tr> <td></td> <td>VIII</td> <td>54</td> <td>13</td> <td>5</td> <td>3510</td> <td>3510</td> <td>.....</td> </tr> <tr> <td>XY-CD</td> <td>V</td> <td>45</td> <td>21</td> <td>5</td> <td>4725</td> <td>4725</td> <td>.....</td> </tr> <tr> <td colspan="6">TOTAL</td> <td>11340</td> <td>11340</td> <td>0</td> </tr> <tr> <td colspan="6">GRAND TOTAL</td> <td>75956</td> <td>74553</td> <td>1403</td> </tr> </table>			YEARWISE PRODUCTION									Section	Year	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M <sup>3</sup>	Rough Stone in m <sup>3</sup>	Topsail in M <sup>3</sup>	XY-CD	V-YEAR	I	23	61	1	1403	.....	1403	I	17	61	4	4148	4148	.....	II	26	51	2.5	3315	3315	.....	60	51	2.5	7650	7650	.....	TOTAL						16516	15113	1403	XY-AB	VI-YEAR	V	69	43	5	14835	14835	.....	TOTAL						14835	14835	0	XY-AB	VII-YEAR	VI	64	33	5	10560	10560	.....	TOTAL						10560	10560	0	XY-CD	VIII-YEAR	III	55	41	5	11275	11275	.....	TOTAL						11275	11275	0	XY-AB	IX-YEAR	VII	32	23	5	3680	3680	.....	XY-CD	IV	50	31	5	7750	7750	.....	TOTAL						11430	11430	0	XY-AB	X-YEAR	VII	27	23	5	3105	3105	.....		VIII	54	13	5	3510	3510	.....	XY-CD	V	45	21	5	4725	4725	.....	TOTAL						11340	11340	0	GRAND TOTAL						75956	74553	1403
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TOTAL						16516	15113	1403																																																																																																																																																																														
XY-AB	VI-YEAR	V	69	43	5	14835	14835	.....																																																																																																																																																																														
TOTAL						14835	14835	0																																																																																																																																																																														
XY-AB	VII-YEAR	VI	64	33	5	10560	10560	.....																																																																																																																																																																														
TOTAL						10560	10560	0																																																																																																																																																																														
XY-CD	VIII-YEAR	III	55	41	5	11275	11275	.....																																																																																																																																																																														
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XY-AB	IX-YEAR	VII	32	23	5	3680	3680	.....																																																																																																																																																																														
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XY-AB	X-YEAR	VII	27	23	5	3105	3105	.....																																																																																																																																																																														
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XY-CD		V	45	21	5	4725	4725	.....																																																																																																																																																																														
TOTAL						11340	11340	0																																																																																																																																																																														
GRAND TOTAL						75956	74553	1403																																																																																																																																																																														
d)	Attach supporting composite plan and section showing pit layouts, dumps, stacks of sub-grade mineral, if any, etc.	:	Composite plan not prepared in this proposed lease area. It is "B" Category of mine.																																																																																																																																																																																			
e)	<p><b>Indicate proposed rate of production when the mine is fully developed and the expected life of the mine and the year from which effected:</b></p> <p>At this rate of production, the expected life of quarry is calculated for periods an production details are given as below:</p> <p><b><u>Rough stone:</u></b></p> <table style="width: 100%;"> <tr> <td>Mineable reserves of rough stone</td> <td style="text-align: right;">= 74553m<sup>3</sup></td> </tr> <tr> <td>Production of one year</td> <td style="text-align: right;">= 12425m<sup>3</sup></td> </tr> </table> <p>The regular working of the quarry and its production depends upon the demand from the market. Accordingly, there is a possibility to increase or decrease the production. The year wise production, anticipated the life of quarry etc., are only a tentative figure.</p>			Mineable reserves of rough stone	= 74553m <sup>3</sup>	Production of one year	= 12425m <sup>3</sup>																																																																																																																																																																															
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f)	<b>Attach a note furnishing a conceptual mining plan for the entire lease period (for "B" category mines) and upto the life of the mine (for "A" category mines) based on the geological, mining and environments considerations:</b>																																																																																																																																																																																					
i)	Time frame of completion of	:	Considering the indefinite depth persistence																																																																																																																																																																																			



	mineral exploration program in leasehold area: Give broad description identified potential areas to be covered in the given time frame:	of the rough stone deposit is proved beyond the workable limits about up to a depth of 40m (20m AGL + 20m BGL) (R.L.896-856m) from the petrogenetic character of the charnockite rock as well as from the actual mining practice in the area and with the current trend of rough stone production the quarry may sustain for 5 years.																																																																																											
ii)	<p>Whether ultimate pit limit has been determined and demarcated on surface and geological plan :-</p> <p>The ultimate pit limit has been determined and demarcated at end of 5years plan period as given below</p> <table><tr><th colspan="5">ULTIMATE PIT - SECTION (XY-AB)</th></tr><tr><th>Bench</th><th>Overburden/ Mineral</th><th>Length(m)</th><th>Width(m)</th><th>Depth(m)</th></tr><tr><td>I</td><td>Topsoil</td><td rowspan="4">----</td><td rowspan="4"></td><td rowspan="4">20m Existing Depth</td></tr><tr><td>I</td><td>Rough stone</td></tr><tr><td>II</td><td>Rough stone</td></tr><tr><td>III</td><td>Rough stone</td></tr><tr><td>IV</td><td>Rough stone</td><td rowspan="4">69</td><td rowspan="4">43</td><td rowspan="4">5</td></tr><tr><td>V</td><td>Rough stone</td></tr><tr><td>VI</td><td>Rough stone</td></tr><tr><td>VII</td><td>Rough stone</td></tr><tr><td>VIII</td><td>Rough stone</td><td>54</td><td>13</td><td>5</td></tr><tr><td colspan="4">Total Depth</td><td>40m</td></tr><tr><th colspan="5">ULTIMATE PIT - SECTION (XY-CD)</th></tr><tr><th>Bench</th><th>Overburden/ Mineral</th><th>Length(m)</th><th>Width(m)</th><th>Depth(m)</th></tr><tr><td>I</td><td>Topsoil</td><td>23</td><td>61</td><td>1</td></tr><tr><td>I</td><td>Rough stone</td><td>17</td><td>61</td><td>4</td></tr><tr><td rowspan="2">II</td><td>Rough stone</td><td>26</td><td>51</td><td>2.5</td></tr><tr><td>Rough stone</td><td>60</td><td>51</td><td>2.5</td></tr><tr><td>III</td><td>Rough stone</td><td>55</td><td>41</td><td>5</td></tr><tr><td>IV</td><td>Rough stone</td><td>50</td><td>30</td><td>5</td></tr><tr><td>V</td><td>Rough stone</td><td>45</td><td>20</td><td>5</td></tr><tr><td colspan="4">Total Depth</td><td>25m</td></tr></table>	ULTIMATE PIT - SECTION (XY-AB)					Bench	Overburden/ Mineral	Length(m)	Width(m)	Depth(m)	I	Topsoil	----		20m Existing Depth	I	Rough stone	II	Rough stone	III	Rough stone	IV	Rough stone	69	43	5	V	Rough stone	VI	Rough stone	VII	Rough stone	VIII	Rough stone	54	13	5	Total Depth				40m	ULTIMATE PIT - SECTION (XY-CD)					Bench	Overburden/ Mineral	Length(m)	Width(m)	Depth(m)	I	Topsoil	23	61	1	I	Rough stone	17	61	4	II	Rough stone	26	51	2.5	Rough stone	60	51	2.5	III	Rough stone	55	41	5	IV	Rough stone	50	30	5	V	Rough stone	45	20	5	Total Depth				25m	
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iii)	Whether the site for disposal of waste rock or an un-saleable material have/ has been examined for adequacy of land and suitability of long term use in the event of continuation of mining activity: -	: There is no waste rock will be proposed in this lease area.																																																																																											

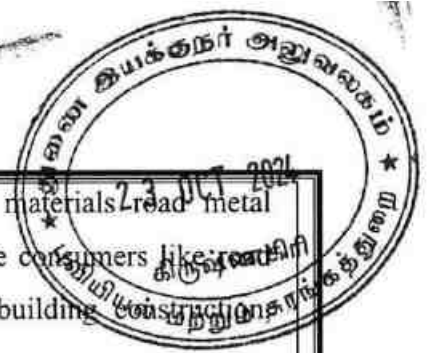




iv).	Whether back filling of pits after recovery of mineral up to techno -economically feasible depth envisaged. If so, describe the broad features of the proposal: -	: As the depth of persistence of the deposit may likely to continue for further depth, it is proposed not to backfilled the quarry pit.
v)	Whether post mining land use envisaged: -	: At the end of mining activities over the quarry pit may be utilized fish culture or storage of rain water reservoir used for irrigation purposes.
g)	Open cast mining	
i)	Describe briefly giving salient features of the mode of working (Mechanized, Semi-Mechanized, manual)	: The mining operation is opencast, semi-mechanized methods are adopted and on single shift basis only. Under the regulation 106 of the Metalliferous Mines Regulations, 1961 in all opencast workings in hard rock, the benches and sides should be properly benched and sloped. The bench height should not exceed 5m and the bench width should not less than the bench height. The slope of the benches should not exceed 45° from horizontal. Machineries like Tractor mounted compressor attached with Jack hammers is proposed to drilling and blasting. Hadraulic Excavators and tipper combination are adapted.
ii)	Describe briefly the layout of mine workings, the layout of faces and sites for disposal of overburden/waste. A reference to the plans enclosed under 4(b) and 4(d) will suffice	: The rough stone and gravel is proposed to quarry at 5m bench height & width conventional opencast semi mechanized quarrying operation using shot hole drilling with the help of tractor mounted compressor attached with jack hammers, smooth blasting and waste and are removal using Hydraulic excavator and loaded directly to the tippers and transported to the needy customer.



		Bench height = 5mts. Bench width = 5mts.																					
	a. Details of Topsoil/ Overburden	The topsoil of 1403m <sup>3</sup> will be removed earth bund dunoed in along the lease safety area and gad been utilized for making haul road in the lease area.																					
	b. Rough Stone waste and side burden waste:-	There is no waste or side burden shall be proposed.																					
H	Underground Mining	Not applicable																					
i)	<b>Extent of mechanization:</b> Describe briefly including the calculation for adequacy and type of machinery and equipment proposed to be used in different mining operations.																						
	<b>(1) Drilling Machines:</b> Drilling of shot holes will be carried out using tractor mounted compressor and jack hammer. Details of drilling equipment's are given below.																						
	<table><tr><th>Type</th><th>Nos</th><th>Dia of hole (mm)</th><th>Size / Capacity</th><th>Make</th><th>Motive power</th><th>H.P</th></tr><tr><td>Jack Hammer</td><td>1</td><td>32 mm</td><td>Hand held</td><td>--</td><td>Diesel</td><td>--</td></tr><tr><td>Compressor</td><td>1</td><td>---</td><td>Air</td><td>--</td><td>Diesel</td><td>--</td></tr></table>	Type	Nos	Dia of hole (mm)	Size / Capacity	Make	Motive power	H.P	Jack Hammer	1	32 mm	Hand held	--	Diesel	--	Compressor	1	---	Air	--	Diesel	--	
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	<b>(3) Haulage and Transport Equipment</b> (a) Haulage within the mining leasehold:																						
	<table><tr><th>Type</th><th>No s</th><th>Size / Capacity</th><th>Make</th><th>Motive power</th><th>H.P.</th></tr><tr><td>Tipper</td><td>4</td><td>--</td><td>--</td><td>Diesel</td><td>--</td></tr></table>	Type	No s	Size / Capacity	Make	Motive power	H.P.	Tipper	4	--	--	Diesel	--										
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Tipper	4	--	--	Diesel	--																		
	<b>Whether the dumpers are fitted with exhaust conditioner should be indicated:</b> The dumpers not used in this quarry area, hence it's a small B category mine.																						
b)	Transport from mine head to the destination	Transport from the mine head to needy customer's crusher area.																					
c)	Describe briefly the transport system (please specify)	Hydraulic excavator and tippers utilized for internal transport sizeable rough stone lumps and deliver to the customer's crusher area.																					
	i) Ore transported by: own trucks / hired trucks	Hired trucks for initially production purposes																					

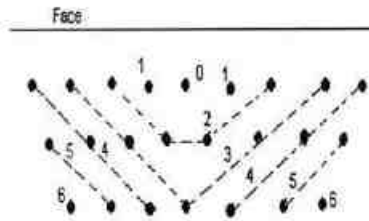


	ii) Main destination to which ore is transported (giving to and from distance)	The excavated stone materials will be supplied to the consumers like road laying, earth filling, building etc																												
a)	Details of hauling / transport equipment: <table border="1"> <thead> <tr> <th>Type</th> <th>Nos</th> <th>Size / Capacity</th> <th>Make</th> <th>Motive power</th> <th>H.P.</th> </tr> </thead> <tbody> <tr> <td>--</td> <td>--</td> <td>--</td> <td>--</td> <td>--</td> <td>--</td> </tr> </tbody> </table>						Type	Nos	Size / Capacity	Make	Motive power	H.P.	--	--	--	--	--	--												
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4)	<b>(4). Miscellaneous:</b> Describe briefly any allied operations and machineries related to the mining of the deposit not covered earlier.																													
	(A) Operations	The mining operation is open-cast, semi-mechanized methods are adopted and on single shift basis only.																												
	(B) Machineries deployed	Machineries like Tractor mounted compressor attached with Jack hammers is proposed to drilling and blasting. Hydraulic Excavators and tipper combination are adapted. (refer Part-A-4(i))																												
5.	<b>BLASTING:</b> <b>a) Broad blasting parameters like charge per hole, blasting pattern, charge per delay, maximum number of holes blasted in a round, manner and sequence of firing, etc.</b> Blasting pattern: The quarrying operation is proposed to carried by open cast mining in conjunction with conventional method using jack hammer drilling and blasting for shattering effect and loosen the rough stone. Rough stone production for 6 years = <b>74553m<sup>3</sup></b> <table border="1"> <thead> <tr> <th colspan="2">BLAST DESIGN</th> </tr> </thead> <tbody> <tr> <td>Blasthole Diameter (D) in mm</td> <td>32</td> </tr> <tr> <td>Burden (B) in m</td> <td>1.2</td> </tr> <tr> <td>Spacing (S) in m</td> <td>1.38</td> </tr> <tr> <td>Subdrill in m</td> <td>0.5</td> </tr> <tr> <td>Charge length (C) in m</td> <td>0.70</td> </tr> <tr> <td>Stemming</td> <td>0.5</td> </tr> <tr> <td>Hole Length (L) in m</td> <td>1.2</td> </tr> <tr> <td>Bench Height (BH) in m</td> <td>2.5</td> </tr> <tr> <td>Mass of explosive/hole in g</td> <td>437.5</td> </tr> <tr> <td>Stemming material size in mm</td> <td>3.2</td> </tr> <tr> <td>Burden stiffness ratio</td> <td>2.08</td> </tr> </tbody> </table>						BLAST DESIGN		Blasthole Diameter (D) in mm	32	Burden (B) in m	1.2	Spacing (S) in m	1.38	Subdrill in m	0.5	Charge length (C) in m	0.70	Stemming	0.5	Hole Length (L) in m	1.2	Bench Height (BH) in m	2.5	Mass of explosive/hole in g	437.5	Stemming material size in mm	3.2	Burden stiffness ratio	2.08
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Blast volume/hole in m <sup>3</sup>	4.1
Production of rough stone/day in m <sup>3</sup>	53*
Number of blast holes/day	13
Number of blast round/day	1
Blasthole pattern	Staggered
Mass of explosive /day in kg	5.63
Powder factor in kg/m <sup>3</sup>	0.11
Loading density	0.63
Type of explosives	Slurry
Diameter of packaging in mm	25
Initiation system	NONEL

Note: If >2kg of explosives per day use for blasting if proponent get the permission from the DGMS



Stagged method of mining

**b) Type of explosives used / to be used:**

Following explosives are recommended for efficient blasting with safe practice.

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 primary blasting is proposed.

**c) Measures proposed to minimize ground vibration due to blasting:**

**The control blasting measures is being adopted for minimizing ground vibration and fly rock.**

Shallow depths jack hammer drilling and blasting is proposed to be carried out with minimum use of explosive mainly to give hearing effect in rough stone for easy excavation and to control fly rock.

Delay detonators:

Delay blasting permits to divide the shot 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

No of holes	: 13holes
Yield	: 53m <sup>3</sup>
Total explosive required	: 5.63kg-Slurry explosives
Charge per hole	: 0.5kg
Blasting at day time only	: 12.0p.m-1.0p.m

c)	Powder factor in ore and overburden / waste / development heading / stope	:	Powder factor is proposed as 0.12kg per hole of explosives.
d)	Whether secondary blasting is needed, if so describe it briefly	:	Irrespective of the method of primary blasting employed, it may be necessary to re-blast a proportion of the rock on the quarry floor so as to reduce it to a size suitable for handling by the excavators and crushers.
e)	Storage of explosives (like capacity and type of explosive magazine)	:	<ol style="list-style-type: none"> <li>1. The applicant is advised to engage an authorized explosive agency to carry out blasting.</li> <li>2. First Aid Box will be keeping ready at all the time.</li> <li>3. Necessary precautionary announcement will be carried out before the blasting operation.</li> </ol>

6. **MINE DRAINAGE:**

a)	Likely depth of water table based on observations from nearby wells and water bodies	:	The ground water table is reported as of 30m in summer and 55m in rainy season from the general ground level observed in the adjacent bore well.
b)	Workings expected to be _____ m. above / reach below water table by the year _____	:	Proposed mining depth is 40m (20m AGL + 20m BGL). Now, the present Mining lease shall be proposed above the water table and hence, quarrying may not affect the ground water.

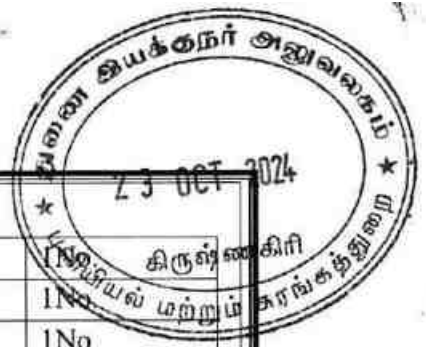


c)	Quantity and quality of water likely to be encountered, the pumping arrangements and places where the mine water is finally proposed to be discharged	:	The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300 L pm and it shall be pumped about periodically by a stand by diesel powered Centrifugal pump motivated with 7.5 H.P. Motor.																																
<b>7. STACKING OF MINERAL REJECTS AND DISPOSAL OF WASTE:</b>																																			
a).	Indicate briefly the nature and quantity of top soil, overburden / waste and mineral rejects likely to be generated during the years:																																		
	<table border="1"> <thead> <tr> <th>Year</th> <th>Topsoil/ Overburden(m<sup>3</sup>)</th> <th>Weathered rock/ Sideaburden(m<sup>3</sup>)</th> <th>Mineral rejects/ Waste</th> </tr> </thead> <tbody> <tr> <td>V</td> <td>1430</td> <td>---</td> <td>---</td> </tr> <tr> <td>VI</td> <td>---</td> <td>---</td> <td>---</td> </tr> <tr> <td>VII</td> <td>---</td> <td>---</td> <td>---</td> </tr> <tr> <td>VIII</td> <td>---</td> <td>---</td> <td>---</td> </tr> <tr> <td>IX</td> <td>---</td> <td>---</td> <td>---</td> </tr> <tr> <td>X</td> <td>---</td> <td>---</td> <td>---</td> </tr> <tr> <td><b>Total</b></td> <td>1403</td> <td>---</td> <td>---</td> </tr> </tbody> </table>	Year	Topsoil/ Overburden(m <sup>3</sup> )	Weathered rock/ Sideaburden(m <sup>3</sup> )	Mineral rejects/ Waste	V	1430	---	---	VI	---	---	---	VII	---	---	---	VIII	---	---	---	IX	---	---	---	X	---	---	---	<b>Total</b>	1403	---	---		
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b).	Land chosen for disposal of waste with proposed justification	:	The topsoil of 1403m <sup>3</sup> will be removed. The earth bund dumped in along the lease safety area and had been utilized for making haul road in the lease area.																																
c).	Attach a note indicating the manner of disposal and configuration, sequence of buildup of dumps along with the proposals for the stacking of sub-grade ore, to be indicated Year wise.	:	There is no waste rock will be proposed in this lease area.																																
<b>8. USE OF MINERAL:</b>																																			
a).	Describe briefly the end-use of the mineral (sale to intermediary parties, captive	:	The Charnockite is quarried as rough stone/ blue metal and used for road material and construction purpose, used as raw material																																





	consumption, export, industrial use)		to produce M-Sand, P-Sand, etc. Charnockite is a hard Black with Blue tinged bearing rock, hence it is called as "Blue Metal". It is mainly used in Stone crushing units and size reduced in to ½, ¾ and 1½ inches Jelly which are mainly used in road and building construction purpose. For instance, aggregates are mostly used for building roads and footpaths ,etc.
b).	Indicate physical and chemical specifications stipulated by buyers	:	Basically, the materials produced at this quarry are rough stone and topsoil the same are used for building stone, sized stone materials only, so there is no chemical specifications are specified. Only physical specifications are involved.
c).	Give details in case blending of different grades of ores is being practiced or is to be practiced at the mine to meet specifications stipulated by buyers.	:	Not blending process is involved.
9.	<b>OTHERS</b>		
	<b>Describe briefly the following</b> a) Site services	:	Infrastructure required for such mines like office, stores, canteen, first aid station, shelter latrine and bath rooms have been provided as per the Metalliferous Mines Regulations, 1961 as a welfare amenity for our quarry laborers.
	b) Employment potential: As per Mines safety under the provisions of Metalliferous Mines Rules, 1961 under the Mines Act, 1952, whenever the workers are employed more than 10, it is preferred to have a qualified Mining Mate to keep all the production workers directly under his control and supervision.  The following man power is proposed for quarrying stone material during the next five years period the same manpower will be utilize for this mining plan period to achieve the proposed production and to comply the		

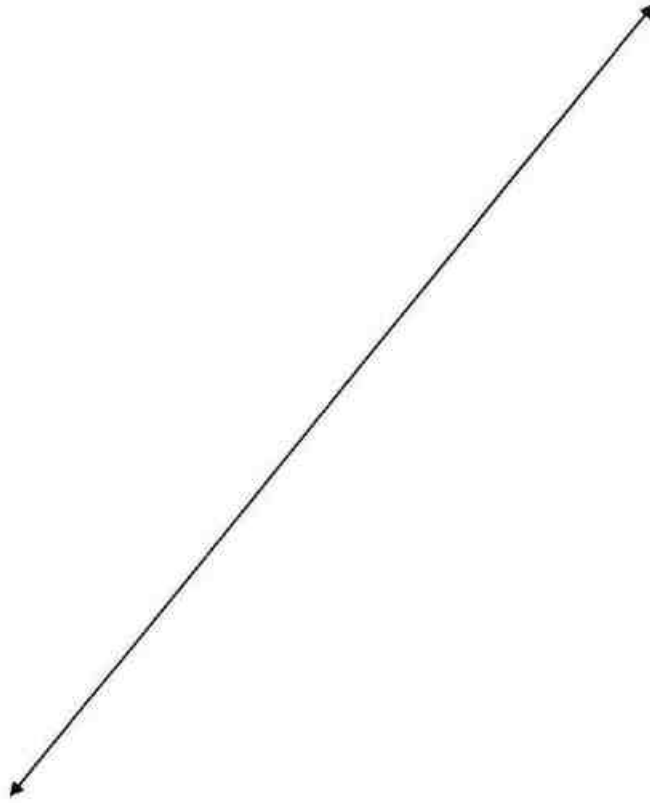


provisions of as per the MMR, 1961 norms.			
1.	Highly Skilled	Mines Manager	1No
		Mine Engineer	1No
		Mine Geologist	1No
		Blaster	1No
2.	Unskilled	Musdoor / Labours	12 No's
Total =			16 No's
<b>10 MINERAL PROCESSING/BENEFICIATIONS:</b>			
(a)	If processing / beneficiations of the ore or minerals mined is planned to be conducted on site or adjacent to the extraction area, briefly describe the nature of the processing /beneficiation. This should indicate size and grade of feed material and concentrate (finished marketable product), recovery rate.		: Excavated rough stone minerals directly will be used by the applicant in his own crusher for required size(i.e (1/4", 1/2", 1/3" and 1") The recovery of rough stone in this quarry is 100%.
(b)	Explain the disposal method for tailings or waste from the processing plant (quantity and quality of tailings proposed to be discharged, size and capacity of tailing pond, toxic effect of such tailings, if any, with process adopted to neutralize any such effect before their disposal and dealing of excess water from the tailing dam).		: No water shall be used for quarrying or any other processing except drinking water to be drawn from public sources. Some stagnation of rain water in the pit shall be used for drilling and spraying haul roads. Therefore, need for tailing dam doesn't arise. But tailing control of rain water flow during rainy season has to be done by decanting the SPM in a pit before passing the water in to natural system.
(c)	A flow sheet or schematic diagram of the processing procedure should be attached.		: Not applicable.
(d)	Specify quantity and type of		: Not applicable





	chemicals to be used in the processing plant.	:	
(e)	Specify quantity and type of chemicals to be stored on site / plant.	:	Not applicable
(f)	Indicate quantity (cu.m. per day) of water required for mining and processing and sources of supply of water. Disposal of water and of recycling.	:	Drinking is 0.15KLD, utilized water is 0.85KLD, Dust suppression is 1.0KLD and Green Belt is 1.0KLD. Minimum quantity of water 3.0KLD per day. It is proposed to make an own borewell for providing uninterrupted supply of RO drinking water, dust suppression and green belt development. The sewage water to a tune of 0.8KLD generated from the mine office toilet and mine labour toilet will be diverted to the septic tank followed by soak pit.

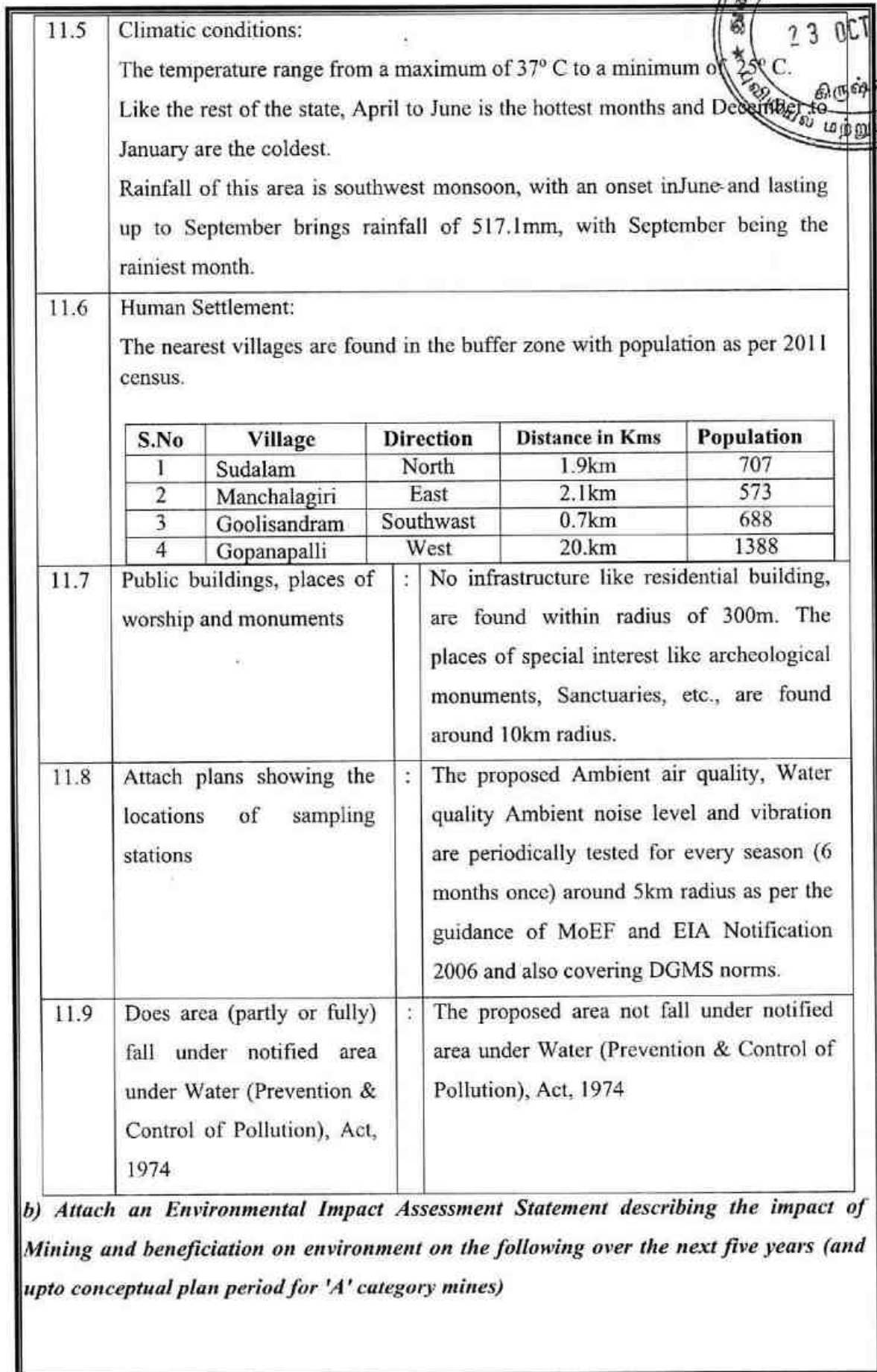


## PART – B

### 11.0 ENVIRONMENTAL MANAGEMENT PLAN:

a) Attach a note on the status of Baseline information with regard to the following:

11.1	Existing lease land use pattern indicating the area already degraded due to quarrying /pitting, dumping, roads, processing plant, workshop, township etc in a tabular form. The present land use pattern is given as below.																									
	<table border="1"> <thead> <tr> <th>SL No.</th><th>Land Use</th><th>Present area (Hect.)</th></tr> </thead> <tbody> <tr> <td>1.</td><td>Area under Mining</td><td>0.85.67</td></tr> <tr> <td>2</td><td>Infrastructure</td><td>Nil</td></tr> <tr> <td>3</td><td>Roads</td><td>0.02.0</td></tr> <tr> <td>4</td><td>Unutilized</td><td>0.45.83</td></tr> <tr> <td>5</td><td>Green belt</td><td>Nil</td></tr> <tr> <td>6</td><td>Settling Tank &amp; Drainage</td><td>Nil</td></tr> <tr> <td></td><td><b>Grand Total</b></td><td><b>1.33.5</b></td></tr> </tbody> </table>	SL No.	Land Use	Present area (Hect.)	1.	Area under Mining	0.85.67	2	Infrastructure	Nil	3	Roads	0.02.0	4	Unutilized	0.45.83	5	Green belt	Nil	6	Settling Tank & Drainage	Nil		<b>Grand Total</b>	<b>1.33.5</b>	
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11.2	Water Regime	: Water table in this area is noticed at a depth of 75m in summer and 70m in rainy season from the general ground level and ultimate depth of 40m (20m AGL +20m BGL) and above the water table and hence, quarrying may not affect the ground water.																								
11.3	Flora and Fauna	: There is no major flora observed in this area and except acacia, no other valuable trees are noticed in the lease area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.																								
11.4	Quality of air, ambient noise level and water	: Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., will be suppressed by periodical wetting of land by water spraying. Quarrying of rough stone will be carried out by drilling and blasting by using low power explosives, and hence, noise will be very minimum. However, periodical noise level monitoring will be carried out every six months around the quarry site.																								



i)	<p><b>Land area indicating the area likely to be degraded due to quarrying / pitting, dumping, roads, workshop, processing plant, township etc.</b></p> <p>The details of the land use pattern, during the ensuring plan period and till lease period is shown in the tabular form:</p> <table border="1"><thead><tr><th>Sl. No.</th><th>Land Use</th><th>Area in use during the quarrying period (Hect.)</th></tr></thead><tbody><tr><td>1</td><td>Area under Mining</td><td>0.63.10</td></tr><tr><td>2</td><td>Infrastructure</td><td>0.03.0</td></tr><tr><td>3</td><td>Roads</td><td>0.04.0</td></tr><tr><td>4</td><td>Green Belt</td><td>0.49.50</td></tr><tr><td>5</td><td>Un-Utilized Area</td><td>0.13.90</td></tr><tr><td colspan="2"><b>Grand Total</b></td><td><b>1.33.5</b></td></tr></tbody></table>		Sl. No.	Land Use	Area in use during the quarrying period (Hect.)	1	Area under Mining	0.63.10	2	Infrastructure	0.03.0	3	Roads	0.04.0	4	Green Belt	0.49.50	5	Un-Utilized Area	0.13.90	<b>Grand Total</b>		<b>1.33.5</b>
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<b>Grand Total</b>		<b>1.33.5</b>																					
ii).	Air Quality	Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., will be suppressed by periodical wetting of land by water spraying.																					
iii).	Water quality	A water sample from the open/bore wells was tested to NABL approved lab to assess hardness, Salinity, colour, Specific gravity, etc.																					
iv).	Noise levels	Quarrying of rough stone will be carried out by drilling and blasting by using low power explosives, and hence, noise will be very minimum. However, periodical noise level monitoring will be carried out every six months around the quarry site.																					
v).	Vibration levels (due to blasting)	No deep hole blasting envisaged. Small dia shot holes are used for breaking boulders. The maximum peak particles velocity shall be recorded using mini seismograph devices as per the guidance of MoEF and EIA Notification 2006 and also covering DGMS norms.																					
vi).	Water regime	No major water bodies like rivers, pond, lake et., located within a radius of 50m.																					
vii).	Socio-economics	<ol style="list-style-type: none"><li>To provide Employment opportunities of the nearby villagers.</li><li>For the cultural development of the nearby villagers.</li></ol>																					
viii).	Historical monuments etc.	There are no historical monuments, etc found around 10km radius.																					



c) Attach an Environmental Management Plan (supported by appropriate plans and sections) defining the time bound action proposed to be taken with sequence & timing in the following areas (or diagrams should be used):

i).	temporary storage and utilization of topsoil	:	There is a Topsoil of 1403m <sup>3</sup> will be removed. The earth bund dumped in along the lease safety area and had been utilized for making haul road in the lease area.
ii).	Yearwise proposal for reclamation of land affected by abandoned quarries and other mining activities during next five years (and upto conceptual plan period for 'A' category mines) clarifying the extent of back filling and re-contouring and / or alternative use of unfilled / partially filled excavations / road sides / slopes and mine. In case abandoned quarries/ pits are proposed to be used as reservoir, their size, water holding capacity and proposal for utilization of such water be given.	:	The present mining is proposed to a depth of 40m (20m AGL + 20m BGL) (R.L.896-856m) been envisaged as workable depth for safe & economic mining during the lease period. The mined-out area will be fenced on top of open cast working with S1 fencing. Low lying areas with water logging shall be used for fish culture. No immediate proposals for closure of pit as the rough stone persist still at deeper level.
iii).	<p><b><i>Programme of afforestation, Yearwise for the initial ten years (and upto conceptual plan period for 'A' category mines) indicating the number of plants with name of species to be afforested under different areas in hectares.</i></b></p> <p><b>Green Belt Development:</b></p> <p>Safety barrier, nearby school area and Nearest Panchayat approach Roads has been identified to be utilized for Greenbelt appropriate native species of Neem, Pungan and other regional trees will be planted in a phased manner as described below</p>		



Year	Place	Area in Sq.m	No. of Plants	Rate of survival	Rate	Amount in Rs
Five	Lease Boundary	4950	550	80%	@100 Rs Per sapling	55,000/-
Six	Approach road and Nearby Village Road	--	200	80%		20,000/-
Seven	Schools	--	100	80%		10,000/-
Total						85,000/-
iv).	Stabilization and vegetation of dumps along with waste dump management Year wise for the five years (and upto conceptual plan period for 'A' category mines).		:	No waste or rejects shall be proposed.		
v).	Measures to control erosion / sedimentation of water courses.		:	Not applicable. There is no major dumps are stabilize in this quarry area.		
vi).	Treatment and disposal of water from mine.		:	It will not be harmful and it does not require any treatment before discharging into the natural courses.		
vii).	Measures for minimizing adverse effects on water regime.		:	There is no water to be pumped out will be very pure and portable and therefore, it will not affect any water regime surrounding the quarry.		
viii).	Protective measures for ground vibrations / air blast caused by blasting.		:	It is a small "B" category open cast, semi mechanized mining and no heavy machinery shall be used. The only smooth blasting is proposed, therefore no change for ground vibration or noise from the quarry.		
ix).	Measures for protecting historical monuments and for rehabilitation of human settlements likely to be disturbed due to mining activity.		:	No historical monuments and for rehabilitation of human settlements doesn't to be disturbed during mining activity.		
x).	Socioeconomic benefits arising out of mining.		:	The nearest villages are will get employment benefits.		

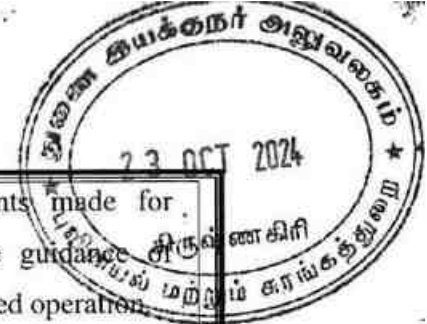
d). Monitoring schedules for different environmental components after the commencement of mining and other related activities. (for 'A' category mines only)

Not applicable. It is B category quarry



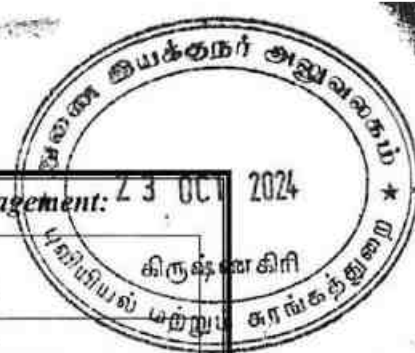
## 12.0 PROGRESSIVE QUARRY CLOSURE PLAN:

12.1	Steps proposed for phased restoration, reclamation of already mined out area.	:	The present mining is proposed to depth of 40m (20m AGL + 20m BGL). The mined-out area will be fenced on top of working bench with S1 fencing to arrest the entry of cattle's and public in to the quarry site.
12.2	Measures to be under taken on mine closure as per Act & Rules	:	Measures will be taken as per the Acts and Rules. Green belt development at the rate of 550 trees per year will be proposed in the quarry area. No immediate proposals for closure of pit as the rough stone persist still at deeper level.
12.3	Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area	:	The quarry lease is a existing mining lease, no mitigation measures observed.
12.4	Mine closure activity	:	The present mining plan is proposed to depth of 40m (20m AGL + 20m BGL) has been envisaged as workable depth for safe & economic mining during the lease period. The mined-out area will be fenced on top of open cast working with S1 fencing. No immediate proposals for closure of pit as the rough stone persist still at deeper level.
12.5	Safety and security	:	Safety measures implement to the prevent access to surface opening excavations will be taken as Metalliferous mine regulations, 1961, it is a small open cast mining method adopted. Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc have to be provided as per the



			circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation.
12.6	Disaster management and Risk Assessment	:	Open cast semi mechanized/ manual method of mining is adopted in this quarry. If the benches are made with proposed height and with no risk will be there. Even then if any minor or major accident happens the quarry staffs having First aid facilities with first aid box with all necessary medicine and stretches etc., to give first aid treatment at the site and will arrange immediately the vehicle to reach nearest hospital, if any disaster happens the lessee is capable to meet such eventualities. At the time of any accident during mining activity, proposal of first aid facility at quarry and one vehicle always ready at quarry site.
12.7	Care and maintenance during temporary discontinuance	:	A board of discontinuance will be changed on the main entrance of the working place. One watch man will be kept on the quarry area for security purposes also look after the survival of the plants.
12.8	Economic repercussions of closure of quarry and man power entrenchments	:	During the five years mining period the employment potential will be generated, general financial status and socio-economic conditions of approx. 16 labors will be improved. During the next five- year compensations will be given as per rules





### 12.9 Proposed Financial Estimate / Budget for (EMP) Environment Management:

A	<b>Fixed Asset Cost:</b>	
	1. Land Cost (Tender Cost)	: Rs. 1,45,00,000
	2. Labour Shed	: Rs. 1,00,000/-
	3. Sanitary Facility	: Rs. 1,00,000/-
	4. Fencing	: Rs. 2,35,000/-
	5. Other expenses (Security guard, dust bin, etc)	: Rs. 3,00,000/-
	<b>Total</b>	: <b>Rs. 1,52,35,000/-</b>
B	<b>B. Machinery cost</b>	: <b>Rs. 25,00,000/- (Hire Basis)</b>
C	<b>Total Expenditure of EMP cost (for next five years)</b>	
	1. Drinking Water Facility	: Rs. 1,00,000/-
	2. Sanitary facility & Maintenance	: Rs. 1,00,000/-
	3. Permanent water sprinkler	: Rs. 1,00,000/-
	4. Afforestation and its maintenance	: Rs. 85,000/-
	5. Safety Kits	: Rs. 1,00,000/-
	6. Provision of tyre washing facility	: Rs. 1,00,000/-
	7. Blasting materials with blast mat cost	: Rs. 10,00,000/-
	8. Environment monitoring	: Rs. 3,00,000/-
	<b>Total</b>	: <b>Rs. 18,85,000/-</b>
D	<b>Total Project Cost (A+B+C)</b>	: <b>Rs. 1,96,20,000/-</b>

### 13.0 FINANCIAL ASSURANCE:

Not applicable, it is a small "B" rough stone quarry.

### 14.0 CERTIFICATES:

All required certificates are enclosed.

### 15.0 PLAN AND SECTIONS, ETC:

Plan and Sections are submitted along with modified mining plan.

### 16.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT

- Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- The applicant will endeavor every attempt to quarry the rough stone economically without any wastage and to improve the environment and ecology.
- The Modified Mining Plan is prepared by the District Collector, Roc.No.178/2018/Mines Dated 09.03.2018.
- Total proposed production of  $74553\text{m}^3$  of rough stone up to a depth of 40m (20mAGL + 20m BGL) from the elevated level (R.L.896m-856m) for Six years plan period. Average production is  $12425\text{m}^3$  of rough stone per year.

### 17.0 CSR Expenditure:

CSR (Corporate Social responsibility) shall provide by the applicant 2.0% of average net profit of the company for the last three financial years to the nearby village on the Ministry has notified the amendments in section 135 of the Act as well in the CSR Rules on 22<sup>nd</sup> January 2021 as circular no. CSR-05/01/2021-CSR-MCA dated 25<sup>th</sup> August 2021.

Place: Dharmapuri, TN

Date:

Signature of the Recognized Qualified Person.

**Dr.S.KARUPPANNAN,M.Sc,Ph.D.,**  
RQP/MAS/263/2014/A  
GEO TECHNICAL MINING SOLUTIONS  
A NABET Accredited and ISO Certified Company  
1/213-B, Ground Floor, Natesan Complex,  
Collectorate Post Office, Oddapatti,  
Dharmapuri-636705, TamilNadu, India

This Mining Plan is approved based on guidelines / instruction issued and in corporation of the particulars specified in the letter Roc. No. 173/2018 Dated 23.10.2018 of the Deputy Director of Geology and Mining, Krishnagiri and subject to further fulfillment of the conditions laid down under Tamil Nadu Minor Mineral Concession Rules, 1959 and Minor Mineral Conservation and Development Rule 2010.

**DEPUTY DIRECTOR**

Department of Geology and Mining,  
Collectorate, Krishnagiri.

*[Signature]*  
23.10.24

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

Letter Roc. No. 173/2018 Dated 23.10.2018

தமிழ்நாடு அரசு  
2017



## திருவள்ளூர் மாவட்ட அரசிதழ்

சிறப்பு வெளியீடு

ஆணையின்படி வெளியிடப்பட்டது

திருவள்ளூர், டிசம்பர் 30, 2017 [எண் 24]  
[ஹேவிளம்பி, மார்கழி 15 - திருவள்ளூர் ஆண்டு 2048]

### மாவட்ட ஆட்சியர் அறிவிக்கை

[நக. எண். 72/2017 (கனிமம்), நாள் 27-12-2017]

திருவள்ளூர் மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் அமைந்துள்ள கல் குவாரிகளிலிருந்து சாதாரண கல் உடைக்க குத்தகை உரிமம் பெற முன்நிலை அடிப்படையில் பொன் விழா கிராம சுய வேலைவாய்ப்புத் திட்டத்தின் கீழ் பதிவு செய்யப்பட்ட சுய உதவி குழுக்கள் (SGSY) மற்றும் விடுவிக்கப்பட்ட கொத்தடிமை தொழிலாளர் சங்கங்களிடமிருந்து நேரடியாக விண்ணப்பங்களை வரவேற்கும் அறிவிக்கை.

1959 ஆம் ஆண்டு தமிழ்நாடு சிறு கனிமச் சலுகை விதிகளின் விதி 8 (10-A) என்படி திருவள்ளூர் மாவட்டத்தில் இவ்வறிவிக்கையுடன் இணைக்கப்பட்ட அட்டவணையில் குறிப்பிட்டுள்ள அரசு புறம்போக்கு நிலங்களில் அமைந்துள்ள சாதாரண கற்குவாரிகளிலிருந்து கட்டுமானப்பணிகளுக்கு உபயோகப்படுத்தப்படும் சாதாரண கட்டுக்கல், சக்கைகல், வேலிகல் ஐஸ்லி ஆகியவற்றை குவாரி செய்வதற்குக் குத்தகை உரிமம் பெற விருப்பம் உள்ள உரிய அங்கீகாரம் பெற்ற பொன்விழா கிராம சுய வேலைவாய்ப்புத் திட்டத்தின் கீழ் பதிவு செய்யப்பட்ட சுய உதவி குழுக்கள் (SGSY) மற்றும் விடுவிக்கப்பட்ட கொத்தடிமை தொழிலாளர் சங்கங்கள் ஆகியவற்றிற்கு கீழ்க்கண்ட நிபந்தனைகளுக்குப்பட்டு நேரடியாக குத்தகை உரிமம் வழங்கும் பொருட்டு விண்ணப்பங்கள் 2018 ஆண்டு ஜனவரி மாதம் 17-ஆம் தேதி மாலை 5.00 மணிவரை வரவேற்கப்படுகிறது.

இந்த அரசிதழுடன் இணைக்கப்பட்டுள்ள தமிழ்நாடு சிறு கனிமச் சலுகை விதிகளின் இணைப்பு VI-8 ல் கண்டுள்ள படவத்தில் பூர்த்தி செய்த விண்ணப்பங்கள் மேற்கண்ட நாள், நேரத்திற்குள் நேரிலோ, தபாலிலோ, திருவள்ளூர் மாவட்ட ஆட்சியர் அலுவலகத்தின் அறை எண். 30 ல் உள்ள திருவள்ளூர் மாவட்ட புவியியல் மற்றும் கரங்கத்துறை, துணை இயக்குநர் அலுவலகத்திற்கு வந்து சேருமாறு அனுப்ப வேண்டும். மேலே குறிப்பிட்டுள்ள கால கெடுவிற்கு பிறகு தாமதமாக வந்து சேரும் மனுக்கள் எவ்வித காரணம் கொண்டும் ஏற்றுக்கொள்ளப்படமாட்டாது.

#### நிபந்தனைகள்

01. மேற்கண்ட குழு மற்றும் சங்கங்கள் தமிழ்நாடு கூட்டுறவு சங்கங்களின் சட்டம் 1983 (தமிழ்நாடு சட்டம் 30/1983) அல்லது தமிழ்நாடு சங்கங்களின் பதிவு சட்டம் 1975 (தமிழ்நாடு சட்டம் 27/1975) ஆகியவையின் கீழ் பதிவு பெற்றிருக்க வேண்டும்.

02. சங்கம் பதிவு செய்யப்பட்ட பதிவுச்சான்றின் சான்றொப்பமிட்ட நகல் மனுவுடன் இணைக்கப்பட வேண்டும்.



புள்ளியில்:

03. சங்கத்தின் செயல்பாட்டு எல்லை சங்கவிதிகளில் (Bye-law) வரைமுறை செய்யப்பட்டு இருக்க வேண்டும். இந்த விதியின்கீழ் விண்ணப்பிக்கும் போது மேற்படி சங்கத்தின் செயல்பாட்டிற்கென வரைமுறை செய்யப்பட்டுள்ள பாகசாயத்து எல்லைக்குள் அமைந்துள்ள குவாரிகளுக்கு மட்டுமே விண்ணப்பித்தல் வேண்டும். சங்கத்தின் துணை விதிகள் நகல் இணைக்கப்பட வேண்டும்.

04. சங்கங்களில் உள்ள அனைத்து உறுப்பினர்களும் கல்குவாரிகளில் குறைந்த பட்சம் இரு ஆண்டுகள் வேலை செய்த முன் அனுபவம் பெற்றிருக்க வேண்டும். இதற்கான சான்றிதழை மாவட்ட ஆட்சியரிடமிருந்து பெற்று இணைக்க வேண்டும்.

05. இத்துடன் இணைக்கப்பட்ட விண்ணப்ப படிவம் VI-B வரிசை எண் 9,10ல் கூறப்பட்டுள்ளபடி வருமான வரி மற்றும் கரங்க வரி நிலுவையில்லா சான்று அல்லது ரூ 20.00 (ரூபாய் இருபது மட்டும்) மதிப்புள்ள முத்திரைத்தாளில் ஆணை உறுதி வாக்குமூலம் நோட்டரி வழக்குரைஞர் முன்னிலையில் கையொப்பம் பெற்று விண்ணப்பப்படிவத்துடன் இணைக்கப்பட வேண்டும்.

06. ஒவ்வொரு சாதாரண கல்குவாரிக்கும் திரும்ப வழங்க இயலாத விண்ணப்ப கட்டணமாக ரூ 500/- (ரூபாய் ஐநூறு மட்டும்) மாவட்ட கருவூலத்தில் செலுத்தி அசல் செலுத்துச் சீட்டை விண்ணப்பப்படிவத்துடன் இணைக்க வேண்டும்.

07. கல்குவாரிகளுக்கான குவாரிக் குத்தகை உரிய சங்கங்களின் (அல்லது) குழுவின் பெயரிலேயே வழங்கப்படும். தனி நபர் பெயரில் வழங்கப்பட மாட்டாது.

08. மாவட்ட ஆட்சியரை தலைவராக்க கொண்டும், மாவட்ட ஊராட்சி மன்றத் தலைவர் மற்றும் குவாரி அமைந்துள்ள ஊராட்சி ஒன்றியத் தலைவரை உறுப்பினராகக் கொண்டும், ஊரக வளர்ச்சித் துறையின் கூடுதல் ஆட்சியர் பதவிக்கு இணையான அலுவலர் மற்றும் புவியியல் மற்றும் கரங்கத்துறை துணை இயக்குதரை அலுவல் சார்ந்த உறுப்பினராக கொண்டு அமைந்துள்ள சிறப்பு குழுவின் முன்னிலையில் மனுக்கள் பரிசீலிக்கப்பட்டு 60 நாட்களுக்குள் இறுதி ஆணை பிறப்பிக்கப்படும்.

09. இவ்விதியின் கீழ் வழங்கப்படும் குவாரியின் குத்தகை காலம் 05 (ஐந்து) ஆண்டுகளாகும், சூழ்நிலைக் கேற்பவும், பொது நலன் கருதியும் கனிமத்தின் அளவைப் பொறுத்தும் குவாரி குத்தகை காலத்தை ஐந்து ஆண்டுகளுக்கு குறைவாக நிர்ணயம் செய்ய மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. தமிழ்நாடு சிறு கனிமச் சலுகை விதிகளின் விதி 8 (10-A) என்படி வழங்கப்படும் இந்த குவாரிக் குத்தகையை பூதுப்பிக்க இயலாது.

10. ஒரே குவாரிக்கு குத்தகை கோரி சுய உதவிக் குழுவும் மற்றும் விடுவிக்கப்பட்ட கொத்தடிமைகளால் அமைக்கப்பட்ட தொழிலாளர் கூட்டுறவுச் சங்கமும் மனு செய்திருந்தால் முன்னுரிமை அடிப்படையில் விடுவிக்கப்பட்ட கொத்தடிமை தொழிலாளர் கூட்டுறவு சங்கத்திற்கு குவாரிக் குத்தகை அளிக்கப்படும்.

11. குவாரி அமைந்துள்ள பஞ்சாயத்து யூனியன் எல்லைக்குள் ஏற்கனவே பொது ஏலம் அல்லது டெண்டர் வாயிலாக குத்தகை விடப்பட்டிருந்தால் பெறப்பட்ட குத்தகை தொகையின் சராசரி அடிப்படையிலே அல்லது அவ்வாறு பஞ்சாயத்து யூனியன் எல்லைக்குள் குவாரி ஏதும் டெண்டருடன் இணைந்த ஏலம் மூலம் குத்தகைக்கு விடப்பட வில்லையெனில் மாவட்டம் முழுவதும் ஏலம் விடப்பட்டுள்ள குவாரிகளின் குத்தகை தொகையின் அடிப்படையில் மாவட்ட ஆட்சியர் குத்தகை காலம் முழுமையாக்குமான ஒட்டு மொத்த குத்தகைத் தொகையை நிர்ணயம் செய்வார். அத்தொகையில் 50 % தள்ளுபடி செய்யப்பட்டு மீதி தொகை தற்போது குவாரிக்கான குத்தகைத் தொகையாக நிர்ணயிக்கப்படும். இக்குத்தகைத்தொகையை முதல் ஆண்டில் நான்கு தவணைகளாக செலுத்தப்பட வேண்டும். ஒவ்வொரு தவணைத் தொகையும் உரிய காலாண்டு காலம் ஆரம்பிக்கும் தேதிக்கு 15 நாட்களுக்கு முன்னரே செலுத்தப்பட வேண்டும். அவ்வாறு தொகையை செலுத்தத் தவறினால் அச்சங்கத்திற்கு/குழுவிற்கு வழங்கப்பட்ட குவாரிக் குத்தகை மாவட்ட ஆட்சியரால் ரத்து செய்யப்படுவதுடன் குழு/சங்கத்தினர் எதிர்காலத்தில் முன்னுரிமை முறையில் குவாரி குத்தகை பெறும் தகுதியை இழந்தவராவர். அச்சுழ்நிலையில் அவர்கள் மேற்கொண்டு குத்தகை கோரி மனுச் செய்திருந்தால் அம்மனு உடனடியாக தள்ளுபடி செய்யப்படும்.

12. மாண்புமிகு இந்திய உச்சநீதிமன்றம் வழக்கு எண் ஐ.ஏ 12-13/2012 எஸ்.எல்.பி (சி) எண்.19628 - 19629/2009 மற்றும் இவற்றின் மீது 27.02.2012 அன்று வழங்கியுள்ள ஆணைகளின்படியும் இந்திய அரசு கற்றுச் சூழல் மற்றும் வனத்துறை குறிப்பானை எண். எல்.11011/47/2011 - IA. II(M) நாள் 18.05.2012ன்படியும், 1959-ஆம் வருடத்தை தழிநாடு சிறுகனிமச் சலுகை திருத்தம் செய்யப்பட்டு சேர்க்கப்பட்ட விதிகள் 41 மற்றும் 42-ல் கண்டுள்ளவாறு அங்கீகரிக்கப்பட்ட கரங்கத்திட்டம் மற்றும் தமிழ்நாடு மாநில/திருவள்ளூர் மாவட்ட கற்றுசூழல் மாதிரி மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று பெற்று சமர்ப்பித்த பின்பு மட்டுமே குவாரி குத்தகை வழங்க முடியும்.





13. எனவே இவ்விதிகளின்படி குவாரி குத்தகை உரிமம் பெற தகுதியுள்ள குழு/ சங்கம் தேர்வு செய்யப்பட்டுள்ள அவர்களுக்கு முதல் காலாண்டு குத்தகை தொகை மற்றும் அதற்கான 2 % வருமானவரி ஆகியவற்றை உரிய காலத்திற்குள் செலுத்துமாறு அறிவிக்கை அனுப்பப்படும். அவர்கள் முதல் காலாண்டு குத்தகை தொகையைப் பசலாகையவடன அவர்களுக்கு குவாரி குத்தகை வழங்கப்பட்ட உள்ள குவாரியின் புல எனப் பரப்பளவு ஆகிய விவரங்கள் அடங்கிய அறிவிக்கை வழங்கப்பட்டு அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் தமிழ்நாடு மாநில/கிருஷ்ணகிரி மாவட்ட சுற்றுசூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று ஆகியவற்றை உரிய காலத்திற்குள் சமர்ப்பிக்குமாறு தெரிவிக்கப்படும்.

14. மேற்கண்ட அறிவிக்கை பெற்றுக்கொண்ட குழு/சங்கத்தினர் சுரங்கத்திட்டத்தை அங்கீகாரம் பெற்ற தகுதி வாய்ந்த நபர் (RQP) மூலம் அரசு தெரிவித்துள்ள விதிகளையும் வழிகாட்டுதலின் படி தயாரித்து அறிவிக்கை பெறப்பட்ட நாளிலிருந்து மூன்று மாத காலத்திற்குள் கிருஷ்ணகிரி புலியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநரிடம் அங்கீகாரம் பெற சமர்ப்பிக்க வேண்டும்.

15. மேற்கண்ட குழு/சங்கத்தினர் கிருஷ்ணகிரி புலியியல் மற்றும் சுரங்கத்துறை துணை இயக்குநரால் அங்கீகாரம் வழங்கப்பட்ட சுரங்கத்திட்டத்தை தமிழ்நாடு மாநில/ கிருஷ்ணகிரி மாவட்ட சுற்றுசூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் முன்பு சமர்ப்பித்து தடையின்மை சான்று கோரி விண்ணப்பித்து தடையின்மை சான்று மற்றும் தமிழ்நாடு மாகாட்டுப்பாட்டு வாரிய இசைவு ஆகியவற்றை பெற்று சமர்ப்பிக்க வேண்டும்.

16. அ) குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றம் முன்பு மேற்கண்ட குழு/சங்கத்தினர் மாவட்ட வன அலுவலர் ஓட்டர் அவர்களது முன் அனுமதி பெற்று சமர்ப்பிக்க வேண்டும்.

ஆ) இரு மாநில எல்லையிலிருந்து ஐந்து கிலோமீட்டர் தொலைவிற்குள்ளும் வனவிலங்கு சரணாலயத்திலிருந்து பத்து கிலோமீட்டர் தொலைவிற்குள்ளும் அமைந்துள்ள குவாரிகளுக்கு மத்திய அரசு சுற்றுச்சூழல் ஆணையத்தின் முன் அனுமதி பெற்று சமர்ப்பிக்க வேண்டும்.

17. காலேரி வடக்கு வனவிலங்கு சரணாலயத்திலிருந்து பத்து கிலோமீட்டர் தொலைவிற்குள் அமைந்துள்ள குவாரிகளுக்கு வனவிலங்கு தேசிய வாரிய நிலைக்குழுவிடமிருந்து (Standing Committee of National Board of Wildlife) தடையின்மை சான்று பெற்று சமர்ப்பிக்க வேண்டும்.

18. அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் முதல் ஐந்து ஆண்டு காலத்திற்கு மட்டுமே செல்லத்தக்கதாகும்.

19. மேற்கண்ட ஆவணங்களை சமர்ப்பித்தபின்பு தகுதிவாய்ந்த குழு/ சங்கத்தினருக்கு குவாரி குத்தகை வழங்கி மாவட்ட ஆட்சியரால் ஆணையிடப்படும்.

20. அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் தமிழ்நாடு மாநில சுற்றுசூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் தடையின்மை சான்று ஆகியவற்றை குறிப்பிட்ட காலக்கெடுவிற்குள் சமர்ப்பிக்க தவறினால் மாவட்ட ஆட்சியர் அவர்களால் சம்பந்தப்பட்ட சங்க நிர்வாகிகளுக்கு மாவட்ட ஆட்சியர் முன்பு விசாரணைக்கு ஆஜராக வாய்ப்பளித்து விசாரணை நடத்தப்பட்டு ஏற்கனவே வழங்கப்பட்ட உத்தரவு ரத்து செய்யப்படும்.

21. குவாரி குத்தகை ஆணை வழங்கப்பட்ட பின்பு நிர்ணயிக்கப்பட்ட குத்தகை தொகையில் 10 சதவீதம் அல்லது ரூ 5000/- (ரூபாய் ஐந்தாயிரம் மட்டும்) இவற்றில் எது அதிகமோ அது காப்புத் தொகையாக செலுத்தப்பட வேண்டும் மற்றும் குவாரி குத்தகை வழங்கப்பட்ட பரப்பிற்கான பரப்புலரி செலுத்த வேண்டும் மற்றும் குறிப்பிட்டுள்ள கால கெடுவிற்குள் உரிய முத்திரை தாளில் குத்தகை ஒப்பந்தத்திரம் தயார் செய்து மாவட்ட ஆட்சியர் அவர்களுடன் குத்தகை ஒப்பந்தம் நிறைவேற்றி சமர்ப்பிக்கப்பட சார் பதிவாளர் அலுவலகத்தில் குத்தகைதாரர் தனது செலவில் பதிவு செய்து மீள சமர்ப்பிக்க வேண்டும்.

22. மாவட்ட ஆட்சியர் அவர்களுடன் ஒப்பந்தத்திரம் நிறைவேற்றிய பின்னரே சம்பந்தப்பட்ட குழு/சங்கத்தினர் குவாரிப்பணி செய்ய அனுமதிக்கப்படுவர்.

23. அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டத்தில் தெரிவித்துள்ளவாறு மட்டுமே குவாரிப்பணிகள் மேற் கொள்ளப்படவேண்டும் அதற்கு மாறாக குவாரிப்பணிகள் மேற்கொள்வது கண்டறியப்பட்டால் குவாரிப்பணியை நிறுத்தி வைப்பதற்கு மாவட்ட ஆட்சியரால் நடவடிக்கை எடுக்கப்படும்.



24. குத்தகை உரிமம் பெற்ற குழுக்கள்/ சங்கங்கள் குவாரிக்காக நிர்ணயிக்கப் பட்ட குத்தகை உரிமம் வழங்கப்பட்ட குவாரியில் இருந்து எடுத்துச் செல்லப்படும் அனைத்து வகையான சிறு கனிமங்களுக்கும் (பொது) ஆம் ஆண்டு சிறு கனிமச்சலுகை விதிகள் இணைப்பு II இல் உள்ளவாறு சீனியரேஜ் கட்டணம் செலுத்தி கனிமங்களை எடுத்துச் செல்ல, கிருஷ்ணகிரி மாவட்ட புவிமியல் மற்றும் சுரங்கத்துறை துணை இயக்குநர் அலுவலகத்தில் உரிய அனுப்புகைச் சீட்டில் மேலொப்பம் பெற்று குவாரியிலிருந்து கனிமங்களை ஏற்றிச் செல்லும் ஒவ்வொரு வாகனத்திற்கும் முறையாக பூர்த்தி செய்து கொடுக்க வேண்டும் குத்தகை அனுமதி வழங்கப்பட்ட நிலத்திலிருந்து வெட்டி எடுக்கப்படும், வெளியேற்றும் மற்றும் இருப்புள்ள கனிமங்களுக்கும் கற்களுக்கும் முறையான கணக்குகளை சுரங்கவாயில் பதிவேட்டில் முறையாக பராமரித்தல் வேண்டும். துவற்றை சம்மந்தப்பட்ட அலுவலர்கள் தனிக்கைக்கு ஆண்படுத்த கோரினால் தவறாது சமர்ப்பிக்க வேண்டும்.

25. குவாரிகளுக்கு அருகில் உள்ள அங்கீகரிக்கப்பட்ட குடியிருப்புகளுக்கு 300 மீட்டரும் தேசிய நெடுஞ்சாலைகள், ரெஸ்பாண்டிகள், மின்கம்பங்கள் ஆகியவற்றிற்கு 50 மீட்டரும் பஞ்சாயத்து சாலைகளுக்கு 10 மீட்டரும் பாதுகாப்பு இடைவெளியிட்டு மீதமுள்ள இடத்திற்குள் மட்டுமே குவாரிப் பணி செய்யவேண்டும். பொது மக்கள் உபயோகிக்கும் இடம், குடியிருப்புகள், பட்டா நிலங்கள் அல்லது பொதுச் சொத்துகளுக்கு ஏதேனும் சேதம் ஏற்படின் அதற்கு குத்தகைதாரரே முழுப்பொறுப்பு ஏற்க வேண்டும்.

26. மேற்படி கல் குவாரிகளில் சாதாரண கல், சக்கைக்கல், கட்டுக்கல், ஐஸ்ரிகற்கள் ஆகியவற்றை மட்டும் குவாரி செய்ய வேண்டும். வெளிநாட்டிற்கு ஏற்றுமதி செய்வதற்கும் மேருகேற்ற பயன்படும் வகையிலும் உள்ள பெரிய அளவிலான கற்குண்டங்களை எக்காரணத்தை முன்னிட்டும் உற்பத்தி செய்யக்கூடாது.

27. குத்தகைக்கு விடப்படும் கல் குவாரிகளுக்கு அரசு நிலங்களில் பாதை இல்லாத பட்சத்தில் குத்தகை எடுப்பவரே தமது சொந்த பொறுப்பில் பாதை ஏற்படுத்திக் கொள்ள வேண்டும்.

28. வழங்கப்பட்ட குத்தகை உரிமத்திற்கு பொது மக்கள் மற்றும் அரசு துறை மூலம் கடுமையான ஆட்சேபம் இருப்பின் பொது நன்மையை கருதி மாவட்ட ஆட்சியர் குத்தகையை ரத்துச் செய்ய நேரிட்டால் அதனால் ஏற்படும் இழப்பிற்கு ஈடுகோர குத்தகைதாரருக்கு எவ்வித உரிமையும் இல்லை.

29. குவாரிக் குத்தகையை வேறுயாருக்கும் மாற்றவோ உள் குத்தகைக்கு விடவே கூடாது. அப்படி ஏதாவது செய்திருப்பது தெரியவந்தால் மேற்படி குத்தகை ரத்துச் செய்யப்படுவதுடன் குத்தகைதாரர் செலுத்திய தொகையும் அரசுக்கு ஆதாயம் செய்யப்படும்.

30. சிறு கனிமத்திற்கு உரிய அனுப்புகை சீட்டை குத்தகை வழங்கப்பட்ட குவாரியிலிருந்துதான் வாகனங்களுக்கு கொடுத்து அனுப்ப வேண்டும். அனுப்புகை சீட்டை வேறு இடங்களிலிருந்தோ அல்லது வேறு குவாரிகளிலிருந்தோ கொடுத்து அனுப்பினால் குத்தகை உரிமம் ரத்துச் செய்யப்பட்டு அனைத்து தொகைகளும் அரசுக்கு ஆதாயம் செய்யப்படும்.

31. ஒப்புதல் பெறப்படாத அனுப்புகை சீட்டுடன் கொண்டு செல்லப்படும் சிறுகனிமங்கள் முறையற்ற வகையில் எடுத்ததாக கருதப்பட்டு உரிய சட்டத்தின்படி உரிய அலுவலர்களால் கைப்பற்றப்பட்டு அபராதம் விதிக்கப்படும்.

32. அனுப்புகை சீட்டில் உள்ள கலங்கள் பூர்த்தி செய்யப்படாமலோ அல்லது தவறாக எழுதப்பட்டு வாகனங்களுக்கு கொடுக்கப்பட்டிருந்தாலோ சிறுகனிமம் கொண்டு செல்லும் வாகன உரிமையாளருக்கு அபராதம் விதித்து வசூல் செய்யப்படும். குவாரி குத்தகையை ரத்து செய்ய நடவடிக்கை மேற்கொள்ளப்படும்.

33. குத்தகை நிபந்தனை மீறப்பட்டால் குத்தகையை ரத்துச் செய்யவோ செய்யப்பட்ட தவறுகளுக்கு குத்தகைதாரருக்கு தண்டனை விதிக்கவோ கிரிமினல் வழக்கு தொடரவோ மாவட்ட ஆட்சியருக்கு முழு அதிகாரம் உண்டு. குத்தகை ரத்துச் செய்யப்பட்டால் காப்புத் தொகை உள்பட அனைத்து தொகைகளும் அரசுக்கு ஆதாயம் செய்யப்படும். மாவட்ட ஆட்சியர் எக்காரணத்திற்காவது குவாரி குத்தகையை ரத்துச் செய்யும் பட்சத்தில் அதனால் ஏற்படும் எவ்வித நட்டங்களுக்கும் அரசு பொறுப்பில்லை. குத்தகை எடுத்தவர் எந்த காரணத்தை முன்னிட்டும் தனக்கு இழப்பு ஏற்பட்டால் நஷ்டஈடு கேட்கக்கூடாது.

34. குவாரிகளின் எல்லைகள் பற்றி பிரச்சனைகள் ஏற்பட்டால் மாவட்ட ஆட்சியரின் தீர்ப்பே இறுதியானது.

35. கற்குவாரி குத்தகை உரிமம் வழங்கப்பட்ட பின்னர் அக்கற்குவாரியின் ஏதாவது ஒரு பகுதி வரலாற்று முக்கியத்துவம் வாய்ந்த யுரதானக்கால கல்வெட்டுக்கள், சிற்ப வடிவமைப்புகள் போன்றவைகள் காணப்பட்டால் அது குறித்து அரசுக்கு தகவல் தரவேண்டும். மேலும் அப்பகுதியில் கற்கள் உடைப்பது நிறுத்தப்பட்டு அப்புராதன கிணங்கள் பாதுகாக்கப்பட வேண்டும்.



36. குத்தகைதாரர் குத்தகை வழங்கப்பட்ட குவாரி முகப்பில் குவாரியின் புல எண், பரப்பு, குத்தகைவாரியின் குத்தகை வழங்கப்பட்ட மாவட்ட ஆட்சியர் செயல்முறை எண், குத்தகை தொகை மற்றும் குத்தகை காலம் போன்ற விவரங்கள் குறிக்கப்பட்ட தகவல் பலகையை இவ்வறிவிக்கையில் இணைக்கப்பட்ட இணைப்பு 4ல் கண்ட படிவத்தில் தனது சொந்த செலவில் ஊடகக் குத்தகை காலம் முழுவதும் நல்ல முறையில் பராமரிக்கவேண்டும்.

37. குத்தகைதாரர் குவாரியின் எல்லைகளை தெளிவாக தெரியும்படி வண்ணமிட்ட கல் உள்ளறி அடையாளம்ட்டு வைத்தபின் குவாரிசெய்ய வேண்டும். எல்லைகளுக்கான குத்தகை காலம் முழுவதும் தனது சொந்த செலவில் நன்கு பராமரிக்க வேண்டும்.

38. அரசு, ஆணையர் புவியியல் மற்றும் சுரங்கத்துறை மற்றும் மாவட்ட ஆட்சியரால் இது தொடர்பாக ஏற்படுத்தப்பட்டுள்ள மற்றும் அவ்வப்போது ஏற்படுத்தப்படும் சட்ட திட்டங்களுக்கும் நிபந்தனைகளுக்கும் குத்தகைதாரர் கட்டுப்பட்டு நடக்க வேண்டும்.

39. இக்குவாரி குத்தகை தொடர்பான நடவடிக்கைகள் அனைத்தும் தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959 இல் உள்ள அனைத்து விதிகளுக்கும் 1957 ஆம் ஆண்டு சுரங்கங்கள் மற்றும் கனிமங்கள் (முறைப்படுத்துதல் மற்றும் மேம்படுத்துதல்) சட்டம் மற்றும் தமிழ்நாடு அரசு அவ்வப்போது பிறப்பிக்கும் சட்டம் மற்றும் விதி முறைகளுக்கும் கட்டுப்பட்டதாகும்.

40. 1961ம் ஆண்டின் மெட்ராஸ்பேரஸ் மைன்ஸ் ரெகுலேஷன்ஸ், 1936 ஆம் ஆண்டின் சம்பளம் வழங்குதல் சட்டம், 1984 ஆம் ஆண்டின் இந்திய வெடிப்பொருட்கள் சட்டம், 1954 ஆம் ஆண்டு குறைந்தபட்ச ஊதியச்சட்டம் ஆகியவற்றிற்கு உட்பட்டு குத்தகைதாரர் கனிமங்கள் வெட்ட வேண்டும்.

41. குத்தகை கோரும் விண்ணப்பத்தினை பரிசீலித்து ஏற்றுக்கொள்ளவோ, நிராகரிக்கவோ மாவட்ட ஆட்சியருக்கு பூரண அதிகாரம் உள்ளது. குத்தகை உரிமம் வழங்குதல் தொடர்பாக மாவட்ட ஆட்சியரின் முடிவே இறுதியானதாகும்.

42. காலம் கடந்து பெறப்படும் மறு, அறிவிப்பு செய்யப்படாத குவாரிகளுக்கான மறு முறையாக பூர்த்தி செய்யப்படாத மறு மற்றும் தேவையான இணைப்புகளுடன் பெறப்படாத மறு ஆகியவை நிராகரிக்கப்படும்.

43. குழந்தை தொழிலாளர்களை எக்காரணம் கொண்டும் குவாரி பணியில் ஈடுபடுத்தக்கூடாது.

44. குத்தகைதாரர் வருமானவரி நிர்ணய கணக்கு எண் பெற்று குவாரிக்கு செலுத்தப்படும் குத்தகை தொகைக்கும், சீனியரேஜ் தொகைக்கும் 2.00 சதவீதம் வருமான வரி செலுத்த வேண்டும்.

45. இந்த அறிவிப்பில் கண்டுள்ள எந்த குவாரியையும் முன் அறிவிப்பின்றி நீக்க மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு.

46. குத்தகை ஒப்பந்த பத்திரத்தில் உள்ள நிபந்தனைகளை மாற்றவோ அல்லது புதிய நிபந்தனைகளை சேர்க்கவோ மாவட்ட ஆட்சியருக்கு முழு அதிகாரம் உண்டு.

47. இந்த அறிவிப்பு பிரசுரிக்கப்பட்ட பின்னரோ, குத்தகை உறுதி ஆணை பிறப்பிப்பதற்கு முன்னரோ அல்லது பின்னரோ நிபந்தனைகளை மாற்றவோ, ரத்து செய்யவோ மற்றும் பட்டியலில் கண்டுள்ள எல்லா குவாரிகளின் குத்தகை உரிமம் கோரும் விண்ணப்பத்தை எக்காரணமின்றி ரத்து செய்யவோ மாவட்ட ஆட்சியருக்கு முழு அதிகாரம் உண்டு. அதற்கு விண்ணப்பதாரர் நஷ்ட ஈடு கோர உரிமை இல்லை.

48. இவ்விதியின் கீழ் வழங்கப்படும் குத்தகை உரிமங்கள் பதுப்பிக்கப்படமாட்டாது, மற்றும் எக்காரணத்தைக் கொண்டும் கால நீட்டிப்பு வழங்கப்படமாட்டாது.

49. குத்தகை காலம் முடிந்தவுடன் அல்லது உரிமம் ரத்து செய்யப்பட்டால் குத்தகை இடத்தை குத்தகைதாரர் மறு தினமே சம்மந்தப்பட்ட வட்டாட்சியரிடம் ஒப்படைத்து அதற்கான அத்தாட்சியை பெற்றுக் கொள்ள வேண்டும். இதனை மீறுபவர்கள் மீது தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் 1959ன் விதி 36 (அ)வின் படி உரிய தண்டனைக்குள்ளாவார்கள்.

50. குத்தகைதாரர் இவ்வறிக்கையின் இணைப்பு (2)ல் கண்டுள்ள படிவத்தில் கண்டுள்ளபடி குவாரியில் பதிவேடுகளை பராமரிக்க வேண்டும்.

51. குத்தகைதாரர் ஒவ்வொரு மாதமும் குவாரி செய்த கனிமத்திற்குரிய கணக்குகளை பிரதி மாதம் 5ஆம் தேதிக்குள் துணை இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை கிருஷ்ணகிரி அவர்களுக்கு இவ்வறிக்கையின் இணைப்பு 3ல் கண்டுள்ள படிவத்தில் தனித்தனிக் குறியிட செய்ய வேண்டும்.

52. குத்தகை காலத்திலோ அதற்குப் பின்னரோ கிராம தவறி குத்தகையை பயன்படுத்துவதில் ஏற்படும் சகல நஷ்டங்களுக்கும் குத்தகைதாரர் பொறுப்பு ஏற்க வேண்டும். இதற்காக விதிக்கப்படும் அபராதமும் செலுத்த வேண்டும்.

53. குவாரி குத்தகை வழங்கப்பட்ட பகுதியில் குழு/சங்க உறுப்பினர்கள் மட்டுமே குவாரிப்பணி செய்ய வேண்டும்.

54. குவாரியில் வேலை செய்யும் தொழிலாளர்கள் மற்றும் இது நங்களுக்கு விபத்து ஏற்படின் அதற்கான முழுப் பொறுப்பையும் குத்தகைதாரரே ஏற்க வேண்டும். இதற்கு எவ்வகையிலும் அரசு பொறுப்பாகாது.





55. குத்தகை நிபந்தனைகள் நிறைபட்டால் குத்தகையை ரத்து செய்யவோ, செய்த தவறுக்கு அபராதம் விதிக்கவோ மாஸ்டர் ஆட்சியருக்கு அதிகாரம் உண்டு.

56. குவாரிகளில் நவம்பர், டிசம்பர், ஜனவரி மற்றும் பிப்ரவரி மாதங்களில் மாலை ஆறு மணிக்கு மேல் காலை ஆறு மணி வரை பாறைகளை வெடி வைத்து தகர்க்க கூடாது.

57. குவாரிகளில் இருந்து நவம்பர், டிசம்பர், ஜனவரி மற்றும் பிப்ரவரி மாதங்களில் மாலை ஆறு மணிக்கு மேல் காலை ஆறு மணி வரை உடை கற்களை வெளியில் எடுத்துச் செல்லக் கூடாது.

58. குவாரி தொடர்பான அனைத்து பணிகளும் மாலை 6.00 மணி முதல் காலை 6.00 மணி வரை நிறுத்தப்பட வேண்டும்.

59. குவாரி குத்தகை வழங்கப்படும் பகுதியை சுற்றி குறைந்த பட்சம் 100 மரக்கன்றுகளாவது நடவுசெய்து பாதுகாத்து பராமரித்து பசுமை வளையம் அமைக்கப்படவேண்டும்.

60. ஆழ்துளை கிணறு அமைக்கும் வாகனம் கொண்டு குழிகள் அமைத்து வெடிவைக்க கூடாது.

61. அங்கீகரிக்கப்பட்ட சுரங்க திட்டத்தின்படி குவாரி பணி செய்யப்பட வேண்டும். குத்தகை காலத்தில் அங்கீகரிக்கப்பட்ட சுரங்க திட்டத்தில் குறிப்பிட்ட அளவை விட அதிகமான கனிமத்தை குவாரி செய்ய வேண்டியிருப்பின் திருத்தப்பட்ட சுரங்க திட்டம் சமர்ப்பித்து அங்கீகாரம் பெற்று அதற்கான சுற்றுச் சூழல் தடையின்மை சான்று சமர்ப்பித்த பின்பே அதனை செய்ய வேண்டும்.

62. குவாரி ஆரம்பிப்பது தொடர்பான அறிவிப்பை (Notice of Opening) இந்திய அரசு பெங்களூரு மண்டல சுரங்க பாதுகாப்பு துறை இயக்குநர் அவர்களுக்கு சமர்ப்பிக்க வேண்டும்.

63. குவாரியில் அங்கீகாரம் பெற்ற மைன்ஸ் மேனேஜர்/ மைன்ஸ் மேட்/ பிளாஸ்டர் ஆகியோர்களை பணியமர்த்திய பின்பே குவாரிப் பணியை தொடங்க வேண்டும்.

64. குவாரிப் பகுதியில் மைன்ஸ் மேட் கண்காணிப்பிலேயே வெடிவைத்து வெடிக்கும் பணியை செய்ய வேண்டும்.

65. குவாரிப் பகுதியில் விபத்து ஏதும் ஏற்பட்டால் அதனை உடனடியாக இந்திய அரசு பெங்களூரு மண்டல சுரங்க பாதுகாப்பு துறை இயக்குநர் அவர்களுக்கும் கிருஷ்ணகிரி மாஸ்டர் ஆட்சியர் அவர்களுக்கும் தெரிவிக்க வேண்டும். குவாரிப் பகுதியில் ஏற்படும் விபத்துக்கு குவாரி குத்தகை தாரரே முழு பொறுப்பவார்.

66. கீழ்க்கண்ட அட்டவணையில் குறிப்பிட்டுள்ள கல்குவாரிகளுக்கான குத்தகை காலம், குத்தகை ஒப்பந்தப்பத்திரம் நிறைவேற்றப்பட்ட நாளிலிருந்து 5 ஆண்டுகள் ஆகும். ஆனால் சரியான காரணங்களின் அடிப்படையில் குத்தகைக் காலத்தை குறைவாகவும் நிர்ணயிக்க மாஸ்டர் ஆட்சியருக்கு அதிகாரமுண்டு.

#### அட்டவணை - 1

சாதாரண கற்குவாரி பட்டியல்.

(i) கிருஷ்ணகிரி வருவாய் கோட்டம்.

கிருஷ்ணகிரி வட்டம்

வ.எண்	கிராமம்	ச.எண்	மொத்த பரப்பு	குவாரி குத்தகை வழங்கும் பரப்பு	வகைப்பாடு
(1)	(2)	(3)	(4) (ஹெக்டேர்)	(5) (ஹெக்டேர்)	(6)
1	கல்லுக்குறுக்கி	701(பகுதி-1)	83.60.5	2.00.0	மணல்
2	கல்லுக்குறுக்கி	701(பகுதி-2)	83.60.5	2.00.0	மணல்
3	கல்லுக்குறுக்கி	701(பகுதி-3)	83.60.5	2.00.0	மணல்





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(1)	(2)	(3)	(4) (ஹெக்டேர்)	(5) (ஹெக்டேர்)	
4	கல்லக்குறுக்கி	398/1 (பகுதி-B)	13.62.0	1.00.0	கல்லாங்குத்து
5	கல்லக்குறுக்கி	255(பகுதி)	2.48.0	1.00.0	போடுகால் (சும்பாரன் மலை)
6	கரியசர்கரம் தலாங்	50(பகுதி)	4.51.5	2.76.0	கல்வெட்டுக் குழி
7	கிருஷ்ணகிரி டவுன்	வார்டு-பி: யினாக்: 5/1(பகுதி-1)	49.67.0	2.50.0	பைர மலை புறம்போக்கு
8	கிருஷ்ணகிரி டவுன்	வார்டு-பி: யினாக்: 5/1(பகுதி-2)	49.67.0	2.50.0	பைர மலை புறம்போக்கு
9	கொண்டப்பநாயனப்பள்ளி	63(பகுதி)	1.90.0	1.50.0	கல்வெட்டு குழி
10	கொண்டப்பநாயனப்பள்ளி	202/1(பகுதி-எ)	15.61.5	3.00.0	தீ.ஏ.த பாறை
11	கொண்டப்பநாயனப்பள்ளி	202/1(பகுதி-பி)	15.61.5	3.00.0	தீ.ஏ.த பாறை
பர்கூர் வட்டம்.					
12	சிகரலப்பள்ளி	366(பகுதி-1)	10.05.5	2.00.0	மலை
13	சிகரலப்பள்ளி	366(பகுதி-2)	10.05.5	2.00.0	மலை
14	பர்கூர்	63(பகுதி-பி)	10.78.5	4.40.0	கல்லாங் குத்து
15	சூலாமலை	54 (பகுதி)	16.45.0	2.00.0	பாறை
16	பி.ஆர்.ஜி.மாதேப்பள்ளி	271(பகுதி)	3.56.0	3.00.0	போடுகால்
17	மல்லப்பாடி	652(பகுதி)	12.60.5	3.00.0	அரசு புறம்போக்கு
ஒருர் வருவாய் கோட்டம்.					
ஒருர் வட்டம்					
18	கோபனப்பள்ளி	327/3	1.33.5	1.33.5	போடு கால்
19	அச்செட்டிப்பள்ளி	881	1.26.5	1.26.5	தீ.ஏ.த, கல்லாங்குத்து
		884	2.22.0	2.22.0	
		885	0.81.0	0.81.0	
			4.29.5	4.29.5	
20	அச்செட்டிப்பள்ளி	886 (பகுதி)	8.85.0	3.00.0	தீ.ஏ.த,
21	அச்செட்டிப்பள்ளி	888 (பகுதி)	0.67.5	0.33.55	தீ.ஏ.த, கல்லாங்குத்து
		889	1.71.0	1.71.0	
		890 (பகுதி)	1.37.0	1.04.5	
		891(பகுதி)	2.12.5	1.00.0	
			5.88.0	4.09.0	
22	பஞ்சாட்சிபுரம்	603/1 (பகுதி-A)	21.20.5	2.50.0	தீ.ஏ.த
23	பஞ்சாட்சிபுரம்	603/1(பகுதி - B)	21.20.5	2.50.0	தீ.ஏ.த



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(1)	(2)	(3)	(4) (ஹெக்டேர்)	(5) (ஹெக்டேர்)	
24	அச்செட்டிப்பள்ளி	1050/1 A	2.17.5	2.17.5	பெருங்கடல் அணைத் திட்டம் கரங்குத்துறை
25	நாரிகாண்புரம்	40 (பகுதி)	2.24.0	1.80.0	தீ.ஏ.த.பாறை
26	கோவணப்பள்ளி	327/1 (பகுதி)	24.31.5	2.62.0	தீ.ஏ.த.
27	ஆலூர்	809(பகுதி-3)	11.25.0	1.46.0	தீ.ஏ.த.
28	ஆலூர்	588(பகுதி)	17.42.5	3.35.0	அரசுபுறம்போக்கு முத்தம்மண்கரடு
குளகிரி வட்டம்					
29	பண்ணப்பள்ளி	75/6 (பகுதி)	2.52.0	1.85.0	தீ.ஏ.த.பாறை
30	மீனந்தொட்டி	103/4	1.81.5	1.81.5	தீ.ஏ.த.பாறை
31	மீனந்தொட்டி	106/3	0.86.0	0.86.0	தீ.ஏ.த.பாறை
32	வெங்கடேசபுரம்	86(பகுதி-5)	60.86.0	4.20.0	தீ.ஏ.த. கரடு
33	மருதாண்டப்பள்ளி	109 (பகுதி-1)	7.52.0	2.00.0	தீ.ஏ.த. கரடு
34	மருதாண்டப்பள்ளி	109 (பகுதி-2)	7.52.0	1.20.0	தீ.ஏ.த. கரடு
35	பி.எஸ்.திம்மசந்திரம்	88/1 (பகுதி-2)	12.79.0	3.50.0	தீ.ஏ.த. பாறை
36	காமன்தொட்டி	615/3(பகுதி)	7.65.5	3.77.0	தீ.ஏ.த.
37	காமன்தொட்டி	754 & 760 (பகுதி-1)	36.46.5	1.80.0	தீ.ஏ.த.மலை
38	காமன்தொட்டி	754 & 760 (பகுதி-2)	36.46.5	2.10.0	தீ.ஏ.த.மலை
39	காமன்தொட்டி	754 & 760 (பகுதி-3)	36.46.5	3.66.0	தீ.ஏ.த.மலை
40	காமன்தொட்டி	754 & 760 (பகுதி-4)	36.46.5	3.50.0	தீ.ஏ.த.மலை
41	காமன்தொட்டி	754 & 760 (பகுதி-5)	36.46.5	4.30.0	தீ.ஏ.த.மலை
42	காமன்தொட்டி	1151,1155, 1212 to,1219, 1222,1225, 1226/A (பகுதி-1)	14.68.5	2.70.0	தீ.ஏ.த.
43	காமன்தொட்டி	1151,1155, 1212 to,1219, 1222,1225, 1226/A (பகுதி-2)	14.68.5	2.87.0	தீ.ஏ.த.
44	காமன்தொட்டி	1151,1155, 1212 to,1219, 1222,1225, 1226/A (பகுதி-3)	14.68.5	2.82.0	தீ.ஏ.த.
45	காமன்தொட்டி	1151,1155, 1212 to,1219, 1222,1225, 1226/A (பகுதி-4)	14.68.5	2.23.0	தீ.ஏ.த.



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(1)	(2)	(3)	(4) (ஹெக்டேர்)	(5) (ஹெக்டேர்)	
46	காமன்தொட்டி	1151,1155, 1212 to,1219, 1222,1225, 1226/A (பகுதி-5)	14.68.5	1.27.0	ம.ஏ.சு
47	தோளிப்பள்ளி	144(பகுதி)	3.41.5	2.30.0	தீ.ஏ.த. பாண்டி
48	தோளிப்பள்ளி	152/2(பகுதி)	4.23.0	2.00.0	தீ.ஏ.த. பாண்டி
49	துப்புகாணப்பள்ளி	637 (பகுதி-1)	25.27.0	4.00.0	தீ.ஏ.த.கரடு
50	துப்புகாணப்பள்ளி	637 (பகுதி-2)	25.27.0	4.50.0	தீ.ஏ.த.கரடு
51	துப்புகாணப்பள்ளி	637 (பகுதி-3)	25.27.0	4.50.0	தீ.ஏ.த.கரடு
52	சென்னப்பள்ளி	242/4(பகுதி)	1.87.5	1.00.0	தீ.ஏ.த.கரடு
53	பஸ்தலப்பள்ளி	130 (பகுதி)	16.90.0	4.66.0	தீ.ஏ.த.கரடு
54	துப்புகாணப்பள்ளி	314(பகுதி-3)	36.64.0	4.94.32	தீ.ஏ.த.கரடு
55	வெங்கடேசபுரம்	294(பகுதி-1)	18.36.5	3.00.0	தீ.ஏ.த.கரடு
56	வெங்கடேசபுரம்	294(பகுதி-2)	18.36.5	3.75.0	தீ.ஏ.த.கரடு
57	வெங்கடேசபுரம்	196(பகுதி-1)	9.70.0	2.00.0	தீ.ஏ.த.கரடு
58	வெங்கடேசபுரம்	196(பகுதி-2)	9.70.0	3.25.0	தீ.ஏ.த.கரடு
59	வெங்கடேசபுரம்	136(பகுதி-3)	69.36.0	4.10.0	தீ.ஏ.த.கரடு
60	வெங்கடேசபுரம்	136(பகுதி-12)	69.36.0	2.70.0	தீ.ஏ.த.கரடு
தேன்கனிக்கோட்டை வட்டம்					
61	ஒசுபுரம்	96 (பகுதி)	2.13.5	0.82.0	தீ.ஏ.த கல்லாங்குத்து
		97(பகுதி)	1.04.5	0.28.0	
			3.18.0	1.10.0	
62	மதிகொண்டப்பள்ளி	265 (பகுதி-1)	8.73.0	2.50.0	தீ.ஏ.த கல்லாங்குத்து
63	மதிகொண்டப்பள்ளி	265 (பகுதி-2)	8.73.0	2.50.0	தீ.ஏ.த கல்லாங்குத்து
64	மதிகொண்டப்பள்ளி	265 (பகுதி-3)	8.73.0	1.60.0	தீ.ஏ.த கல்லாங்குத்து
65	மதிகொண்டப்பள்ளி	265 (பகுதி-4)	8.73.0	1.46.0	தீ.ஏ.த கல்லாங்குத்து
66	கலுகொண்டப்பள்ளி	360 (பகுதி)	0.62.5	0.62.5	தீ.ஏ.த
67	நாகமங்கலம்	629 (பகுதி)	188.50.0	4.00.0	தீ.ஏ.த கல்லாங்குத்து
68	கோட்டுர்	144	2.00.5	2.00.5	தீ.ஏ.த கல்லாங்குத்து
69	தண்டரை	733 (பகுதி-2)	61.77.0	3.00.0	மலை பறம்போக்கு

திருவள்ளூர்,  
9-12-2017.

சி. கதிரவன்,  
மாவட்ட ஆட்சியர்,  
திருவள்ளூர் மாவட்டம்.

தமிழ்நாடு எழுதுபொருள் மற்றும் அச்சத்துறை இயக்குநரால் சேலம் அரசினர் இளை அச்சத்தில்  
அச்சிடப்பட்டு மாவட்ட ஆட்சியரால் வெளியிடப்பட்டது.



இணைப்பு - I

இணைப்பு - VI B

(தமிழ்நாடு சிறுவகைக் கனிமச்சலுகை விதிகள் 1959-ன் விதி 8 (10-A) ஐக் காணவும்)

அரசு புறம்போக்கு நிலங்களில் உள்ள சாதாரண கற்குவாரிகளை, விடுவிக்கப்பட்ட கொத்தடிமைத் தொழிலாளர்களால் அமைக்கப்பட்ட சங்கம் / (SGSY) பொன்விழா கிராம கய உதவிக்குழுக்கள் ஆகியவற்றுக்கு குத்தகை உரிமம் வழங்கக் கோரும் மனு.

(அசல் மற்றும் இரண்டு நகல்களில் இணைப்புகளுடன் கொடுக்க வேண்டும்)

நாள்

-2018

அனுப்புநர்

பெறுநர்

மாவட்ட ஆட்சியர்,  
கிருஷ்ணகிரி மாவட்டம்,  
கிருஷ்ணகிரி.

அய்யா,

நாள் / நாங்கள் 1959 ஆம் வருட தமிழ்நாடு சிறுவகைக் கனிமச்சலுகை விதி 8-ன் சரப்பு விதி 10 ஏ-ன்படி எங்கள் கய உதவிக்குழுவிற்கு / விடுவிக்கப்பட்ட கொத்தடிமை தொழிலாளர் சங்கத்திற்கு சாதாரண கற்கள் வெட்டி எடுக்க கல் குவாரி குத்தகை உரிமம் வேண்டி கிருஷ்ணகிரி மாவட்ட அரசிதழில் வெளியான \_\_\_\_\_ நாளிட்ட அறிவிக்கை எண். \_\_\_\_\_ன்படி விண்ணப்பித்தினை சமர்ப்பிக்கின்றோம்.

மனு தொடர்பான விவரங்கள் கீழே கொடுக்கப்பட்டுள்ளன.

1. (SGSY) பொன்விழா கிராம கய வேலை வாய்ப்பு திட்டக்குழு :  
விடுவிக்கப்பட்ட கொத்தடிமை சங்கத்தின் சரியான அலுவலக பெயரும் முகவரியும்
2. (அ) குழு மற்றும் சங்கங்கள் தமிழ்நாடு சுட்டுறவு சட்டம் 1983 :  
(தமிழ்நாடு சட்டம் 30/1983) அல்லது தமிழ்நாடு சங்கங்களின் பதிவு சட்டம் 1975 (தமிழ்நாடு சட்டம் 27/1975)  
ஆகியவைகளின்கீழ் பதிவு செய்யப்பட்ட விவரம் மற்றும் என்றிதழ் இணைக்கப்பட வேண்டும்

(ஆ) குழு / சங்க உறுப்பினர் பெயர் மற்றும் முகவரி பட்டியல் :  
(உறுப்பினர் பற்றிய விவரம் மற்றும் உறுப்பினர் எண் விவரம் இணைக்கப்பட வேண்டும்).

(இ) குழு / சங்கம் செயல்பட அனுமதிக்கப்பட்டுள்ள :  
பஞ்சாயத்து விவரம்.



3. மனுக்கட்டணம் செலுத்திய விவரம் (சலாள் என்ன மற்றும் நாள்) :

4. குழு / சங்கம் குவாரி செய்ய விரும்பும் சிறுகனிமத்தின் பெயர் :

5. கல்குவாரி செய்ய தேவைப்படும் குத்தகை கால அளவு :

6. கல்குவாரி செய்ய விண்ணப்பிக்கும் மொத்த பரப்பு :

7. குத்தகைக்கு மனு செய்யப்படும் புலம் பற்றிய விவரம் :

மாவட்டம்

(1)

வட்டம்

(2)

கிராமம்

(3)

பஞ்சாயத்து

(4)

அபுல எண்.

(5)

பரப்பளவு (ஹெக்டேர்)

(6)

8. ஏற்கனவே மனுதாரர் குழு / சங்கத்திற்கு தமிழ்நாட்டில் நடைமுறையில் குவாரி குத்தகை இருந்தால் அதன் விவரம் :

9. குழு / சங்கத்திற்கான வருமானவரி, நிறுவனவரின்மை சான்று :  
இணைக்கப்பட்டுள்ளதா, இல்லையெனில்  
சீழ்க்கண்டவற்றுக்கான உறுதி மொழி ஆவணம்  
இணைக்கப்பட்டுள்ளதா.

(அ) நடப்பு ஆண்டு வரை வருமானவரி விவரப்பட்டியல் :  
அத்துறைக்கு கொடுக்கப்பட்டு உள்ளதா (அல்லது)

(ஆ) துறையினரால் கணக்கிடப்பட்ட வருமானவரி :  
செலுத்தப்பட்டுள்ளதா (அல்லது)

(இ) 1961 ஆம் வருடத்திய வருமான வரி :  
செலுத்தப்பட்டுள்ளதா (அல்லது)

10. (அ) மனுதாரர் குழு / சங்கத்தின் உறுப்பினர் அனைவரும் :  
கரங்கவரி நிறுவன இல்லை என்பதற்கான சான்று  
பெற்றுள்ளனரா, ஆம் எனில் நகல் இணைக்கவும்

(ஆ) இந்த மனு கொடுக்கப்படும் நாளில் உறுப்பினர்களுக்கு :  
குத்தகை இல்லை எனில் அதற்கான உறுதிமொழி  
தனித்தனியாக கொடுக்கப்பட்டு இணைக்கப்பட்டுள்ளதா.



11. இதுதவிர மனுதாரர் வேறு விவரங்கள் ஏதேனும் கொடுக்க விரும்பினால் இங்கு குறிப்பிடவும்.

மேலே கொடுக்கப்பட்டுள்ள விவரங்கள் யாவும் உண்மையெனவும் இது தவிர வேறு விவரங்கள் அரசாங்கத்திடமிருந்து மாண்புமிகு அறிக்கை தயாராக உள்ளேன் எனவும் உறுதியளிக்கிறோம். காப்புத் தொகை மாவட்ட ஆட்சியரால் (அதன்மூலம்) சேகரிக்கப்பட்ட அதனை செலுத்தத் தயாராக உள்ளோம் என உறுதியளிக்கிறோம். குத்தகை பெறுவது தொடர்பாகவும், குவார்டியில் சந்தரணகற்கள் பெட்டுவது தொடர்பாகவும் 1959 ஆம் வருடத்திய தம்புநாடு சிறுகனிம சலுகை விதிகளையும் மாவட்ட அரசிதழில் சேர்ப்பிடப்பட்டுள்ள விதிகளையும் நன்கறிவோம் என்று உறுதியளிக்கின்றோம். சாதாரணகற்கள் பெட்ட வழங்கப்பட்ட கல்குவாரியில் மெருகேற்றி அழகுபடுத்தப் பயன்படும் வகையில் எந்த அளவிலும் கிராண்ட் கர்த்தண்டங்கள் பெட்ட மட்டோம் எனவும் உறுதியளிக்கிறோம்.

இப்படிக்கு,  
தங்கள் உண்மையுள்ள,

இப்படிக்கு,  
நாள்



13

இணைப்பு-2

குவாரியில் பராமரிக்கப்பட வேண்டிய பதிவேடு படிவம்!

நான் முன்இருப்பு உற்பத்தி மோத்தம் வெளியேற்றம் மீதி இருப்பு வாகனத்தின் தன்மையும் அதன் எண்ணுமும் என குறிப்பு

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10)

இணைப்பு-3

திங்கள் தோறும் குவாரியில் இருந்து எடுக்கப்பட வேண்டிய கனிமங்கள் குறித்து அனுப்பப்பட வேண்டிய கணக்குப் படிவம்

1. குத்தகைதாரரின் பெயர் மற்றும் முகவரி

2. குவாரி அமைந்துள்ள வட்டம்

கிராமம்

புல எண்,

பரப்பளவு

3. மாவட்ட ஆட்சியரின் ஆணை எண் மற்றும் நாள்

4. குத்தகை காலம்

5. குவாரியில் வேலை செய்யும் ஆட்களின் விவரம்

ஆண்கள்

பெண்கள்

6. குத்தகைத் தொகை செலுத்திய விவரம்

7. நடப்புத் திங்களில் எடுக்கப்பட்ட கனிமத்தின் அளவு

8. வெளியே அனுப்பப்பட்ட கனிமத்தின் அளவு

9. மீதி இருப்பில் உள்ள கனிமத்தின் அளவு

14  
இணைப்ப-4



1. குத்தகைதாரரின் பெயர் மற்றும் முகவரி

2. குவாரி அமைந்துள்ள வட்டம்

கிராமம்

புல எண்.

பரப்பளவு

3. மாவட்ட ஆட்சியரின் ஆணை எண் மற்றும் நாள்

4. குத்தகை காலம்

5. குத்தகை மொத்த தொகை



ந.க.எண்.178/2018/கனிமம்

மாவட்ட ஆட்சியர் அலுவலகம், கிருஷ்ணகிரி  
(புவியியல் மற்றும் சுரங்கத்துறை)  
கிருஷ்ணகிரி மாவட்டம், கிருஷ்ணகிரி.  
நாள் 09.02.2018



குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - சிறுகனிமம் - சாராரண கற்கள் கிருஷ்ணகிரி மாவட்டம் - ஓசூர் வட்டம் - கோபனப்பள்ளி கிராமம் அரசு புல எண் 327/3 ல் 1.33.5 ஹெக்டேர் பரப்பளவில் அரசு நிலத்தில் அமைந்துள்ள சாதாரண கற்குவாரிக்கு டெண்டருடன் இணைந்த ஏல முறையில் குத்தகை வழங்க டெண்டர்/பொது ஏலம் நடத்தப்பட்டது - பொது ஏலத்தில் அதிக தொகை கோரிய தி/ள்.விக்டரி ராக்ஸ், 4/637 தாசரப்பள்ளி, தேன்கனிக்கோட்டை வட்டம், கிருஷ்ணகிரி மாவட்டம் என்பவருக்கு சாதாரண கற்குவாரி குத்தகை வழங்குதல் தொடர்பாக அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம், தமிழ்நாடு மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் தடையின்மைச் சான்று மற்றும் தமிழ்நாடு மாசு கட்டுப்பாட்டு வாரிய இசைவு ஆகியவற்றை பெற்று வழங்க கோருதல் - தொடர்பாக.

பார்வை: 1. கிருஷ்ணகிரி மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.01நாள்: 19.01.2018.  
4. 03.02.2018 அன்று தினமணி நாளிதழில் வெளியிடப்பட்ட பத்திரிக்கை செய்தி.  
2. தி/ள்.விக்டரி ராக்ஸ், 4/637 தாசரப்பள்ளி, தேன்கனிக்கோட்டை வட்டம், கிருஷ்ணகிரி மாவட்டம் என்பவரது டெண்டர் விண்ணப்பம் நாள்: 07.02.2018.

கிருஷ்ணகிரி மாவட்டம், ஓசூர் வட்டம், கோபனப்பள்ளி கிராமம் அரசு புல எண் 327/3 ல் 1.33.5ஹெக்டேர் பரப்பளவில் அமைந்துள்ள சாதாரண கற்குவாரிக்கு ஆண்டுக்கு குவாரி குத்தகை வழங்குவது தொடர்பாக 07.02.2018 அன்று நடைபெற்ற பொது ஏலத்தில் தி/ள்.விக்டரி ராக்ஸ், 4/637 தாசரப்பள்ளி, தேன்கனிக்கோட்டை வட்டம், கிருஷ்ணகிரி மாவட்டம் என்பவர் அரசு நிர்ணயம் செய்த குறைந்தபட்ச குத்தகை தொகையை விட அதிக தொகையான ரூ.1,45,00,000/- (ரூபாய் ஒரு கோடியே நூற்பத்தி ஐந்து லட்சம் மட்டும்)ஐ பொது ஏலத்தில் கோரியதால் அவருக்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959ன் வதி 8(6)(b)-ன்படி அவருக்கு கீழ்க்கண்ட நிபந்தனைகளுடன் குவாரி குத்தகை வழங்க உத்தேசிக்கப்பட்டுள்ளது.

(i) குவாரி குத்தகை வழங்க உத்தேசிக்கப்பட்டுள்ள குவாரிக்கு அருகிலுள்ள மட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளியும், அரசு நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும் விட்டு குவாரிப்பணி செய்யவேண்டும்.

(ii) அருகிலுள்ள கிராம சாலைகளுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும், இதர நெடுஞ்சாலைகளுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளியும் விட்டு குவாரிப்பணி செய்யவேண்டும்.



2. எனவே, கிருஷ்ணகிரி மாவட்டம், ஓசூர் வட்டம், கோப்பளப்பள்ளி கிராமம் புல எண் 327/3 ல் 1.33.5 ஹெக்டேர் பரப்பளவில் புல வரைபடத்தில் குறிப்பிட்டுள்ள மத்தியின் குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றும் நாளிலிருந்து இத்திட்ட ஆண்டுகளுக்கு சாதாரண கற்கள் வெட்டியெடுக்க குவாரி குத்தகை வழங்குதல் தொடர்பாக தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959ன் விதி 41 மற்றும் 42 ஆகியவற்றில் கண்டுள்ள காலவரையறைக்குள் அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம், தமிழ்நாடு மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் இசைவு மற்றும் தமிழ்நாடு மாகாணப்பாட்டு வாரிய இசைவு ஆகியவற்றை சமர்ப்பிக்கவேண்டும் என தி/ள்.விக்டரி ராக்ஸ் என்பவர்களுக்கு தெரிவிக்கப்படுகிறது.

3. உரிய காலத்தில் மேற்கண்ட ஆவணங்களை சமர்ப்பிக்க தவறினால் விதிகளின்படி உரிய நடவடிக்கை எடுக்கப்படும் எனவும், தெரிவிக்கப்படுகிறது.

4. மேற்கூறிய ஆவணங்களை சமர்ப்பித்த பின்பு குவாரி குத்தகை வழங்கப்பட்டு குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றிய பின்பே மேற்கண்ட புலத்தில் குவாரிப்பணிகளை தொடங்கவேண்டும். தவறினால் தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் 1959ன் விதி 36 (அ)ன்படி உரிய நடவடிக்கை எடுக்கப்படும் எனவும் தெரிவிக்கப்படுகிறது.

5. மேலும், மேற்கண்ட குறிப்பானை மாண்புமிகு சென்னை உயர்நீதி மன்றம் ரிட் மனு எண் 2845/2018ன் மீது வழங்கும் ஆணைக்கு உட்பட்டது எனவும் தெரிவிக்கப்படுகிறது.

இணைப்பு : புல வரைபடம்.

மாவட்ட ஆட்சியர்,  
கிருஷ்ணகிரி.

பெறுதல் :

தி/ள்.விக்டரி ராக்ஸ்,  
4/637 தாசரப்பள்ளி,  
தேன்கனிக்கோட்டை வட்டம்,  
கிருஷ்ணகிரி மாவட்டம்.

பதிவகுசலில் ஒப்புரை  
அட்டையுடன்

- நகல் : 1) தலைவர், கிருஷ்ணகிரி மாவட்ட சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையம், மாவட்ட ஆட்சியர் அலுவலகம், கிருஷ்ணகிரி.  
2) ஆணையர், புவியியல் மற்றும் சுரங்கத்துறை, திரு.வி.க. தொழிற்பேர்டை, கிண்டி, சென்னை - 32.



- iv. Mined out Depth as on date Vs EC Permitted depth
- v. Details of illegal/illicit mining carried out, if any
- vi. Violation in the quarry during the past working.
- vii. Quantity of material mined out outside the mine lease area (or) in the adjacent quarry/land.
- viii. Existing condition of Safety zone/benches
- ix. Details of any penalties levied on the PP for any violation in the quarry operation

3. The Project Proponent shall furnish the revised EMP for remaining life of the mine in the format prescribed by the SEAC.
4. Photographs of greenbelt, fencing and details of mitigation measures completed/proposed in regard to reduce the impact of mining on the environmental setting.
5. 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.

On receipt of the same, further deliberations will be done.

Hence, the Proponent is advised to submit the additional documents/information as sought above within the period of 30 days failing which your proposal will automatically get delisted from the PARIVRESH portal.

Agenda No: 392-13

(File No: 10058/2023)

Proposed Rough Stone Quarry over an extent of 1.33.5Ha at S.F. No: 327/3 of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu by M/s. Victory Rocks-For Terms of Reference. (SIA/TN/MIN/430765/2023, Dated:25/05/2023).

  
MEMBER SECRETARY  
SEAC -TN

  
CHAIRMAN  
SEAC- TN



The proposal was placed in this 392<sup>nd</sup> Meeting of SEAC held on 14.07.2023. The details of the project furnished by the proponent are available in the website (parivesh.nic.in).

The SEAC noted the following:

1. The Project Proponent, M/s. Victory Rocks has applied for Terms of Reference for the Proposed Rough Stone Quarry over an extent of 1.33.5Ha at S.F. No: 327/3 of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu.
2. The proposed quarry/activity is covered under Category "BI" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. As per the mining plan the lease period is 10 years. The mining plan is for the period of five years & production should not exceed 280511 m<sup>3</sup> of Rough Stone with ultimate depth of mining 50m (22m AGL +28m BGL).
4. Earlier, the PP has obtained EC from District Level Environmental Impact Assessment Authority, Krishnagiri vide Lr.No.03/DEIAA-KGI/EC.No.89/2018 dated:27.08.2018 for the quantity of 280511 cu.m of Rough Stone upto a depth of 50m. This EC issued by the DEIAA has been filed before the SEIAA-TN for reappraisal in compliance to the order of the Hon'ble NGT in O.A142 of 2022 as per the Guidelines stipulated in MoEF &CC OM F.No. IA3-22/11/2023-IA.III (E-208230), dated. 28.04.2023.
5. It is an Existing quarry lease area. The lease deed was executed on 23.03.2020 and lease period is upto 22.03.2030.
6. The PP has furnished last permit details and transported quantity upto 30.01.2023 is 74,640 cu.m of Rough Stone.
7. It has been observed that the bench geometry of bench height of 7 m with bench width of 5 m is provided in the approved Mining Plan which is not in consistent with the legal requirements of the MMR 1961 and further, the PP has not obtained the permission for the relaxation of the bench dimensions from the Director of Mines Safety, Chennai Region.

Based on the presentation made by the proponent, SEAC decided to recommend for grant of Terms of Reference (TOR) with Public Hearing, subject to the following specific TOR conditions, in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC and additional ToR

  
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conditions given in ANNEXURE-I are to be included in EIA/EMP Report:

1. As per Metalliferous Mines Regulation 1961, under Chapter XI, 106 (2) (a) *"..... the face shall be benched and the sides shall be sloped at an angle of not more than 60 degrees from the horizontal. The height of any bench shall not exceed six meters and the breadth thereof shall not be less than the height. ...."*  
Hence, the proponent shall revise the Mining Plan with bench height and width as per the Metalliferous Mines Regulation 1961 and a revised mining plan/scheme of mining approved by the concerned Assistant Director of Dept. of Geology & Mining shall be submitted with a bench geometry of not less than 6m height x 6m width.
2. For the existing quarry, the PP shall obtain a letter from the concerned AD (Mines) which include 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. Violation in the quarry during the past working.
  - vii. Quantity of material mined out outside the mine lease area (or) in the adjacent quarry/land.
  - viii. Existing condition of Safety zone/benches
2. Details of any penalties levied on the PP for any violation in the quarry operation
3. The PP shall submit Certified Compliance Report obtained from the office of the concerned DEE/TNPCB (or) IRO, MoEF & CC, Chennai and appropriate mitigating measures for the non-compliance items, if any.
4. The Project Proponent shall furnish the revised EMP for remaining life of the mine in the format prescribed by the SEAC.
5. 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

  
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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.

**Agenda No: 392-14**

**(File No: 10065/2023)**

**Proposed Rough Stone and Gravel Quarry over an extent of 1.28.50 Ha at S.F. No: 150/2C, 150/2D & 150/2F of Olagalampoondi Village, Vikravandi Taluk, Villupuram District, Tamil Nadu by Tmt. V. Sasikala -For Environmental Clearance. (SI/VTN/MIN/428652/2023, Dated:23.05.2023).**

The proposal was placed in this 392<sup>nd</sup> Meeting of SEAC held on 14.07.2023. The details of the project furnished by the proponent are available in the website (parivesh.nic.in).

**The SEAC noted the following:**

1. The Project Proponent, Tmt. V. Sasikala has applied for Environmental Clearance for the Proposed Rough Stone and Gravel Quarry over an extent of 1.28.50 Ha at S.F. No: 150/2C, 150/2D & 150/2F of Olagalampoondi Village, Vikravandi Taluk, Villupuram District, Tamil Nadu.
2. The proposed quarry/activity is covered under Category "B2" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. As per the mining plan the lease period is 10 years. The mining plan is for the period of Five years & production should not exceed 73259 m<sup>3</sup> of Rough Stone & 17396 m<sup>3</sup> of Gravel with an ultimate depth of mining 15m BGL.

Based on the presentation and documents furnished by the project proponent, SEAC decided to obtain following details from the PP.

1. During the presentation, SEAC noted that from the KML file uploaded by the proponent in PARIVESH portal, it is construed that the proposed site has been quarried up to a depth of 2m to 3m. Further, the precise area communication letter and mine plan approval letter have not mentioned about the quarrying activity carried out. Hence, the PP shall furnish the details regarding the existing pits operated earlier which shall be duly certified by the concerned AD (Mines).
2. A letter from AD mines reporting the current environmental conditions of the

  
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			<p>1. The project proponent shall prepare a closure plan considering quantity of Topsoil &amp; Weathered rock. If any.</p> <p>2. 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.</p>
12.	Proposed Rough Stone Quarry over an extent of 3.00.0Ha (Government Poramboke Land) SF.No.652 (Part) of Mallapadi Village, Bargur Taluk, Krishnagiri District by Thiru. S. Janarthanan - For Environmental Clearance.	10078	<p>The authority noted that the subject was appraised in 392<sup>nd</sup> meeting of SEAC held on 14.07.2023 and SEAC directed the PP to provide the additional particulars as stated therein. On receipt of the same, further deliberations will be done.</p> <p>In view of the above, the authority decided to request the Member Secretary, SEIAA to communicate the SEAC minutes to the project proponent held on 14.07.2023.</p> <p>Hence, the proponent is advice to submit the additional documents / information as sought above within a period of 30 days failing which your proposal will automatically delisted from the PARIVESH portal.</p>
13.	Proposed Rough Stone Quarry over an extent of 1.33.5Ha at S.F. No: 327/3 of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu by M/s. Victory Rocks-For Terms of Reference.	10058	<p>The Authority noted that the subject was appraised in the 392<sup>nd</sup> Meeting of SEAC held on 14.07.2023. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant <b>Terms of Reference (ToR) along with Public Hearing</b> under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC &amp; normal conditions and</p>

  
MEMBER SECRETARY

  
MEMBER

  
CHAIRMAN  
SEIAA-TN



			conditions in Annexure 'B' of this minutes. In addition to the following conditions.
14.	Proposed Rough Stone and Gravel Quarry over an extent of 1.28.50 Ha at S.F. No: 150/2C, 150/2D & 150/2F of Olagalampoondi Village, Vikravandi Taluk, Villupuram District, Tamil Nadu by Tmt. V. Sasikala -For Environmental Clearance.	10065	<p>The Authority noted that the subject was appraised in the 392<sup>nd</sup> Meeting of SEAC held on 14.07.2023. Based on the presentation and documents furnished by the project proponent, SEAC decided to obtain following details from the PP.</p> <ol style="list-style-type: none"> <li>1. During the presentation, SEAC noted that from the KML file uploaded by the proponent in PARIVESH portal, it is construed that the proposed site has been quarried up to a depth of 2m to 3m. Further, the precise area communication letter and mine plan approval letter have not mentioned about the quarrying activity carried out. Hence, the PP shall furnish the details regarding the existing pits operated earlier which shall be duly certified by the concerned AD (Mines).</li> <li>2. A letter from AD mines reporting the current environmental conditions of the project site and details/status/work carried out during earlier period. AD mines shall also clarify whether the proposal comes under violation category or not.</li> <li>3. The Project Proponent shall submit the revised mining plan duly approved by the concerned AD (Mines), incorporating the 'Production &amp; Development Plan' by drawing the plan and sections legitimately fulfilling the provisions of Reg. 60 of MMR 1961.</li> </ol>

MEMBER SECRETARY

MEMBER

CHAIRMAN  
SEIAA-TN



THIRU C.KATHIRAVAN, I.A.S.,  
CHAIRMAN/  
DISTRICT COLLECTOR.

Krishnagiri District  
Environment Impact  
Assessment Authority  
Room No.30,  
Collectorate,  
Krishnagiri.



**ENVIRONMENTAL CLEARANCE**

Lr.No.03/DEIAA-KGI/EC No.89/2018 dated: 27.08.2018

To

M/s.VICTORY ROCKS,  
Prop. Nallathambi,  
No.4/637,  
DASARAPALLI (VILL & POST),  
DENKANIKOTTAI TALUK,  
Krishnagiri District  
Sir,

Sub: DEIAA - Application for Environment Clearance for the Proposed quarrying and transportation of 280511 cbm of Rough Stone generated from the quarry over an extent of 1.33.5 Hects in Government land S.F.No.327/3 of Gopanapalli village of Hosur Taluk Krishnagiri District preferred by M/s.VICTORY ROCKS, Prop.Nallathambi, No.4/637, DASARAPALLI VILLAGE, DENKANIKOTTAI TALUK, Krishnagiri District - Issue of Environmental Clearance - Reg.

- Ref: 1. M/s.VICTORY ROCKS Application for Environment Clearance dated 10.05.2018  
2. Minutes of the DEAC meeting conducted on 25.08.2018  
3. Minutes of the DEIAA meeting held on 27.08.2018

-oOo-

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 mineral rough stone based on the particulars furnished in your application as shown below:

1.	Name of Project Proponent and address	M/s.VICTORY ROCKS, Prop. Nallathambi, No.4/637, DASARAPALLI (VILL & POST), DENKANIKOTTAI TALUK, Krishnagiri District
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2.	Location of the Proposed Activity		
	Survey Number and Extent		327/3 Extent : 1.33.5 hec
	Latitude and Longitude		12° 38' 34.51" N to 12° 38' 40.74" N 77° 48' 51.49" E to 77° 48' 55.56" E
	Topo Sheet No.		57 H / 14
	Village		Gopanapalli
	Taluk		Hosur
	District		Krishnagiri District
3.	Proposed Activity		
	i.	Minor mineral	Rough Stone
	ii.	Mining Lease Area	1.33.5 Hects.
	iii.	Approved quantity	280511 cbm of Rough Stone
	iv.	Depth of Mining	50 mts (including topsoil and burden) from a period of 5 years
	v.	Type of mining	open cast shallow mining method
	vi.	Category (B1/B2)	B2
	vii.	Precise Communication Area	The District Collector Roc.No.178/2018/Mines dated:09.03.2018
	viii.	Mining Plan approval	Mining Plan approved by the Deputy Director of Geology of Mining Krishnagiri Lr.No.178/2018/Mines dated: 23.05.2018
	ix.	Mining lease period	10 years Environment Clearance for 5 years
4.	Whether Project area attracts any general conditions specified in the EIA notification, 2006 as amended:-		Not attracted Affidavit furnished
5.	Man Power requirement per day		18 Employees
6.	Utilities		
	i.	Source of Water	a. For Drinking and Domestic purpose water will be purchased from approved water vendors. b. For dust suppression and green belt development water from the existing bore hole situated near by the quarry area will be used.



ii.	Quantity of Water Requirement in KLD:	
a.	Domestic & Drinking	0.750 litre
b.	Industrial	
c.	Green Belt & Dust Suppression	1.600 kilo litre
iii.	Power requirement	
a.	Domestic purpose	TNEB
b.	Industrial purpose	Fuels is used for operating machineries and vehicles during the quarrying process and transportation and the fuel required for the entire project life is 226472 Lts. of HSD.
7.	Cost	
i.	Project Cost	Rs.1,67,60,000/-
ii.	EMP Cost	Rs.3,70,000/-
8.	Public Consultation:-	Not required as per O.M. dated 24.12.2013 of MoEF, GOI
9.	Date of Appraisal by DEAC: Agenda No.	Agenda No.29 of 3 <sup>rd</sup> meeting of DEAC conducted on 25.08.2018
10.	Date of review / discussion by DEIAA and the Remarks:- The proposal was placed before the DEIAA in its 3 <sup>rd</sup> meeting on 27.08.2018 as agenda No.29 and the authority after careful consideration, decided to grant Environmental Clearance to the said project of quarrying of rough stone subject to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.	
11.	Validity: This Environmental Clearance is granted to quarry of Rough Stone for the production quantity of 280511 Cbm of rough stone for the period of five years from the date of execution of the quarrying lease period.	
12.	NBWL Clearance: The proposal area is situated 13.77 km away from The Cauvery north Wild Life Sanctuary and it does not Attract NBWL clearance.	
13.	Special Condition: i) Ground Water Quality test should be conducted periodically. ii) Water Sprinkling arrangement shall be maintained as proposed. iii) Environment Management plan should be submitted before the grant of permission.	



**Conditions to be Compiled before / during commencing 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 State Level Environment Impact Assessment Authority.
  - 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 DEIAA.
- (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 7 AM 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 maintained 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.

(15). The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.

(16). Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.

(17). Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.

(18). The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.

(19). Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.

(20). A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.

(21). The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009. (GLC = Ground Level Concentration), (NAAQ = Noise and Ambient Air Quality)

(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 Assistant Director, Ground Water Division, PWD, Dharmapuri.
- (26) Rain water harvesting to collect and utilize the entire water falling in land area should be provided by construction of a storage tank with a capacity of 5,00,000 litres and the rain water harvested in the entire quarry area should be stored in it and used for the quarry purpose like dust prevention, wet drilling, providing water for green belt etc.
- (27). Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
- (28). Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
- (29). 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.
- (30). 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.
- (31). 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.
- (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. **Photographs of the silt trap should be furnished before commencing quarry operation.**

(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, that the ground water is getting depleted due to the quarrying activity, necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Dharmapuri shall monitor.**

(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 **and it should be monitored by the District Environmental Engineer, TNPCB, Hosur on yearly basis.**

(36). It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.

(37). It shall be ensured that there is no habitation is located within 500 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site

(38). Ground water quality monitoring should be conducted once in 3 Months.

(39). Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.

(40). Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI **once in three months.**

(41). Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI **periodically once in six months.**

(42). Bunds should be provided at the boundary of the project site **and it should be properly maintained.**



(43). The project proponent shall undertake plantation/ afforestation 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.

(44). At least 10 Neem trees should be planted around the boundary of the quarry site.

(45). Floor of excavated pit to be leveled and sides to be sloped with gentle slope (Except for granite 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 obtaining 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 50 m has to be provided in case of railway, reservoir, canal/odai

(55) The Assistant / Deputy Director Department of Geology and 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 depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.

(58) The proponent shall furnish the data obtained from the Public Works Department regarding the details of ground water table in the quarry site.

(59) The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh case before execution of mining lease.

(60) The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to the existing activity before execution of mining.

(61) Heavy earth machinery equipments if utilized, after getting approval from the competent authority.

(62) The environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur.

(63) The Assistant Director Public Works Department, Ground Water Division Dharmapuri shall monitor whether the quarrying activity is carried out above the ground water level on yearly basis.

(64) NOC for sanitary certificate shall be obtained from the Deputy Director of Health Services, Krishnagiri.

(65) Yearly medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Krishnagiri.

(66) Closed circuit camera should be erected at the quarry site and the passage of vehicles in and out of the quarry should be recorded and the footage of the recordings of the camera should be maintained and should be produced before the enforcing officials when ever called for.

(67) Vehicles used for transportation of quarried materials should be fitted with GPS and monitored.

(68) Pit Mouth register should be maintained in online

(69) Auditor report on the annual turnover amount should be submitted to the District Collector within one month from the end of the financial year.

(70) 02.5% of the turn over amount should be utilized for the CSR activity after consultation with the District Collector.



**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.
- (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 DEIAA, 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 them mineral shall not be overloaded.
- (10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
- (11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.



(12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.

(13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.

(14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.

(15) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its regional office located at Chennai.

(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 DEIAA, Krishnagiri may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.

(19) The DEIAA, Krishnagiri 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 DEIAA.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 Court of Law relating to the subject matter.

(22) Quarrying recommended for proposed depth. Further deepening and continuous seepage if any to be informed to the concerned department. Ground water quality test to be done periodically.

(23) Green belt should be established while starting mining process.

(24) Any other conditions stipulated by other Statutory/ Government authorities shall be complied.

(25) 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.

Sd/-C.Kathiravan  
CHAIRMAN DEIAA-KGI/  
DISTRICT COLLECTOR,  
KRISHNAGIRI.

//True Copy//By Order//

For CHAIRMAN DEIAA-KGI/  
DISTRICT COLLECTOR,  
KRISHNAGIRI.

Copy to

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi
2. The Principal Secretary, Environment and Forest Department, Government of Tamil Nadu, Tamil Nadu.
3. The Principal Secretary to Government, Industries Department, Government of Tamil Nadu, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 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 Member Secretary, State Level Environmental Impact Assessment Authority Tamil Nadu Panagal Building Saidapet, Chennai
7. The Chairman Tamil Nadu Pollution Control Board, 76.Mount Salai (Guindy, Chennai-32)
8. The Commissioner of Geology and Mining, Guindy, Chennai-32
9. E1 Division, Ministry of Environment and Forests Paryavaran Bhawan, New Delhi.
10. File No.60/ DEIAA/KGI/2018.



Category of the Industry :

RED

CONSENT ORDER NO. 2308250886272

DATED: 09/03/2023.

PROCEEDINGS NO.F.1910HSR/RS/DEE/TNPCB/HSR/A/2023

DATED: 09/03/2023

**SUB:** Tamil Nadu Pollution Control Board - RENEWAL OF CONSENT -M/s. VICTORY ROCKS ROUGH STONE QUARRY , S.F.No. 327/3, GOBANAPALLI village, Hosur Taluk and Krishnagiri District - Renewal of Consent for the operation of the plant and discharge of emissions under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) -Issued- Reg.

**REF:** 1. CTO Proc. No. F.1910HSR/RS/DEE/TNPCB/HSR/W&A/2019 Dated 31/01/2019.  
2. Unit's application for Renewal of consent Id No: 50886272 Dated 08/06/2022.  
3. IR.No : F.1910HSR/RS/AE/HSR/2023 dated 09/03/2023.

RENEWAL OF CONSENT is hereby granted under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Partner

M/s.VICTORY ROCKS ROUGH STONE QUARRY,  
S.F.No. 327/3,  
GOBANAPALLI village,  
Hosur Taluk,  
Krishnagiri District.

Authorizing the occupier to operate the industrial plant in the Air Pollution Control Area as notified by the Government and to make discharge of emission from the stacks/chimneys.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

**This RENEWAL OF CONSENT is valid for the period ending March 22, 2025**

District Environmental Engineer,  
Tamil Nadu Pollution Control Board,  
HOSUR



### SPECIAL CONDITIONS

1. This renewal of consent is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
<b>Product Details</b>			
1.	Rough Stone Quarrying in an Extent of 1.33.5 Hects located at S.F.No.327/3,Gopanapalli Village, Hosur Taluk Krishnagiri District	280511	Cubicmeter/Five Years

2. This renewal of consent is valid for operating the facility with the below mentioned emission/noise sources along with the control measures and/or stack. Any change in the emission source/control measures/change in stack height has to be brought to the notice of the Board and fresh consent/Amendment has to be obtained.

<b>I Point source emission with stack :</b>				
Stack No.	Point Emission Source	Air pollution Control measures	Stack height from Ground Level in m	Gaseous Discharge in Nm <sup>3</sup> /hr
<b>II Fugitive/Noise emission :</b>				
Sl. No.	Fugitive or Noise Emission sources	Type of emission	Control measures	
1.	Mining Area	Fugitive	Water sprinkler system	
2.	Vehicle Movement	Fugitive	Water sprinkler system	





**Special Additional Conditions:**

- i. The unit shall install the approved retrofit emission control device/equipment with at least 70% Particulate matter reduction efficiency on all DG sets with capacity of 125 KVA and above or otherwise the unit shall be shift to gas based generators within the time frame prescribed in the notification No. TNPCB/Labs/DD(L)02151/2019 dated 10.06.2020 issued by TNPCB.
- ii. The unit shall obtain No Objection Certificate (NOC) from the Tamil Nadu Bio Diversity Board /National Bio Diversity Authority if the unit is using any Biological resources or knowledge associated thereto as per the provisions of Biological Diversity Act 2002.

**Additional Conditions:**

1. The unit shall carryout the quarrying activity only with the quarry lease agreement made with the District collector, Krishnagiri.
2. The unit shall comply all the conditions prescribed in the Environmental Clearance issued by the Lr No. 03/DEIAA-KGI/EC.No.89/2018, Dated 27.08.2018.
3. The unit shall comply with the conditions imposed in the Mining Lease Agreement entered with the District Collector, Krishnagiri dated on 23.03.2020.
4. The unit shall operate and maintain the APC measures in the form of portable water sprinklers effectively and continuously so as to satisfy the NAAQ / Emission standards prescribed by the Board.
5. The unit shall adhere to the ANL standards as prescribed by the Board.
6. The unit shall continue to develop more green belt with trees having thick canopy cover in the unit's premises.
7. The unit's operation/ activity for the mining shall not disturb the nearby agricultural land if any at any circumstances.
8. The unit shall take necessary precautionary measures to prevent any adverse impact on the nearby habitation.
9. The consent issued is subject to the final outcome of National Green Tribunal (South Zone) in application No. 165/2013.
10. In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification, failing which this order will be withdrawn without any notice and further action will be initiated against the unit as per law.

**District Environmental Engineer,  
Tamil Nadu Pollution Control Board,  
HOSUR**

To  
The Partner,  
M/s.VICTORY ROCKS ROUGH STONE QUARRY,  
NO.4/637, Dasarapalli Village, Denkanikottai Taluk, Krishnagiri District.,  
Pin: 635114

**Copy to:**

- 1.The Commissioner, HOSUR-Panchayat Union, Hosur Taluk, Krishnagiri District .
2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.
3. The District Environmental Engineer, Tamil Nadu Pollution Control Board, HOSUR for favour of kind information.
4. File



Category of the Industry :

RED

CONSENT ORDER NO. 2308150886272 DATED: 09/03/2023.

PROCEEDINGS NO.F.1910HSR/RS/DEE/TNPCB/HSR/W/2023 DATED: 09/03/2023

**SUB:** Tamil Nadu Pollution Control Board - RENEWAL OF CONSENT – M/s. VICTORY ROCKS ROUGH STONE QUARRY , S.F.No. 327/3, GOBANAPALLI village, Hosur Taluk and Krishnagiri District - Renewal of Consent for the operation of the plant and discharge of sewage and/or trade effluent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) – Issued- Reg.

**REF:** 1. CTO Proc. No. F.1910HSR/RS/DEE/TNPCB/HSR/W&A/2019 Dated 31/01/2019.  
2. Unit's application for Renewal of consent Id No: 50886272 Dated 08/06/2022.  
3. IR.No : F.1910HSR/RS/AE/HSR/2023 dated 09/03/2023.

RENEWAL OF CONSENT is hereby granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act, 6 of 1974) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Partner  
M/s.VICTORY ROCKS ROUGH STONE QUARRY,  
S.F.No. 327/3,  
GOBANAPALLI Village ,  
Hosur Taluk ,  
Krishnagiri District .

Authorising the occupier to make discharge of sewage and /or trade effluent.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This RENEWAL OF CONSENT is valid for the period ending March 22, 2025

District Environmental Engineer,  
Tamil Nadu Pollution Control Board,  
HOSUR





### SPECIAL CONDITIONS

1. This renewal of consent is valid for operating the facility for the manufacture of products/byproducts (Col. 2) at the rate (Col 3) mentioned below. Any change in the product/byproduct and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
<b>Product Details</b>			
1.	Rough Stone Quarrying in an Extent of 1.33.5 Hects located at S.F.No.327/3,Gopanapalli Village, Hosur Taluk Krishnagiri District	280511	Cubicmeter/Five Years

2. This renewal of consent is valid for operating the facility with the below mentioned outlets for the discharge of sewage/trade effluent. Any change in the outlets and the quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Outlet No.	Description of Outlet	Maximum daily discharge in KLD	Point of disposal
<b>Effluent Type : Sewage</b>			
1.	Sewage	0.65	On Industrys own land
<b>Effluent Type : Trade Effluent</b>			



**Special Additional Conditions:**

The unit shall obtain No Objection Certificate (NOC) from the Tamil Nadu Bio Diversity Board /National Bio Diversity Authority if the unit is using any Biological resources or knowledge associated thereto as per the provisions of Biological Diversity Act 2002.

**Additional Conditions:**

1. The unit shall carryout the quarrying activity only with the quarry lease agreement made with the District collector, Krishnagiri.
2. The unit shall comply all the conditions prescribed in the Environmental Clearance issued by the Lr No. 03/DEIAA-KGI/EC.No.89/2018, Dated 27.08.2018.
3. The unit shall comply with the conditions imposed in the Mining Lease Agreement entered with the District Collector, Krishnagiri dated on 23.03.2020.
4. The unit shall treat and dispose the sewage generated from the unit through Septic tank and Dispersion trench arrangement.
5. The unit shall ensure that no trade effluent is generated at any stage of its manufacturing process.
6. The unit's operation/ activity for the mining shall not disturb the nearby agricultural land if any at any circumstances.
7. The unit shall take necessary precautionary measures to prevent any adverse impact on the nearby habitation.
8. The consent issued is subject to the final outcome of National Green Tribunal (South Zone) in application No. 165/2013.
9. In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification, failing which this order will be withdrawn without any notice and further action will be initiated against the unit as per law.
10. The unit shall not use 'Use and throwaway plastics' such as plastic sheets used for food wrapping, spreading on dining table etc, plastic plates, plastic coated tea cups, plastic tumbler, water pouches and packets, plastic straw, plastic carry bag and plastics flags irrespective of thickness, within the industry premises. Instead unit shall encourage use of eco friendly alternative such as banana leaf, arecanut palm plate, stainless steel, glass, porcelain plates/cups, cloth bag, jute bag etc.,
11. In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification, failing which this order will be withdrawn without any notice and further action will be initiated against the unit as per law.

**District Environmental Engineer,  
Tamil Nadu Pollution Control Board,  
HOSUR**

To

The Partner,

M/s.VICTORY ROCKS ROUGH STONE QUARRY,

NO.4/637,Dasarapalli Village, Denkanikottai Taluk, Krishnagiri District.,

Pin: 635114

**Copy to:**

- 1.The Commissioner, HOSUR-Panchayat Union, Hosur Taluk, Krishnagiri District .
2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.
3. The District Environmental Engineer, Tamil Nadu Pollution Control Board, HOSUR for favour of kind information.
4. File

5358/2020



தமிழ்நாடு தமில்நாடு TAMILNADU

Rs: 500/-

11/11/19

Victory Rocks

Dhasarapalli

AN 424637

Parimala

N.B. PARIMALA,  
Stamp Vender  
L.No. 5/2008, KGI, HO5URT.N

**LEASE DEED FOR QUARRYING AND CARRYING AWAY MINOR  
MINERALS BY PRIVATE PERSONS  
(APPENDIX - I)**

(See Rule 8 of Tamil Nadu Minor Mineral Concession Rules 1959  
and Krishnagiri District Collector's Proc. No. 178/2018 (Mines-1)  
dated 23.03.2020.

THIS INDENTURE MADE THIS 23<sup>rd</sup> day of March-2020 between the Governor of Tamil Nadu (hereinafter referred to as "the Lessor" which expression shall, where the context so admits include his successors in office and assigns) on the one part, and Tvl. Victory Rocks, 4/637, Dhasarapalli, Denkanikottai Taluk, Krishnagiri District represented by its Authorised signatory /partners 1) Thiru S. Nallathambi, S/o Sabastein, 2) Thiru S.Raja S/o Sidhappa, 3) Thiru R. Kumarakurubaran S/o C.Rajendiran (hereinafter called "the lessee" which expression shall where the context so admits include his heirs, executors, administrators, legal representatives and assigns) of the other part.

S. Nallathambi

S. Raja  
S. Sidhappa  
LESSEE

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Contains 28 Sheets.....1.....Sheet.

Registering Officer  
Kelamangalam

DISTRICT COLLECTOR





தமிழ்நாடு தமில்நாடு TAMILNADU

Rs. 500/-

Victory Rocks

Dasarapalli

AN 424638

Parimala

N.B. PARIMALA,  
Stamp Vendor  
L No. 5/2008, KGI, MOSUR, TN

WHEREAS the lessee has been the successful bidder in a sealed tender cum public auction conducted by the Government of Tamil Nadu (hereinafter referred as "the Government") for the lease of land in Krishnagiri district for the purpose of quarrying rough stone, jelly and sized stone and has deposited with the Collector of Krishnagiri a sum of Rs. 9,50,000/- (Rupees Nine lakhs and fifty thousand only) remitted Chalan No. Nil State Bank of India, Krishnagiri dated 6.11.2019 as security for the due and faithful performance by the lessee of the covenants and conditions on the part of the lessee hereinafter contained.

AND WHEREAS the lessor has agreed to grant the lessee, a lease of the lands and premises hereinafter described, as per Tamil Nadu Minor Mineral Concession Rules, 1959 (herein after called "The Rules").

*S. Nataraj*

*S. Raju*

*S. Sankar*

LESSEE

Document No. 5356 of 2020 of Book.....  
Contains..... 28 Sheets..... 2 Sheet.

Registering Officer  
Kelamangalam

DISTRICT COLLECTOR







AND WHEREAS the lessee had paid to the credit of the Government a sum of Rs. 47,50,000/- (Rupees fourty seven lakhs and fifty thousand only) as one month's advance amount for Ten years of lease.

NOW THESE PRESENTS WITNESS AS FOLLOWS:-

1. The lessor hereby demises to the lessee all those several pieces or parcels of land situate in the village of Gopanapalli in the Sub. Registrar of Kelamangalam in the State of Tamil Nadu being more particularly described in the Schedule hereunder written and delineated in the map or plan hereunto annexed and there in coloured.

2. There are included in the said demise and for the purposes thereof the liberties following:-

(1) To get rough stone, jelly and sized stones from the said demised pieces of land.

(2) For the purpose aforesaid to use any water in or under the said demised pieces of land and to divert the same and to make or construct any water courses or ponds so, however, that nothing shall be done in the exercise of this authority which shall interfere with the rights of any adjoining owners or tenants of the lessor in respect of such water.

(3) Generally to do all things which shall be convenient or necessary for getting the rough stone, jelly etc. hereby authorised to be got and for removing and disposing thereof as aforesaid.

3. There are excepted from and reserved to the lessor out of this demise:-

(1) All earth, minerals and other substances not hereinbefore expressly authorised to be got from the demised lands by the lessee.

(2) Liberty for the lessor or other persons authorised by them to search for, work, get, carry away and dispose of the excepted minerals and other substances and for such purposes to have the right of ingress, egress and regress over the said demised pieces of land and to make, erect and use all pits, machinery, buildings, roads and other necessary works and conveniences provided that the rights hereby reserved shall be exercised in such a way as to cause as little obstruction as possible to the lessee in the use and enjoyment of his rights hereunder and that reasonable compensation for damages caused by any such obstruction shall be paid to the lessee the amount thereof and in case of difference to be settled by arbitration as hereinafter provided.

4. The said premises shall be held by the lessee for the term of **TEN YEARS** from the 23<sup>rd</sup> day of March-2020 to the 22<sup>nd</sup> day of March-2030 which shall however be determinable as hereinafter provided.

5. The lessee shall pay during the said term the area assessment the cess and seigniorage fee or dead rent which ever is greater, for the minerals removed or consumed at the rates prescribed from time to time in appendix II of the rules.

S. Natarajan

S. Natarajan





(1) The said seigniorage fee as prescribed in appendix II shall be paid before the same is removed from the demised pieces of land. The mode of payment of the same shall be indicated by the District Collector from time to time.

(2) The lessee hereby covenants that any fee, cess, rent, rates or any other sum due to the Government if not paid within the stipulated period will pay with interest as envisaged in the rules.

6. The lessee hereby covenants with the lessor as follows:-

(1) To pay the assessment, cess and seigniorage fee or dead rent which ever is greater and other amounts due to the Government, on the days and in the manner aforesaid.

(2) To bear, pay and discharge all existing and future rates, taxes, assessment, duties, impositions, outgoings and burdens whatsoever imposed or charged upon the demised premises or the produce thereof or the land assessment, the cess and the seigniorage fee or dead rent hereby reserved or upon the owner or occupier in respect thereof or payable by either in respect thereof except such charges or impositions as the lessee is or may hereby be by law exempted from.

(3) Before digging or opening any part of the said demised pieces of land for **rough stone, jelly etc.** carefully remove the surface soil and lay aside and store the same in some convenient part of the said demised piece of land until the land from which it has been removed is again restored to a state, fit for cultivation as hereinafter provided.

(4) To effectually fence off the same demised pieces of land from the adjoining lands and to keep the fences in good repairs and -condition.

(5) Not to assign, underlet or part with the possession of the demised premises or any part thereof without the written consent of the lessor first obtained.

(6) After working out any part of the said demised pieces of land forthwith to level the same and replace the surface soil thereof and slope the edges where necessary so as to afford convenient connection with the adjoining land.

(7) That the lessee shall keep correct accounts in such form as the Collector shall from time to time require and direct showing the quantities and other particulars of the mineral obtained by the lessee from the said lands and also the number of persons employed in carrying on the said quarrying operations therein and shall from time to time when so directed by the Collector prepare and maintain complete and correct plans of all mines and workings in the said lands and shall allow any officer thereunto authorized by the Government from time to time and at any time, to examine such accounts and any such plans and shall when so required supply and furnish to the Government all such information and returns regarding all or any of the matters aforesaid, the Government shall from time to time require and direct.

C. Narayana  
S. Ravi

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(8) That the lessor's agents, servants and workmen shall be at reasonable times during the said term to inspect and examine the works carried on by the lessee under the liberties herein before granted and the lessee shall and will from time to time and at all times during the said term hereby granted confirm to and observe all orders and regulations which the lessor or his authorised agents as the result of such inspection may from time to time see fit to impose to keep the premises in good and substantial repair, order and condition or in the interest of public health and safety.

(9) That the lessee shall not without the express sanction in writing of the Collector cut down or injure any timber or trees on the said lands but he may clear away brush wood or undergrowth which interferes with any operations authorized by these presents.

(10) That if the lands shall be used for any purpose other than quarrying for **rough stone, jelly etc.** or if they are not under or at any time cease to be used for the said purpose the lessor shall be at liberty to terminate the lease without notice.

(11) That this lease may be terminated in respect of the whole or any part of the premises by six months notice in writing on either side.

(12) That on such determination the lessee shall have no right to compensation of any kind.

(13) That the land assessment, cess and seigniorage, rents or other amounts payable under these presents, shall be recoverable under the provisions of Tamil Nadu Revenue Recovery Act 1864 (Tamil Nadu Act II of 1864) or any subsisting statutory modification thereof.

(14) At the determination of the lease to deliver up the demised premises in such condition as shall be in accordance with the provisions of these presents save that the lessee shall, if so required by the lessor, restore in manner provided by the foregoing covenant in that behalf the surface of any part of the land which has been occupied by the lessee for the purpose of the works hereby authorized and has not been so restored.

(15) That the lessee shall abide by the conditions laid down in the payment of Wages Act 1936, the Mines Act 1952 (Central Act XXXV of 1952) and the Indian Explosives Act, 1884 (Central Act IV of 1884). Mettalliferous Mines Regulations, 1961, Mines and Minerals (Development and Regulation) Act, 1957 and rules made there under.

(16) The lessee shall comply with the provision of labour laws applicable to quarries and any contravention of the provisions shall attract legal proceedings of the appropriate Government.

S. Valath  
S. Raji  
K. R. S. N. G. R. I.  
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DISTRICT COLLECTOR





(17) After signing this agreement and in the sketch of FMB, the lessee has the rights to question about the measurement of the area leased out, lease conditions and other related matters.

(18) On any account neither the lease period can be extended nor renewed for a further period.

(19) (a) On execution of these presents, the lessee has to take possession of the leasehold area immediately by giving proper acknowledgement.

(b) On the date of expiry of the lease period, the lessee shall hand over the leased out area to the Village Administrative Officer concerned through an affidavit, and the acknowledgement obtained from the Village Administrative Officer for having done so shall be handed over to the Taluk Tahsildar concerned under intimation to the concerned Revenue Divisional Officer and the District Collector.

(20) The lessee hereby covenants to get the lease agreement registered at his expenses under clause (d) of sub section (1) of section 17 of Registration Act 1908.

(21) The lessee shall remove, or allow removal and transportation of the mineral prescribed from the area where quarrying is permitted only after obtaining bulk transport permit and authenticated despatch slips in the forms prescribed in Appendices XII and XIII to these rules, from the Deputy Director (Geology and Mining) Krishnagiri. The lessee or his men shall issue the fascimiled despatch slips to the vehicles used for removal or transportation of the mineral furnishing all the particulars in the despatch slips specifically indicating the vehicle number, the quantity of the mineral allowed to be transported by the vehicle by using that despatch slip and the date and time of issue of the despatch slip to the vehicle. All the vehicles used for transporting minor mineral from the leased out area shall accompany with the individual despatch slips for the quantity of the minerals available in the vehicle at all the times of transportation of the mineral by the vehicles and produce them for check and verification by the competent authorities.

(22) Any violation of the above condition will lead to penal action under Tamil Nadu Minor Mineral Concession Rules 1959 read with Mines and Minerals (Development and Regulation ) Act 1957 (hereinafter called the Act).

(23) (a) Only rough stone, jelly and sized stone must be quarried and the lessee should not quarry big granite blocks or ornamental stone of export worthy blocks to be used for cutting and polishing.

(b) If it is found that the lessee is producing granite blocks for cutting and polishing and for export, the lease granted in these presents will be cancelled, with forfeiture of security deposit to the Government and penal action will be initiated as per Mines and Minerals (Development & Regulation ) Act 1957.

*E. Natarajan*

*S. S. S.*

*R. R. R.*





(24) The lessee has to form approach road at his own cost and the Government will not be responsible for dispute if any with or nearby Pattadars or other third parties.

(25) The lessee has to quarry according to the provisions of Mines and Minerals (Development and Regulation) Act 1957, Metalliferous Mines Regulations 1961 and the rules made thereunder.

(26) The lessee should maintain at his cost boundary pillars, proper sign board indicating the survey number and extent, period of lease, name of the lessee and maintain the sign board during the lease period.

7. The lessor hereby covenants with the lessee that the lessee paying the land assessment, the cess and the seigniorage fee hereby reserved and observing and performing the several covenants and stipulations on the part of the lessee herein contained shall peacefully hold and enjoy the premises, liberties and powers hereby demised and granted during the said term without any interruption by the lessor or any persons rightfully claiming under or in trust for him.

8. It is hereby further agreed between the parties as follows:-

(1) If any part of the land assessment, cess or seigniorage hereby reserved shall be unpaid for thirty days after becoming payable (whether formally demanded or not) or if the lessee which the demised premises or any part thereof remain vested in him, shall become insolvent or if any covenant on the lessee's part herein contained shall not be performed or observed, then and in any of the said cases it shall be lawful for the lessor at any time thereafter to declare the whole or any part of the said security deposit of Rs. 13,40,000/- to be forfeited and also to re-enter upon the demised premises or any part thereof in the name of the whole and thereupon the demise shall absolutely determine but without prejudice to the rights of action of the lessor in respect of any breach or non-observance of the lessee's covenants herein contained.

(2) At the determination of the lease, the lessee shall be at liberty to remove, carry away and dispose off all the stock of **rough stone, jelly etc** ready for delivery and all engines, machinery, and all plant, articles and things whatsoever (not being building or brick or stones), the lessee first paying any land assessment, cess and seigniorage and other sums which may be due and performing and observing the covenants on his part herein before reserved and contained and also making good any damage done by such removal but any buildings which shall be erected on the said demised pieces of lands by the lessee and left there on at the determination of lease shall be the absolute property of the lessor who shall not be bound to pay any price for

the same.  
S. Natarajan

S. Raju

S. Raju



(3) If the lessee shall have paid the land assessment, cess and seigniorage due to the Government and duly observed and performed the covenants and conditions on his part herein contained, the said deposit of Rs. 9,50,000/- (Rupees Nine lakhs and fifty thousand only) shall be returned to him at the expiration of the said term of Ten years.

(4) Should any question or dispute arise regarding this agreement executed in pursuance of these Rules or any other matter or thing connected therewith or the powers of the lessee 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 Director of Geology and Mining, Chennai. In case the lessee is not satisfied with the decision of the Director of Geology and Mining, Chennai the matter shall be referred to the State Government for decision.

9. If the lessee is in occupation of the lease-hold area after the expiry of the period for which the lease has been granted or after the determination of the lease, the lessee shall be deemed to be in unlawful possession of the said area and he shall be liable for eviction from the lease-hold area in addition to being liable to be charged at double the rate of the lease amount or bid amount as the case may be, for the period of such occupation.

10. All land assessment, cess and seigniorage payable under these presents shall be recoverable under the provisions of the Tamil Nadu Revenue Recovery Act, 1864, as if they were arrears of land revenue.

11. In the event of any breach by the lessee by any of the conditions of this agreement, it shall be lawful for the Government to levy enhanced seigniorage or for the Collector to give notice in writing to the lessee of his intention to cancel these presents whereupon the same shall stand canceled but without prejudice to any rights which the Government may have against the pattadar in respect of any antecedent claim or breach of covenant or condition.

12. The 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 Indian Explosives Act, 1884 (Central Act IV of 1884).

13. No hindrance should be caused to, the surrounding patta fields and poramboke lands.

14. The lessee should strictly adhere to the conditions and rules stipulated by the Government for Minor Minerals from time to time and he should remit seigniorage for the Minerals removed as per the rates stipulated by Government from time to time.

S. Natarajan  
S. Raji  
S. Subramanian

LESSEE

S. Subramanian

DISTRICT COLLECTOR



15. The lessee should maintain a safety zone of 7.5 metres on the boundary of the patta lands and 10 metre from the poramboke lands in and around the lease hold area.

16. The lessee should demarcate the leasehold area at his own cost and should quarry stone only within that area.

17. The lessee should not assign, underlet or sublet any part of the lease area.

18. The lessee should obtain the permit, and the despatch slips for the transport of Rough stone/Jelly, etc from the Assistant Director/Deputy Director of Geology and Mining, Krishnagiri. The despatch slips should be kept in the quarry site and be issued to all the vehicle shile transporting the stone, Jelly etc from the quarry.

19. The lessee should leave a safety distance of 50 metres from the railway line, National Highways roads, low tension and high tension and Telephone lines, transformers, temples, or historical importance etc. 10 metre from the village road and 300 metre from the approved layout and habitations.

20. The lessee should strictly adhere to the conditions stipulated in Krishnagiri District Gazette Extra Ordinary issued No. 01 dated 19.01.2018 and rules stipulated by the Government from time to time.

21. In the event of any breach of rules or the condition of lease deed or the conditions of the lease order and the Gazzette condition, the lease would become liable for automatic termination without any prior notice.

22. The lessee should adhere the terms and conditions laiddown in Krishnagiri District Collector, Proceedings Roc. No. 178/2018 (Mines-1) dated 23.03.2020.

23. The lease period starts from the 23<sup>rd</sup> day of March -2020 and ends on the 22<sup>nd</sup> day of March -2030.

24. For the purpose of caluculation of Stamp duty one time lease amount of Rs. 47,50,000/- +Anticipated total production of rough stone quantity of 561022 CBM @ Rs. 59/- as sieginorage fee of Rs. 3,31,00,298/- Security Deposit of Rs. 9,50,000/- +Area Assessment Rs. 2,003/- were taken in to account.

25) a) . The grantee should sent the notice for operating the quarry to Director of Mines safety, Bangalore.

b) Quarrying operation should carried out only after appointing Mines Manager, Mines Mate and Foremen.

c) At any cost the blasting activity should be carried out under the Supervsition of Mines Manger / Mines mate

d). If any accident occur in the quarry area the lessees should give intimation to the Director of Mines safety Bangalore and District Collector, Krishnagiri at once and lessee is solely responsible for any violation.

S. N. N. N.  
S. N. N. N.  
S. N. N. N.

S. N. N. N.



**II) சாதாரண கற்குவாரி பணி செய்வதற்கான நிபந்தனைகள்:**

- (1) குத்தகை காலம், குத்தகை ஒப்பந்தப்பத்திரம் நிறைவேற்றும் நாளிலிருந்து பத்து ஆண்டுகளாகும்.
- (2) குவாரி குத்தகை வழங்கப்பட்ட இடத்தில் குவாரி செய்யும் வேலிக்கல்/ குண்டுக்கல்/ கட்டுக்கல்/ சக்கை மற்றும் ஜல்லி ஆகியவற்றை மேற்படி இடத்திலிருந்து வெளியில் எடுத்துச் செல்வதற்கு முன்பு அவை ஒவ்வொன்றிற்கும் அவற்றிற்குரிய வீதத்தில் சீனியரேஜ் தீர்வை செலுத்தி கிருஷ்ணகிரி, பர்மிட் மற்றும் நடைச்சீட்டு பெற்ற பின்புதான் மேற்படி கனிமங்களை குவாரியிலிருந்து வெளியில் எடுத்துச் செல்ல வேண்டும். 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், இணைப்பு II-ல் அவ்வப்போது அரசால் நிர்ணயிக்கப்படும் வீதத்தில் பரப்பு தீர்வை செலுத்த வேண்டும். மேற்கண்ட தொகையைத் தவிர அரசால் அவ்வப்போது நிர்ணயிக்கப்படும் இதர தொகைகளையும் குத்தகைதாரர் செலுத்த வேண்டும்.
- (3) குத்தகை இடத்திற்கு அருகிலுள்ள குடியிருப்புகள், கட்டடங்கள், நீர்நிலைகள், குளங்களின் கரைகள், மரங்கள், சாலைகள், வண்டிப்பாதைகள், நடைபாதைகள் மற்றும் இதர பொதுச் சொத்துக்களுக்கு பாதகமில்லாமல் குவாரி செய்ய வேண்டும்.
- (4) குத்தகை வழங்கப்பட்ட இடத்திற்கு அருகாமையில் உள்ள பட்டாதாரர்கள் மற்றும் பொது மக்களுக்கு பாதகமில்லாமல் குவாரி செய்ய வேண்டும்.
- (5) அ) குத்தகை வழங்கப்பட்ட இடத்திற்கு அருகிலுள்ள ரயில்பாதைகள், சாலைகள், மின்சாரம் மற்றும் தொலைபேசி கம்பிகளுக்கு 50 மீட்டரும், குடியிருப்பு பகுதியிலிருந்து 300 மீட்டரும், நடைபாதைகள், கிராம சாலைகளுக்கு 10 மீட்டரும் பாதுகாப்பு இடைவெளி விட்டு குவாரி செய்ய வேண்டும்.  
ஆ) அருகிலுள்ள அரசு நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணி செய்ய வேண்டும்.  
இ) அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணி செய்ய வேண்டும்.
- (6) மாவட்ட ஆட்சித்தலைவர் (அல்லது) அரசால் அதிகாரம் வழங்கப்பட்ட அலுவலரை குத்தகை வழங்கப்பட்ட இடத்தைப் பார்வையிடவும், குவாரி பதிவேடுகள், ஆவணங்கள் மற்றும் கணக்கை சரிபார்க்கவும் அனுமதிக்க வேண்டும். இது சம்பந்தமாக அவர்கள் கோரும் அனைத்து விவரங்களையும் வழங்க வேண்டும்.
- (7) சுற்றுப்புற சூழ்நிலை பாதுகாப்பு, கனிம பாதுகாப்பு, தொழிலாளர் பாதுகாப்பு முதலியவற்றைக் கருத்தில் கொண்டு விஞ்ஞான அடிப்படையில் திறமையுடன் முறையாகக் குவாரி செய்ய வேண்டும்.
- (8) மாவட்ட ஆட்சித்தலைவர் மற்றும் ஆணையர், புவியியல் மற்றும் சுரங்கத்துறை, ஆகியோரால் அதிகாரம் வழங்கப்பட்ட அலுவலரை மேலே பத்தி (5)-ல் குறிப்பிட்டுள்ள நிபந்தனைகள் தொடர்பாகவும், மேற்கண்ட அலுவலர்களின் ஆணையை நிறைவேற்றவும் குத்தகை வழங்கப்பட்ட இடத்தைப் பார்வையிட அனுமதிக்க வேண்டும்.
- (9) குத்தகைதாரரின் செலவில் குத்தகை ஒப்பந்தப்பத்திரம் நிறைவேற்றி அதனை பதிவு செய்வதற்கு முன்பு குத்தகை இடத்தில் குவாரி மற்றும் இது சம்பந்தப்பட்ட வேலைகளைத் தொடங்கக்கூடாது.
- (10) குத்தகை வழங்கப்பட்டுள்ள இடத்திற்குள் எல்லையிலிருந்து 7.5 மீட்டர் தூரத்திற்குள் குவாரி செய்யக் கூடாது.
- (11) பொது சாலைகளிலிருந்து குத்தகை வழங்கப்பட்ட இடத்திற்குச் செல்ல பாதை வசதி குத்தகைதாரர் சொந்த பொறுப்பில் செய்து கொள்ள வேண்டும்.
- (12) குத்தகை ஒப்பந்தப்பத்திரத்துடன் இணைத்துள்ள வரைபடத்தில் காட்டியுள்ள குத்தகை இடத்தைச் சுற்றிலும் எல்லைக்கற்கள் நட்டு அவற்றைச் சரியானபடி பராமரிக்க வேண்டும்.



- (13) 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் இணைப்பு XII வற்றின் கீழ் உள்ள படிவங்களில் முறையே இசைவாணைச்சீட்டு மற்றும் நடைச்சீட்டினைத் தயார் செய்து அவற்றில் மாவட்ட ஆட்சித்தலைவரால் அதிகாரம் வழங்கப்பட்ட அலுவலரின் கையொப்ப முத்திரை மற்றும் அலுவலக முத்திரைகள் பெற்று குவாரியிலிருந்து குண்டுக்கல், கட்டுக்கல், சக்கை மற்றும் ஜல்லி ஆகியவற்றை வெளியில் எடுத்துச் செல்லும் ஒவ்வொரு வாகனத்திற்கும் ஒவ்வொரு நடைக்கும் வழங்கப்படவேண்டும். குண்டுக்கல், கட்டுக்கல், சக்கைகல், ஜல்லி ஆகியவற்றை ஏற்றிச் செல்லும் ஒவ்வொரு வாகனமும் அதனைச் சோதனைச் செய்வதற்கு அதிகாரம் பெற்ற அலுவலர் சோதனைச் செய்யும்போது நடைச்சீட்டினைக் காண்பிக்க வேண்டும். இசைவாணைச்சீட்டு மற்றும் நடைச்சீட்டின் நகல்களை குவாரியில் வைத்திருக்க வேண்டும். முறையான இசைவாணைச்சீட்டு மற்றும் நடைச்சீட்டுகள் இல்லாமல் கனிமங்களை ஏற்றிச் செல்லும் வாகனங்கள் 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் மற்றும் சுரங்கங்கள் மற்றும் கனிமங்கள் (ஒழுங்குமுறை மற்றும் அபிவிருத்தி) சட்டம், 1957-ன்படி கைப்பற்றப்பட்டு, குத்தகைதாரர் மீது நடவடிக்கை எடுக்கப்படுவதுடன் குவாரிக் குத்தகையையும் ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
- (14) குத்தகை வழங்கப்பட்ட இடத்தை குண்டுக்கல், கட்டுக்கல், சக்கை மற்றும் ஜல்லி குவாரி செய்ய மட்டும் பயன்படுத்த வேண்டும். குத்தகை உரிம ஆணை அல்லது குத்தகை ஒப்பந்தப்பத்திரத்தில் தவறுதலாக கனிம விவரம் குறிக்கப்பட்டு இருந்தால் அதனை எந்த நேரத்திலும் திருத்துவதற்கு மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. குத்தகைதாரர் அதனடிப்படையில் எந்த உரிமையும் கோரமுடியாது.
- (15) மெருகேற்றுவதற்கும், அயல் நாட்டிற்கு ஏற்றுமதி செய்வதற்கும் பயன்படும் பெரிய கந்துண்டங்கள் வடிவத்தில் கற்குவாரி செய்யக் கூடாது.
- (16) குத்தகை ஒப்பந்தப்பத்திரத்தில் குறிக்கப்படாத வேறு ஏதாவதொரு கனிமம் கிடைத்தால், அதனை சம்பந்தப்பட்ட அலுவலரின் அனுமதியைப் பெறாமலும், அதற்குரிய சீனியரேஜ் தொகையைச் செலுத்தாமலும் எடுக்கக்கூடாது. புதிய கனிமம் கிடைத்த விவரத்தை 30 தினங்களுக்குள் தெரிவிக்காமல் எடுத்துச் சென்றால் இக்குற்றத்திற்கு அந்த கனிமத்திற்குரிய சாதாரண சீனியரேஜ் கட்டணத்தைப்போல் 15 மடங்குவரை மாவட்ட ஆட்சித்தலைவரால் அபராதம் விதித்து வசூலிக்கப்படும்.
- (17) குத்தகை காலம் முடிந்தபிறகு, குத்தகை வழங்கப்பட்ட இடத்திலிருந்து குண்டுக்கல், கட்டுக்கல், சக்கை மற்றும் ஜல்லியை குவாரி செய்து வெளியில் எடுத்துச் செல்ல குத்தகைதாரருக்கு உரிமையில்லை.
- (18) குத்தகை காலம் முடிவடைந்த பிறகு குத்தகை இடத்தில் எஞ்சின், மெஷின் போன்ற எந்தவிதமான தளவாட பொருட்களையும் வைத்திருக்கக்கூடாது. அவற்றை குத்தகை காலத்தில் கடைசி நாளன்று குத்தகைதாரர் எடுத்துச் சென்றுவிட வேண்டும்.
- (19) குத்தகையை வேறு எவருக்கும் உள் குத்தகைக்கு விடக்கூடாது.
- (20) குவாரி செய்வதில் இழப்பு ஏற்படின் நஷ்டஈடு கேட்கக்கூடாது.
- (21) குவாரியில் வேலை செய்யும் தொழிலாளர்கள் மற்றும் இதர நபர்களுக்கு விபத்து ஏதாவது ஏற்படின் அதற்கு முழுப் பொறுப்பினையும் குத்தகைதாரரைச்சேரும். இதற்கு அரசு பொறுப்பல்ல.
- (22) அரசுக்கு செலுத்த வேண்டிய தொகையை உரிய காலத்திற்குள் செலுத்தவில்லை என்றால் அத்தொகை 24 % அல்லது அரசால் அவ்வப்போது நிர்ணயிக்கப்படும் வீதத்தில் வட்டியுடன் குத்தகைதாரரிடமிருந்து வசூலிக்கப்படும்.
- (23) அரசுக்கு செலுத்த வேண்டிய பாக்கித் தொகை தமிழ்நாடு வருவாய் வசூல் சட்டம் 1864-ன் கீழ் வசூலிக்கப்படும்.
- (24) குத்தகை நிபந்தனைகள், 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள், அரசு, ஆணையர், புவியியல் மற்றும் சுரங்கத்துறை, மாவட்ட ஆட்சித்தலைவர் ஆகியோரது ஆணைகள் மீறப்படின் மீறலுக்கு அபராதம் விதிப்பதோடு அல்லாமல் குத்தகைதாரருக்கு நேர்முக விசாரணைக்கு வாய்ப்பளித்த பின்பு குத்தகை உரிமம் ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
- (25) அரசின் அவ்வப்போதைய ஆணைகளுக்கேற்ப நிபந்தனைகளை மாற்றி அமைக்கவோ, நீக்கவோ, கூடுதலாக சேர்க்கவோ, மாவட்ட ஆட்சித்தலைவருக்கு முழு அதிகாரம் உண்டு.
- (26) மேற்கூறிய நிபந்தனைகளுடன் 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள், சுரங்கங்கள் மற்றும் கனிமங்கள் ( ஒழுங்குமுறை மற்றும் அபிவிருத்தி) சட்டம் 1957, மாவட்ட ஆட்சித்தலைவர் ஆகியோரால் அவ்வப்போது பிறப்பிக்கப்படும் ஆணைகள் குத்தகைதாரரைக் கட்டுப்படுத்தும்.



- (27) குவாரிகள்/கரங்கங்களுக்கு பொருந்தக்கூடிய தொழிலாளர் சட்டங்களுக்கு கட்டுப்பாடுகளைக் குத்தகைதாரர் குவாரி செய்யவேண்டும். தவறினால் சம்மந்தப்பட்ட அரசின் கட்டுப்பாட்டின் கீழ் நடவடிக்கைகளுக்கு குத்தகைதாரர் உள்ளாக வேண்டி இருக்கும்.
- (28) இந்திய வெடிமருந்து சட்டம் 1884 (Central Act IV of 1884)-ன்படி உரிய வெடிமருந்து உரிமம் பெற்று குத்தகைதாரர் பாறைகளை வெடிவைத்து உடைக்க வேண்டும். தவறும் பட்சத்தில் குத்தகைதாரர் கடும் தண்டனைக்கு உள்ளாக வேண்டியிருக்கும்.
- (29) குத்தகைதாரர் குவாரியில் குழந்தை தொழிலாளர்களை பணியமர்த்தக்கூடாது.

27) a) The lessee should get the consent for operation from the Tamil Nadu Pollution Control Board before the commencement of quarrying operation.

b) The conditions imposed by the Tamil Nadu Pollution Control Board in the consent to establishment in Air and Water Pollution Act should be strictly adhered and the consent should be renewed periodically.

c) The Environment Clearance issued by the DEIAA, Tamil Nadu should be renewed within the prescribed time limit.

**28) Conditions imposed by the DEIAA.**

1. (i) The Environmental Clearance is granted to Mining of Rough Stone for the production quantity of 280511 Cu.m of Rough stone for the period of 5 Years from the date of execution of the Mining lease period.

(ii) Depth of mining permitted = 50 mts. (including topsoil and burden) from a period of 5 years.

**2. A. Conditions to be complied before the commencing of mining operation**

(1) The project proponent shall advertise in at least to 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 State Level Environment Impact Assessment Authority.

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 DEIAA.

(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.

*S. Natarajan*  
*S. S. Srinivasan*  
*S. S. Srinivasan*

*S. S. Srinivasan*





(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 7 AM 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.

(15). The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.

(16). Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.

(17). Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.

(18). The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.

(19). Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.

*S. Nishith*

*S. Dey*

*S. R. R. R.*

*PL*

- S. Vaitav  
S. P. Singh  
K. S. Singh





(29). 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.

(30). 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.

(31). 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.

(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. Photographs of the silt trap should be furnished before commencing quarry operation.

(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, That the ground water is getting depleted due to the quarrying activity, necessary corrective measures shall be carried out. The Assistant Director ground water Division, PWD Dharmapuri shall monitor.

(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 and it should be monitored by the District Environmental Engineer, TNPCB, Hosur on yearly basis.

(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.

*S. Natarajan*  
*S. S. Srinivasan*  
*S. Srinivasan*

*S. Srinivasan*



- (37). It shall be ensured that there is no habitation is located within 500 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site
- (38). Ground water quality monitoring should be conducted once in 3 Months.
- (39). Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
- (40). Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI once in three months.
- (41). Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI periodically once in six months.
- (42). Bunds to be provided at the boundary of the project site and it should be properly maintained.
- (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.
- (44). At least 10 Neem trees should be planted around the boundary of the quarry site.
- (45). Floor of excavated pit to be leveled and sides to be sloped with gentle slope (Except for granite 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 obtaining 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 50 m has to be provided in case of railway, canal/odai

(55) The Assistant / Deputy Director Department of Geology and 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 shall furnish the data obtained from the Public works Department regarding the details of ground water table in the quarry site.

(59) 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.

(60) The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to the existing activity before execution of mining.

(61) Heavy earth machinery equipments if utilized, after getting approval from the competent authority.

(62) The environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur.

(63) The Assistant Director Public works Department, Ground water Division Dharmapuri shall monitor whether the quarrying activity is carried out above the ground water level on yearly basis.

(64) NOC for sanitary certificate shall obtained from the Deputy Director of Health services, Krishnagiri.

(65) Yearly medical examination of the quarry workers should be carried out by the registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services Krishnagiri.

(66) Closed circuit camera should be erected at the quarry site and the passage of vehicles in and out of the quarry should be recorded and the footage of the recordings of the camera should be maintained and should be produced before the enforcing officials when ever called for.

(67) Vehicles used for transportation of quarried materials should be fitted with GPS and monitored and vehicles should not carry the products more than the quantity allowed in the registration certificate.

F. N. N. N.



(68) Pit Mouth register should be maintained in online.

(69) Auditor report on the annual turnover amount should be submitted to the District Collector within one month from the end of the financial year.

(70) 02.5% of the turn over amount should be utilized for the CSR activity after consultation with the District Collector.

**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.

(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 them 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 medical examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
- (13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
- (14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
- (15) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its regional office located at Chennai.
- (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 DEIAA, 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 DEIAA.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) Restricted board should be erected.

*S. Nithya*  
*S. Ravi*



(23) NOC shall be obtained from DGMS for working common boundary with quarries.

(24) Green belt zone activities should be developed.

(25) Area dust monitoring around the quarrying area should be monitored periodically.

(26) Any other conditions stipulated by other Statutory/ Government authorities shall be complied.

29. The lessee should strictly adhere all the conditions imposed in the environmental clearance issued by The DEIAA Tamil Nadu and consent order of the Tamil Nadu Pollution Control Board.

30. The lessee should periodically renew the environmental clearance and the consent orders of the Tamil Nadu Pollution Control Board without any lapse.

31. If any illicit quarrying is found in the area over an extent of 1.33.5 hectares in S.F.No. 327/3 of Gopanapalli Village, Hosur Taluk, Krishnagiri District before the date of execution of lease deed, this lease deed is liable to be cancelled and criminal action will be initiated.

32. If the quarry area is situated within 10 km distance from any protected areas NOC from the Standing committee of NBWL should be obtained before commencing the quarry operation.

33. If the lease holder wants to quarry more than the quantity permitted in the environmental clearance within the lease period, modified mining plan / scheme and Environment Clearance for the additional quantity should be submitted.

#### THE SCHEDULE

TALUK : HOSUR

VILLAGE : GOPANAPALLI

Sl. No.	Survey number	Field	Extent Leased out in Hectares	Boundary			
				North S.F No.	East S.F No.	South S.F No.	West S.F No.
1.	327/3		1.33.5	327/1	327/4	336,337, 338	327/2

C. Nataraj  
S. Raji  
K. Sankar

Handwritten signature



In Witness whereof **Dr. S. Prabhakar I.A.S** the Collector of Krishnagiri District acting for and on behalf of and by the order and direction of the Governor of TamilNadu, "The Lessor" and Tvl. Victory Rocks, 4/637, Dhasarapalli, Denkanikottai Taluk, Krishnagiri District represented by its Authorised signatory /partners 1)Thiru S. Nallathambi, S/o Sabastein, 2) Thiru S.Raja S/o Sidhappa, 3) Thiru R. Kumarakurubaran S/o C.Rajendiran " The lessee" hereunto set their respective hands.

*S. Nallathambi*  
*S. Raja*  
*R. Kumarakurubaran*  
 LESSEE

*S. Prabhakar*  
 DISTRICT COLLECTOR

Signed by the above named  
 in the presence of the following  
 witnesses

Signed by the above named  
 in the presence of the  
 following witnesses.

*[Signature]*  
 Assistant Director  
 (Additional Charge)  
 Geology & Mining Dept.  
 Collectorate, Krishnagiri.

*[Signature]*  
 (R. SATHYABEELAN)  
 ASSISTANT GEOLOGIST  
 O/o. the Dept. of Geology and Mining,  
 Collectorate, Krishnagiri.

A circle with a shaded sector and an unshaded sector. The shaded sector is a small wedge-shaped region, and the unshaded sector is a larger wedge-shaped region. The two sectors are adjacent, sharing a common radius. The central angle of the shaded sector is labeled  $\theta$ , and the central angle of the unshaded sector is labeled  $\phi$ .

LABEL	LATITUDE	LONGITUDE
1	12° 36' 36.08"N	77° 48' 51.48"E
2	12° 38' 40.75"N	77° 48' 52.73"E
3	12° 38' 40.60"N	77° 48' 55.56"E
4	12° 38' 34.51"N	77° 48' 53.03"E

LEASE AREA  
SAFETY ZONE  
AREA AVAILABLE  
FOR QUARRYING.

PAISLO  
HOSUR.

## PROPOSED FOR TENDER AREA



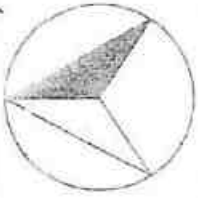
Registering Officer  
Kelamangalam

All dimensions are in meters

LESSER



KULSHAGANI DISTRICT  
HOSUR TALUK  
GOPANAPALLI VILLAGE  
S.F.NO:327/3  
EXTENT=1.33.5 Hects



SCALE 1:5000



1:5000

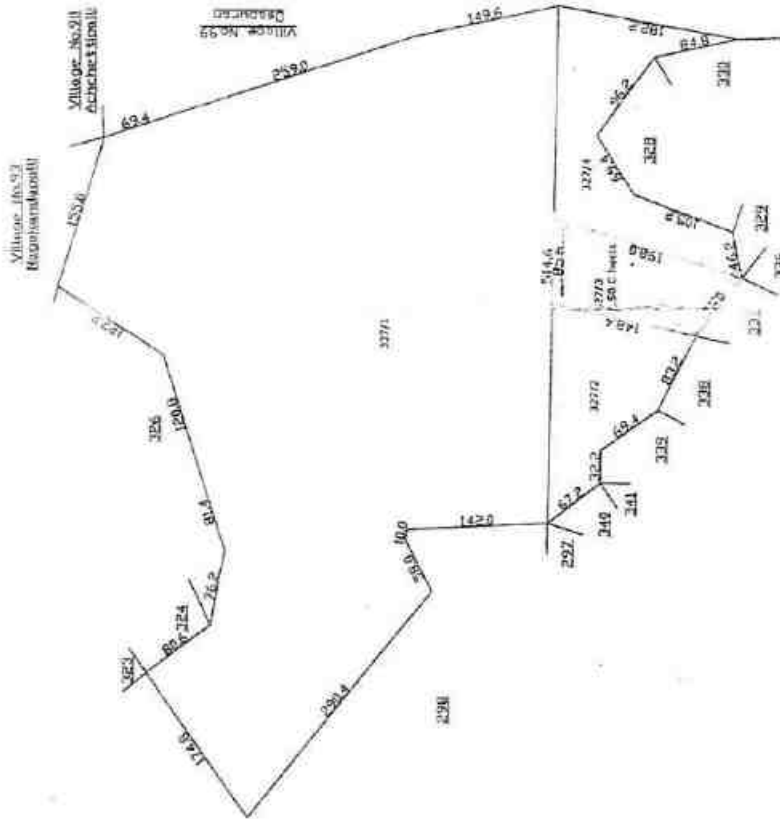
LABEL	LATITUDE	LONGITUDE
1	12° 38' 36.08"N	77° 48' 51.48"E
2	12° 38' 40.75"N	77° 48' 52.73"E
3	12° 38' 40.60"N	77° 48' 55.56"E
4	12° 38' 34.51"N	77° 48' 53.43"E

Index

Lease Area  
Safety Zone  
Area Available  
for Quarrying.



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LEGEND

PROPOSED FOR TENDER AREA ☐  
GRANT/ALONG ☐

Document No. S. 35. 3. of 2023 of Book...  
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Registering Officer  
Kalamangalam

REMARKS

All dimensions are in meters

*Handwritten signatures and names:*  
S. N. ...  
S. ...  
S. ...  
LESSEE



இந்திய அரசாங்கம்  
Government of India

தகவல்  
Nallathambi  
பிறந்த நாள்/ DOB: 29/08/1978  
ஆண் / MALE

6983 5909 0979

எனது ஆதார், எனது அடையாளம்

இந்திய அடையாள அங்கீகரிப்பு அதிகாரம்  
Unique Identification Authority of India

முகவரி:  
தந்தை / தாய் பெயர்:  
சாபஸ்டீன், 4/637,  
தசரப்பள்ளி, தளிகோத்தூர்,  
கிருஷ்ணகிரி,  
தமிழ்நாடு - 635118

Address:  
S/O: Sebastien, 4/637,  
Dasarapalli, Thalikothanur,  
Krishnagiri,  
Tamil Nadu - 635118

6983 5909 0979

1947

help@uidai.gov.in

www.uidai.gov.in

*S. Nallathambi*

இந்திய அரசாங்கம்  
Unique Identification Authority of India  
Government of India

பதிவு எண் / Enrolment No.: 0651/10126/25192

To  
ராஜா  
Raja  
S/O: Siddappa  
45-3  
Gopanapalli  
Hosur  
Gopanapalli  
Gopanapalli  
Krishnagiri Tamil Nadu - 635110  
9952464994

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உங்கள் ஆதார் எண் / Your Aadhaar No. :  
8206 4005 8964  
VID : 9110468776842954

எனது ஆதார், எனது அடையாளம்

இந்திய அரசாங்கம்  
Government of India

ராஜா  
Raja  
பிறந்த நாள்/DOB: 02/03/1984  
ஆண் / MALE

8206 4005 8964  
VID : 9110468776842954





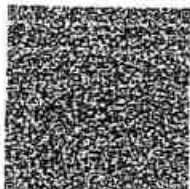

எனது ஆதார், எனது அடையாளம்

*S. Nallathambi*

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Registering Officer  
Kalamangalam



  <p>இந்திய தனிப்பட்ட அடையாள-ஆணைய அமைப்பு</p> <p><b>இந்திய அரசாங்கம்</b> Unique Identification Authority of India Government of India</p>	  <p>செஷன்</p>
<p>பதிவேட்டு எண்/ Enrolment No.: 2007/26720/05355</p> <p>To கும்ரகுபரன் ராஜேந்திரன் Kumarakurubaran Rajendran S/O: Rajendran 1/64 CHICKAPADDAKANAHALLI PALACODE SAMANOOR POST Marandahalli Marandahalli Dharmapuri Tamil Nadu - 636806 9786691691</p> <p>Download Date: 03/08/2019</p> <p>Generation Date: 17/07/2013</p> <p>Signature Not Verified</p> 	<p>நகல்</p> <ul style="list-style-type: none"> <li>ஆதார் அடையாளத்திற்கான சான்று, குடியுரிமைக்கு அல்ல.</li> <li>அடையாள சான்ற ஆன்லைன் ஆதர்ப்புகள் மூலமாகப் பெறவும்.</li> <li>இது எலக்ட்ரானிக் செயல்முறை மூலம் தயாரிக்கப்பட்ட கடிதமாகும்.</li> </ul> <p><b>INFORMATION</b></p> <ul style="list-style-type: none"> <li>Aadhaar is a proof of identity, not of citizenship.</li> <li>To establish identity, authenticate online.</li> <li>This is electronically generated letter.</li> </ul> <ul style="list-style-type: none"> <li>ஆதார் நாடு முழுவதிலும் செல்லுபடியாகும்.</li> <li>வருங்காலத்தில் அரசு மற்றும் அரசு சாரா சேவைகளை பயன்படுத்திக் கொள்ள ஆதார் உதவிகரமாக இருக்கும்.</li> <li>Aadhaar is valid throughout the country.</li> <li>Aadhaar will be helpful in availing Government and Non-Government services in future.</li> </ul>
<p>உங்கள் ஆதார் எண் / Your Aadhaar No. : <b>7491 4497 8143</b> VID : 9141 9830 1483 0458</p> <p>எனது ஆதார், எனது அடையாளம்</p>	
<p>இந்திய அரசாங்கம் Government of India</p>  <p>கும்ரகுபரன் ராஜேந்திரன் Kumarakurubaran Rajendran பிறந்த நாள்/DOB: 21/02/1991 ஆண்/ MALE</p> <p><b>7491 4497 8143</b> VID : 9141 9830 1483 0458</p> <p>எனது ஆதார், எனது அடையாளம்</p>	<p>இந்திய தனிப்பட்ட அடையாள-ஆணைய அமைப்பு Unique Identification Authority of India</p> <p>மேலவர்: S/O: இராஜேந்திரன், 1/64, சிக்கப்படகாஹலி- அள்ளி, சாமனூர் அஞ்சல், பாலகோடு, மாரண்டாஹலி, தருமபுரி, தமிழ் நாடு - 636806</p> <p>Address: S/O: Rajendran, 1/64, CHICKAPADDAKANAHALLI, SAMANOOR POST, PALACODE, Marandahalli, Dharmapuri, Tamil Nadu - 636806</p> <p><b>7491 4497 8143</b> VID : 9141 9830 1483 0458</p>

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**278**  
Registering Officer  
Kolamandalam



**இந்திய அரசாங்கம்**  
**Government of India**



**மாது பெருமாளப்பா**  
**Madhu Perumalappa**

**தந்தை பெருமாளப்பா**  
**Father : PERUMALAPPA**

**பிறந்த நாள் DOB: 15/10/1963**  
**ஆண்மை : Male**

4686 2846 5849

ஆதார் - சாதாரண மனிதனின் அதிகாரம்

**இந்திய அரசாங்கம்**  
**Government of India**

**மாது பெருமாளப்பா, 32/43B**  
**செவடி கோவில் தெரு, டென்கனிகொட்டை,**  
**கேலமங்கலம், கிருஷ்ணகிரி, தமிழ் நாடு**  
**635113**



**Address: S/O: Perumalappa,**  
**32/43B, KESAVAR KOVIL**  
**STREET, Denkanikottai,**  
**Kelamangalam, Krishnagiri,**  
**Denkanikottai, Tamil Nadu,**  
**835113**

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**இந்திய அடையாளம்**  
Unique Identification Authority of India

**பதிவு எண் / Enrolment No. : 2193/11163/05984**

**பதிவு செய்தவர் / Enrolment Holder Details:**  
பெயர்: அனைய்யா அனைய்யா  
பெயர்: Anaiyappa  
50: Anaiyappa  
22/77  
ANNA MAGNA  
பெயர்: அனைய்யா  
பெயர்: Anaiyappa  
பெயர்: Anaiyappa  
பெயர்: Anaiyappa  
பெயர்: Anaiyappa  
பெயர்: Anaiyappa

**உங்கள் ஆதார் எண் / Your Aadhaar No. : 7157 8495 4818**

**எனது ஆதார், எனது அடையாளம்**

**இந்திய அரசாங்கம்**  
Government of India

**பதிவு செய்தவர் / Enrolment Holder Details:**  
பெயர்: அனைய்யா அனைய்யா  
பெயர்: Anaiyappa  
பெயர்: Anaiyappa  
பெயர்: Anaiyappa  
பெயர்: Anaiyappa  
பெயர்: Anaiyappa  
பெயர்: Anaiyappa

**7157 8495 4818**

**எனது ஆதார், எனது அடையாளம்**

Document No.: 5,35% of 2020 of Book...1....  
Contains...28... Sheets...26... Sheet.

  
280







## CERTIFICATE UNDER SECTION 42 OF THE INDIAN STAMP ACT 1899

S.No 3980 of 2020

I hereby certify that a sum of ₹ 3,87,025/- (Rupees Three Lakh Eighty Seven Thousand and Twenty 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. S NALLATHAMBI residing at At No.4/637, Dhasarapalli Village,, Denkanikottai, Krishnagiri, Tamil Nadu, India, 635118.

Sub Registrar: Kelamangalam  
Date: 03/09/2020

Signature of Sub Registrar and Collector under Section  
41 of the Indian Stamp Act



Presented in the office of the Sub Registrar of Kelamangalam and fee of ₹ 20,455/- paid at 11:53 AM on the 03/09/2020 by

Left Thumb



*S. Nallathambi*

Additions as per recitals of document

I have satisfied myself as to the execution of the instrument by Mr. S PRABHAKAR IAS DISTRICT COLLECTOR, Krishnagiri, Krishnagiri, Tamil Nadu, India, 635001 (District Collector, Krishnagiri) who is exempted from personal appearance under section 88(1) of the registration act.

*S. Nallathambi*  
Sub Registrar: Kelamangalam

Claim admitted by  
Left Thumb



*S. Nallathambi*

Additions as per recitals of document

Document No: 5358 of 2020 of Book...1....  
Contains...28...Sheets...27...Sheet.

Registering Officer  
Kelamangalam





Claim admitted by  
Left Thumb



S. Rupa

Additions as per recitals of document

Claim admitted by  
Left Thumb



S. Rupa

Additions as per recitals of document

Identified By

1.

Lenz

Mr. MADHU Son of PERUMALAPPA kesavar Kovil Street, KELAMANGALAM, Denkanikottai, Krishnagiri, Tamil Nadu, India, 635113.

2.

Bm

Mr. BALAKRISHNAN Son of ANNIYAPPA residing at Anna Nagar, KELAMANGALAM, Denkanikottai, Krishnagiri, Tamil Nadu, India, 635113.

3<sup>rd</sup> day of September 2020

SEETHARAMU C

Sub Registrar  
Kelamangalam

Registered as Number R/Kelamangalam/Book-1/5358/2020.

Date: 03/09/2020  
Kelamangalam



SEETHARAMU C

Sub Registrar

Document No: 5358 of 2020 of Book...1...  
Contains...28 Sheets...28 Sheet.

2/2

Registering Officer  
Kelamangalam

282

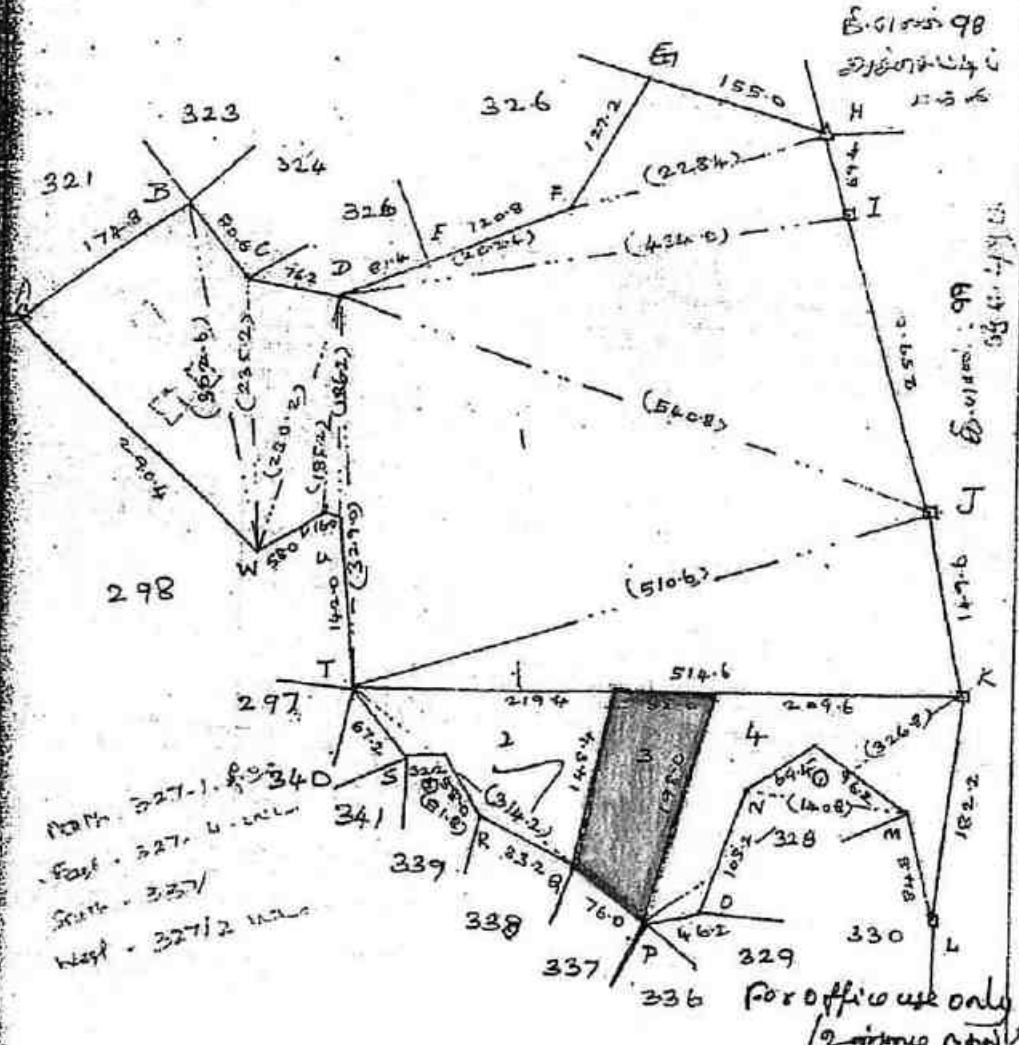




ANNEXURE - VI

கிருஷ்ணகிரி  
புல எண்: 327  
பரப்பு: 93 ஏக்கர்  
சீராமம்  
பெயர்: சீராமம்

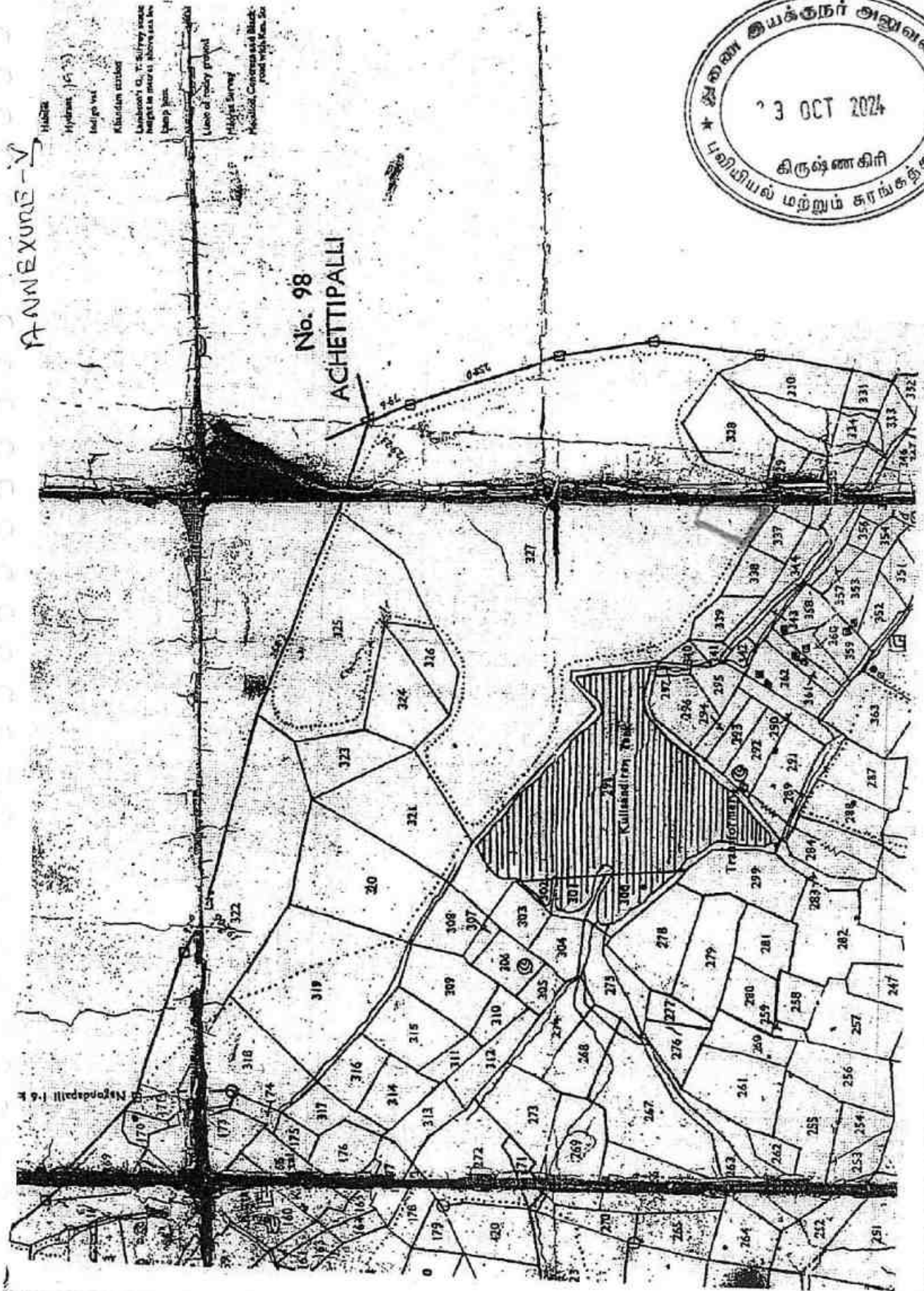
Proposed Area = 1.33.5 Hectr  
நீர் ஏக்கர்: 93  
பரப்பு: 93 ஏக்கர்



LEASE AREA

S. Ravindran 27/5/2015  
Village Administrative Officer  
97, GOPANAPALLI  
Madhavur - Tk. Krishnagiri - Dt.





LEASE AREA

1	2	3	4	5	6	7	8	9	10	11
							ரு. ஸப.	தெ. ஏர்ஸ்.	ரு. ஸப.	
322	2	322-2	ர	4	...	8-5	10	1 09	3 28-0	3 56
									6 55 0	5 56
323	...	323	ர	4	...	8-5	10	1 09	1 07 5	1 19
324	...	324	ர	4	...	8-5	...	0 62	1 54 5	0 94
325	...	325	ர	4	...	8-5	10	1 09	5 28-5	5 69
326	...	326	ர	4	...	8-5	10	1 09	0 80-5	0 88
327	1	327-1	சு. த. ஏ. த.	...	...	...	...	...	24 31-5	...
	2	-2	ர	4	...	8-5	10	1 09	1 62-0	1 76
	3	-3	சு	4	...	8-5	10	1 09	1 33-5	1 45
	4	-4	ர	4	...	8-5	10	1 09	2 02-5	2 20
									29 29-5	5 41
328	1	328-பா	ர	4	...	8-5	10	1 09	0 78-0	0 86
	2	-பா	ர	4	...	8-5	10	1 09	0 76-0	0 83
									1 54-0	1 69
329	1	329-1	ர	4	...	8-5	10	1 09	0 21-5	0 23

Victory  
Race  
20 to 30

Over time

Over time



கிருஷ்ணகிரி  
மற்றும் சுரங்கத்துறை

தர்வை  
ஏற்படாததிக.

பொருள்கள்.

352 மு. வெங்கட்ட  
சாமி.

29 செ. கரியப்பா.

184 செ. நாராயணப்  
பா.

29 செ. கரியப்பா.

**PHOTOCOPY OF THE APPLIED LEASE AREA**

Field photos in respect of rough stone quarry lease, Poramboke land, over an extent of 1.33.5hectares in S.F.No: 327/3 of Gopanapalli Village, Hosur Taluk, Krishnagiri District, Tamil Nadu State belongs to **M/s. Victory Rocks,**



**DEED OF PARTNERSHIP**

This Deed of Partnership executed on this 07<sup>th</sup> Day of February 2018 between

- (1). Nallathambi, S/o Sabastein, Aged about 40 Years, residing at No: 4/637, Dasarapalli, Thalikothanur, Krishnagiri District- 635118 as First party
- (2). Raja, S/o Siddappa, Aged 34 years, Residing at 45-3, Gopanapalli, Hosur – 635110 as Second party,
- (3). R.Kumarakurubaran, S/o C. Rajendran, Aged about 27 Years, Hindu, residing at No 1/64, Chickabadakandahalli, Samanoor post, Palacode Taluk, Dharmapuri District – 636806 Herein after referred as Third Party

The Parties have decided to do business by forming a Partnership Firm in the name of "M/s. Victory Rocks" having its office at D.No: M-7 (First Floor), Old Temple Land Hudco, Hosur-635109 for excavating and selling rough stones, crushing and sale of Blue Metal Jelly in

The Quarries taken on lease by First Party from the District Collector Krishnagiri District Tamilnadu at Survey Field Number: 327/3, extent 1.33.5 (303 Acres) hectares at Gopanapalli Village, Hosur Taluk, Krishnagiri District.

In order to reduce the Terms of Understanding in writing this Deed of Partnership has been executed with the following terms and conditions.

**(i) Name of the Firm:**

The name of the Firm shall be "M/s. Victory Rocks" having its office at D.No: M-7 (First Floor), Old Temple Land Hudco, Hosur-635109 it shall be registered under Register of firms as a partnership firm. It shall have a Pan, VAT, Bank Account, Service Tax and other statutory registrations.

The name of the firm can be changed / modified by the parties on a later date if needed.

**(ii) Principal place of business:**

The Principal Place of business shall be at "Survey Field Number: 327/3, extent 1.33.5 hectares at Gopanapalli Village, Hosur Taluk, Krishnagiri District". In case of necessity the said Administration office can also be shifted to any other place of convenience as decided by the parties.



R. S. KUMAR, B.A., LL.B  
ADVOCATE & NOTARY  
Near Court Campus,  
DENKANIKOTTA-635107.  
And: Hosur - 635109





Structure of Business:

The partnership has been formed to do business for excavating and selling of rough stones crushing and sale of Blue Metal Jelly in the Quarry taken on lease. In case of necessity the parties can also do any other allied line of business activity or any other business in the Partnership as decided from time to time.

(iv) Effective Date:

The partnership business shall commence from 07- February-2018.

(v) Capital of the Firm:

That the capital required for the business of partnership shall be contributed time to time by the PARTNERS in such manner in all respect as may be agreed to between them.

(vi) Interest on capital:

Out of the capital contributed, such capital may be paid interest as may be mutually agreed from time to time at the rate or rates not exceeding 12% (twelve percent) per annum.

(vii) Remuneration to partners:

The parties will be effectively monitoring the day to day activities of production, marketing and other financial transactions. Both the parties who have got already experience in the said line of trade have decided to contribute their personal attention to run the business more effectively. For the said undertaking of the work, both parties may be paid salary as may be agreed from time to time between the parties.

The above salary will be charged against the profits of the firm as per provisions of Sec.40 (b) of the Income tax act. If the profits are not sufficient, the above salary will be reduced as per provisions of Sec.40 (b) on Income tax act.

(viii) Division of net profits and losses:

The net profit or loss of the firm after deduction of interest payable to parties and salary to each party as per aforesaid clauses will be divided as under:-

Party of the First Part	:	Nallathambi	:	35 %
Party of the Second Part	:	Raja	:	35 %
Party of the Third Party	:	R.Kumarakurubaran	:	30 %



R. S. KUMAR, B.A., LL.B.,  
NOTARY PUBLIC & NOTARY  
Court Campus,  
DENKANIKOTTAI-635107.  
Floor  
UR-625109

1. S. Nallathambi  
2. S. Raja  
3. R. Kumarakurubaran





(vi) Arbitration:

In the event of any difference of opinion among the party, the same shall be referred to the Arbitrators, as per the Provisions of the Arbitration and Conciliation Act, 1996. The decision of the Arbitrators shall be final.

(xvii) Act

For all other things, for which no specific provision has been made in the deed of partnership, the partners are bound by the provisions of the Indian partnership act 1932.

In witness whereof the parties here to sign the deed on the day the month and year mentioned above, in the presence of the following witnesses:-

Witnesses:

1. S. Shoban

S. Shoban s/o. L. Sankar, Handed  
Chandegondelali (W.H)

2. M. SATHIYANATHY

S/o K. Manickam  
M. 7 - Old Temple Road  
Hosur.

F. Nallathambi

First Party  
(Nallathambi)

S. Raja

Second Party  
(Raja)






R. Kumarakurubaran





Third Party  
(R. Kumarakurubaran)



T/C. 5.2.18

R. SUKUMAR, B.A., LL.B.,  
ADVOCATE & NOTARY  
Near Court Camp,  
DENKANIKOTTA-635107.  
And: II<sup>nd</sup> Floor  
AVS Towers, HOSUR-635109

 		<b>இந்திய அரசாங்கம்</b> <b>Unique Identification Authority of India</b>	
உறுதிப்பாட்டு எண்/Enrollment No.: 152873502201129			
<b>To</b> நல்லதம்பி Nallathambi S/O: Sabastian 4/637 Dasurapalli Thaikothanur Krishnagiri Thally Kothanur Tamil Nadu - 635118 8442244112			
Download Date: 08/05/2017		Generation Date: 27/01/2017	
<b>உங்கள் ஆதார் எண் / Your Aadhaar No. :</b> <b>6983 5909 0979</b>			
<b>எனது ஆதார், எனது அடையாளம்</b>			
			
தயவுசெய்து Nallathambi மிகைல் சண்முகம் DOB: 29/05/1978 ஆண் / MALE		தயவுசெய்து Nallathambi மிகைல் சண்முகம் DOB: 29/05/1978 ஆண் / MALE	
6983 5909 0979		6983 5909 0979	
<b>எனது ஆதார், எனது அடையாளம்</b>			

 		<b>இந்திய அரசாங்கம்</b> <b>Unique Identification Authority of India</b>	
<b>தகவல்</b> ■ ஆதார் அடையாளத்திற்கான சான்று, குடியிருப்பதற்கு அல்ல. ■ அடையாள சான்று ஆன்லைன் ஆதார கேஷன் மூலமாகப் பெறப்படும். ■ இது எலக்ட்ரானிக் செயல்முறை மூலம் தயாரிக்கப்பட்ட கடிதமாகும்.			
<b>INFORMATION</b> ■ Aadhaar is a proof of identity, not of citizenship. ■ To establish identity, authenticate online. ■ This is electronically generated letter.			
■ ஆதார் நாடு முழுவதிலும் செல்லுபடியாகும். ■ வருவாய்தரவில் அரசு மற்றும் அரசு ஊராட்சித்துறைகள் பயன்படுத்திக் கொள்ள ஆதார் உதவிகளாக இருக்கும். ■ Aadhaar is valid throughout the country. ■ Aadhaar will be helpful in availing Government and Non-Government services in future.			
			
முகவரி: திரு. சபாஸ்தியன், 4/637, டாசுராபலி, தாலிகோதனூர், கிருஷ்ணகிரி, தமிழ்நாடு - 635118		Address: S/O: Sabastian, 4/637, Dasurapalli, Thaikothanur, Krishnagiri, Tamil Nadu - 635118	
6983 5909 0979		6983 5909 0979	
<b>எனது ஆதார், எனது அடையாளம்</b>			





*(Signature)*

अर्हता प्राप्त व्यक्ति के रूप में मान्यता प्रमाण पत्र  
(खनिज रियायत नियमावली, 1960 के नियम 22सी के तहत)  
**CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON**  
(Under Rule 22C of Mineral Concession Rules, 1960)



श्री एस. करुपणन, मॉंगनीकाडू, मुत्तमपट्टी पोस्ट, बोम्मीडी वर्यो, ओमलूर तालुक, तमिलनाडू - 635 301, जिनका फोटो और हस्ताक्षर ऊपर दिया हुआ है, अपनी अर्हता और अनुभव का संतोष जनक साक्ष्य दिया है, को खनन योजना तैयार करने हेतु खनिज रियायत नियमावली 1960 के नियम 22सी के तहत अर्हता प्राप्त व्यक्ति के रूप में मान्यता प्रदान की जाती है।

Shri S. Karuppannan, Manganikadu, Muthampatty (Post), Bommididi (Via), Omalur Taluk, Salem District, Tamilnadu - 635 301, whose **Photograph and signature** is affixed herein above, having given satisfactory evidence of his qualifications & experience hereby **RECOGNISED** under Rule 22C of the Mineral Concession Rule, 1960 as a Qualified Person to prepare Mining Plans.

उनकीपंजीयन संख्या है  
His registration number is

RQP /MAS/263/2014/A

यह मान्यता 10 वर्षों की अवधि के लिए मान्यता है जो दिनांक 15.12.2024 को समाप्त होगी।  
This recognition is valid for a period of 10 years ending on 15.12.2024.

उनके द्वारा प्रस्तुत खनन योजना में गलत जानकारी / दस्तावेज पाए जाने की स्थिति में यह प्रमाण पत्र वापस लिया जाएगा / निरस्त किया जाएगा।

This certificate will liable to be withdrawn / cancelled in the event of furnishing the wrong information / documents in the Mining Plan submitted by him.

स्थान/ Place : Chennai  
दिनांक/ Date : 16.12.2014.

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



PLATE NO-I  
 APPLICANT:  
 M/s. VICTORY ROCKS  
 No. 4/637, DASARAPALLE  
 DENKANIKOTTAI TALUK  
 KRISHNAGIRI DISTRICT

LEASE AREA:  
 S.F.NO : 327/3  
 EXTENT : 1.33.5Hect  
 VILLAGE : GOPANAPALLI  
 TALUK : HOSUR  
 DISTRICT : KRISHNAGIRI

INDEX	
MINE LEASE AREA	
APPROACH ROAD	
VILLAGE ROAD	
SH-85 ROAD	
CART ROAD	
HABITATION	

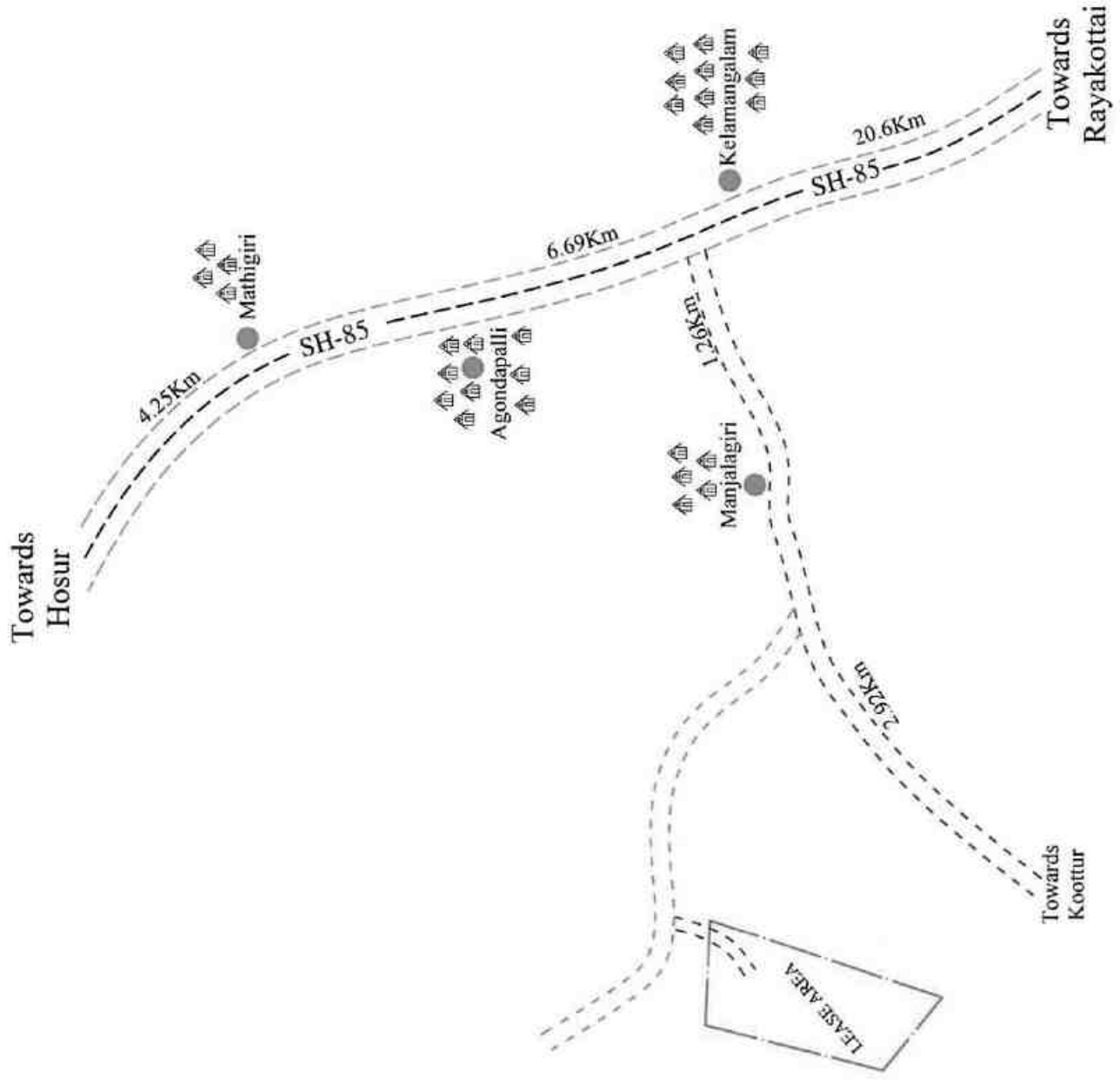
## KEY MAP

Not to Scale

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE  
 HAS BEEN CHECKED BY ME AND IS CORRECT  
 TO THE BEST OF MY KNOWLEDGE

Dr. S. KARUPPANNAN, M.Sc., Ph.D.  
 RECOGNIZED QUALIFIED PERSON  
 ROP/MAS/263/2014/A



12°38'40.75"N

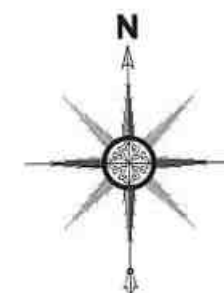


PLATE NO-IA

APPLICANT:

M/s.VICTORY ROCKS,  
No.4/637, DASARAPALLI VILLAGE &POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT

LEASE AREA:

S.F.NO : 327/3  
EXTENT : 1.33.5Hect  
VILLAGE : GOPANAPALLI  
TALUK : HOSUR  
DISTRICT : KRISHNAGIRI

INDEX

MINE LEASE AREA : ●

TOPO SHEET No : 57-H/14

LATITUDE : 12°38'34.51"N to 12°38'40.75"N

LONGITUDE : 78°48'51.48"E to 78°48'55.56"E

LOCATION PLAN

NOT TO SCALE

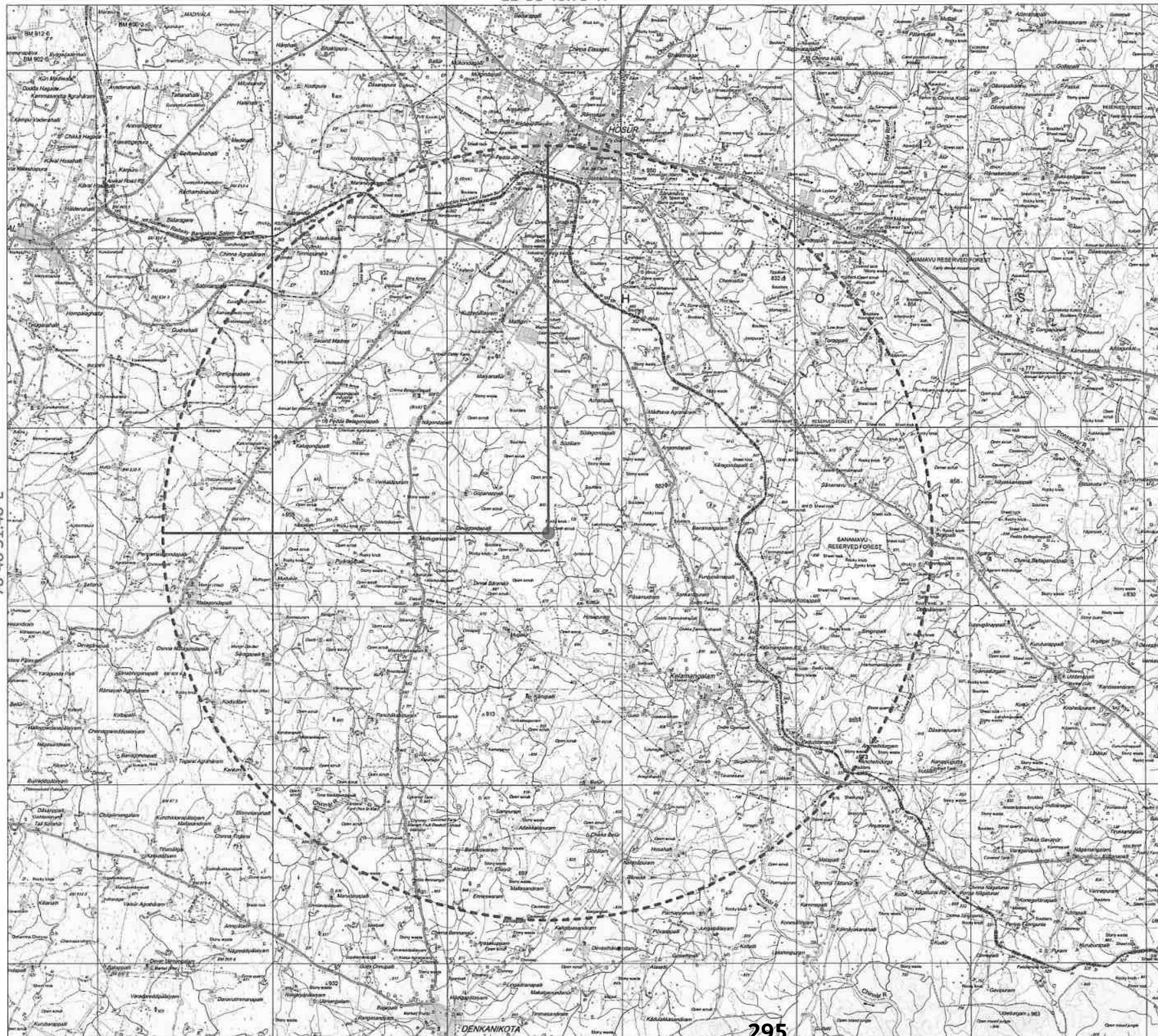
Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/263/2014/A



78°48'51.48"E



## CONVENTIONAL SYMBOLS

Exposed highway with flat roof bridge with drainage stone		
Roads, isolated, surrounding environment		
Roads, isolated, surrounding, according to importance		
Unimproved road, cut back, Paved, back with grass, Paved path		
Drains, with flat roof, asphalt, Canal		
Creek, meadow or rock filled, pathway, Well		
Fluvial dry with water, channel with island & levee, Tidal river		
Submerged rocks, Shallow Swamp, Ponds		
Wells, bore, unlined, Tiled well, Spring, Trench, permanent, dry		
Embankments, road or rail, line, Broken ground		
Railways, broad gauge, double, single with island, under canopy		
Railways, narrow gauge, double, single with meadow stone, di		
Mine, iron or railway, iron, Cutting with tunnel		
Cuttings with sub-structure, Rocky slopes, Cuts		
Soil features (Hills) (Zones) (Contours) (Contours)		
Towers or Mounds, isolated, desertic, Fun		
Urban permanent, temporary, Town, Archipelago		
Temples, Church, Church, Mosque, Light, Tomb, Graves		
Lighthouse, Lighthouse, Light, Light, Light, Archipelago		
Nave, Vase or Gate, Grove, Sculp		
Pavement, pumps, other, Pumps, Canal, Random, Other trees		
Areas, isolated, wooded, Swampy tree		
Boundary, International		
<ul style="list-style-type: none"> <li>State demarcated, international</li> <li>Electric, substation, level or lock, Road</li> </ul>		
Boundary, public, unimproved, unimproved		
Integro, unimproved, station, post, unimproved		
Boundary, public, unimproved, unimproved		
Post office, Telegraph office, Covered, tank		
Rail, house or inspection, burglar, Canal, House, Power, station		
Camping ground, Forest, unimproved, unimproved		
Isolated, temporary, administrative, facility or total		
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Isolated, temporary, administrative, facility or total		
Isolated, temporary, administrative, facility or total		

SCALE- 1:1,00,000

I DO HEREBY CERTIFY THAT THE PLATE  
HAS BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/263/2014/A



12°38'40.75"N

78°48'51.48"E

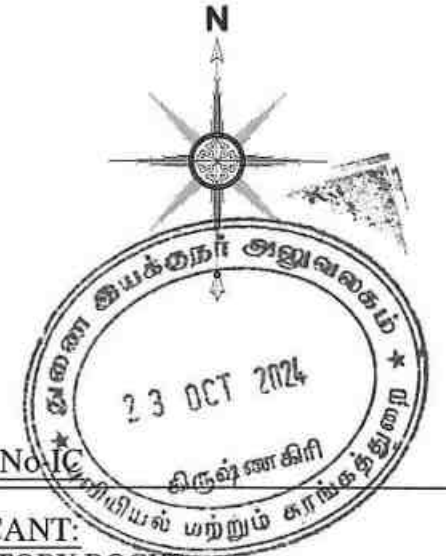


PLATE No. IC

**APPLICANT:**  
M/s.VICTORY ROCKS,  
No.4/637, DASARAPALLI VILLAGE & POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT.

**LEASE AREA:**  
S.F.No : 327/3  
EXTENT : 1.33.5 Hectares  
VILLAGE : GOPANAPALLI  
TALUK : HOSUR  
DISTRICT : KRISHNAGIRI

**INDEX**

MINE LEASE AREA	
APPROACH ROAD	
CART ROAD	
100m RADIUS	
200m RADIUS	
300m RADIUS	
400m RADIUS	
500m RADIUS	
EXISTING PIT	

TOPO SHEET NO : 57-H/14

LATITUDE : 12°38'34.51"N to 12°38'40.75"N

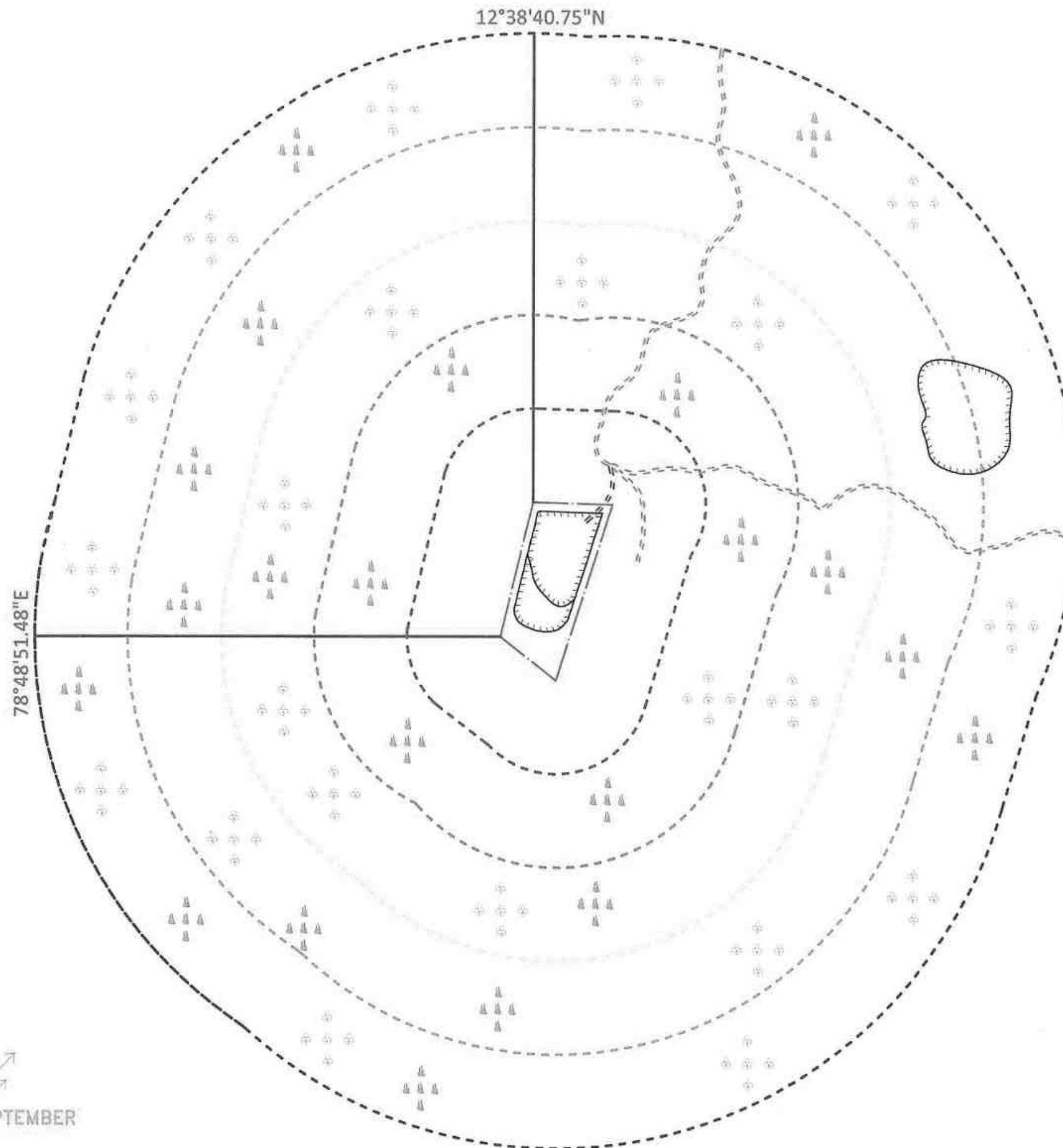
LONGITUDE : 78°48'51.48"E to 78°48'55.56"E

**SATELITE IMAGERY MAP**  
SCALE- 1:5000

Prepared By:

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BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/263/2014/A



OCTOBER TO DECEMBER



PLATE No-15

23 OCT 2024

APPLICANT

M/s.ROYAL BLUE METALS  
R.N.207, CHINNAMMAL BUILDING,  
102-A, PERAMANUR MAIN ROAD,  
FOUR ROAD,  
SALEM DISTRICT - 636 007.

LEASE AREA:

S.F.No : 1151, 1155, 1212 to 1219, 1222,  
1225 & 1226/A(PART-1)

EXTENT : 2.70.0Hect

VILLAGE : KAMANDODDI

TALUK : SHOOLAGIRI

DISTRICT : KRISHNAGIRI

### INDEX

MINE LEASE AREA



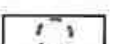
APPROACH ROAD



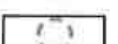
CART ROAD



100m RADIUS



200m RADIUS



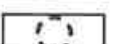
300m RADIUS



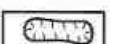
400m RADIUS



500m RADIUS



EXISTING PIT



SHRUBS & TREES



HABITATION



TOPO SHEET NO : 57-H/14

LATITUDE : 12°38'34.51"N to 12°38'40.75"N

LONGITUDE : 78°48'51.48"E to 78°48'55.56"E

### ENVIRONMENTAL PLAN

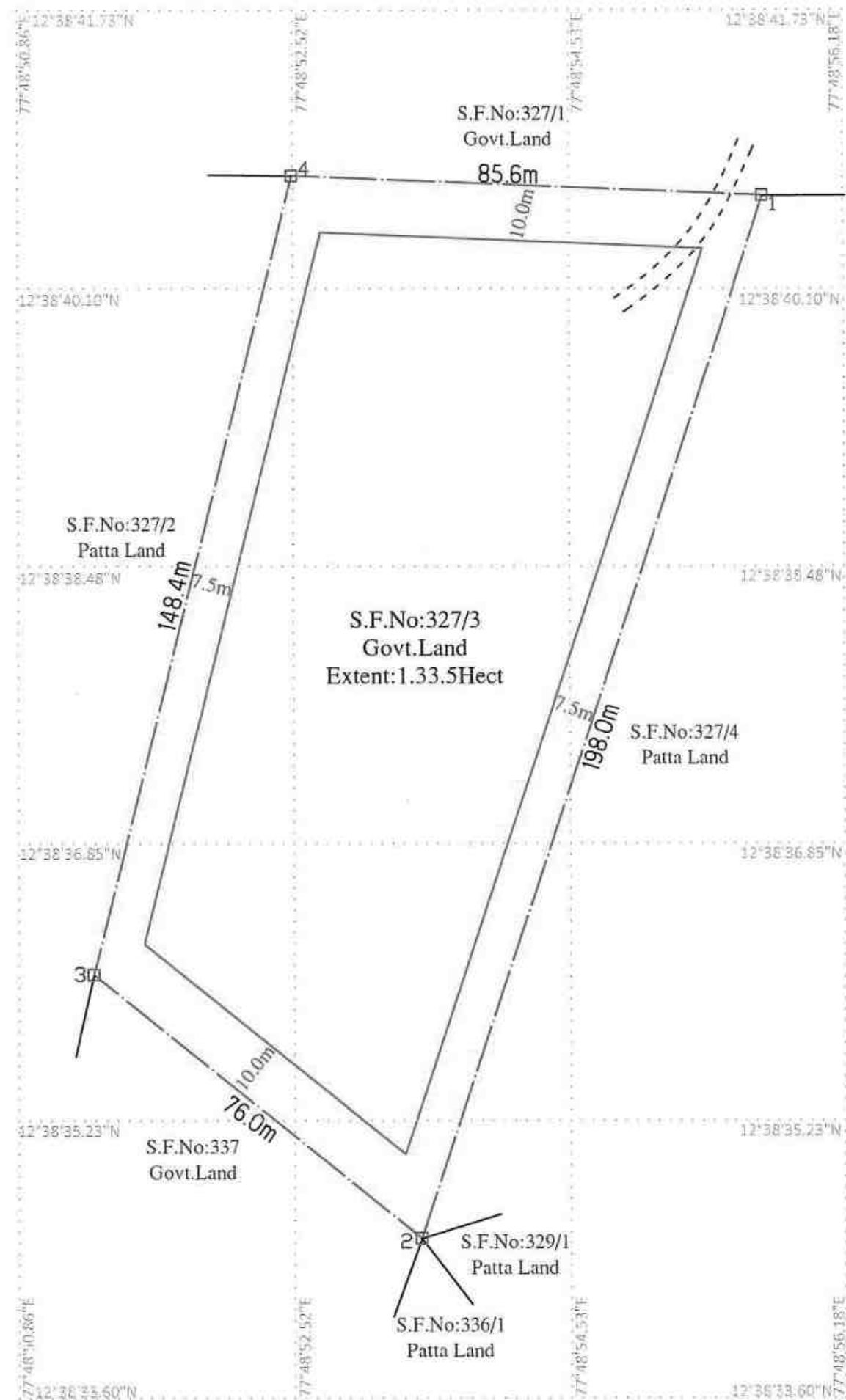
SCALE- 1:5000

Prepared By:

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TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/263/2014/A





# PLATE No-II

**APPLICANT:**  
**M/s.VICTORY ROCKS,**  
 No.4/637, DASARAPALLI VILLAGE &POST,  
 DENKANIKOTTAI TALUK,  
 KRISHNAGIRI DISTRICT

**LEASE AREA:**  
 S.F.NO : 327/3  
 EXTENT : 1.33.5Hect  
 VILLAGE : GOPANAPALLI  
 TALUK : HOSUR  
 DISTRICT : KRISHNAGIRI

## INDEX

MINE LEASE BOUNDARY	
SAFETY BOUNDARY	
APPROACH ROAD	
BOUNDARY PILLAR STONES	

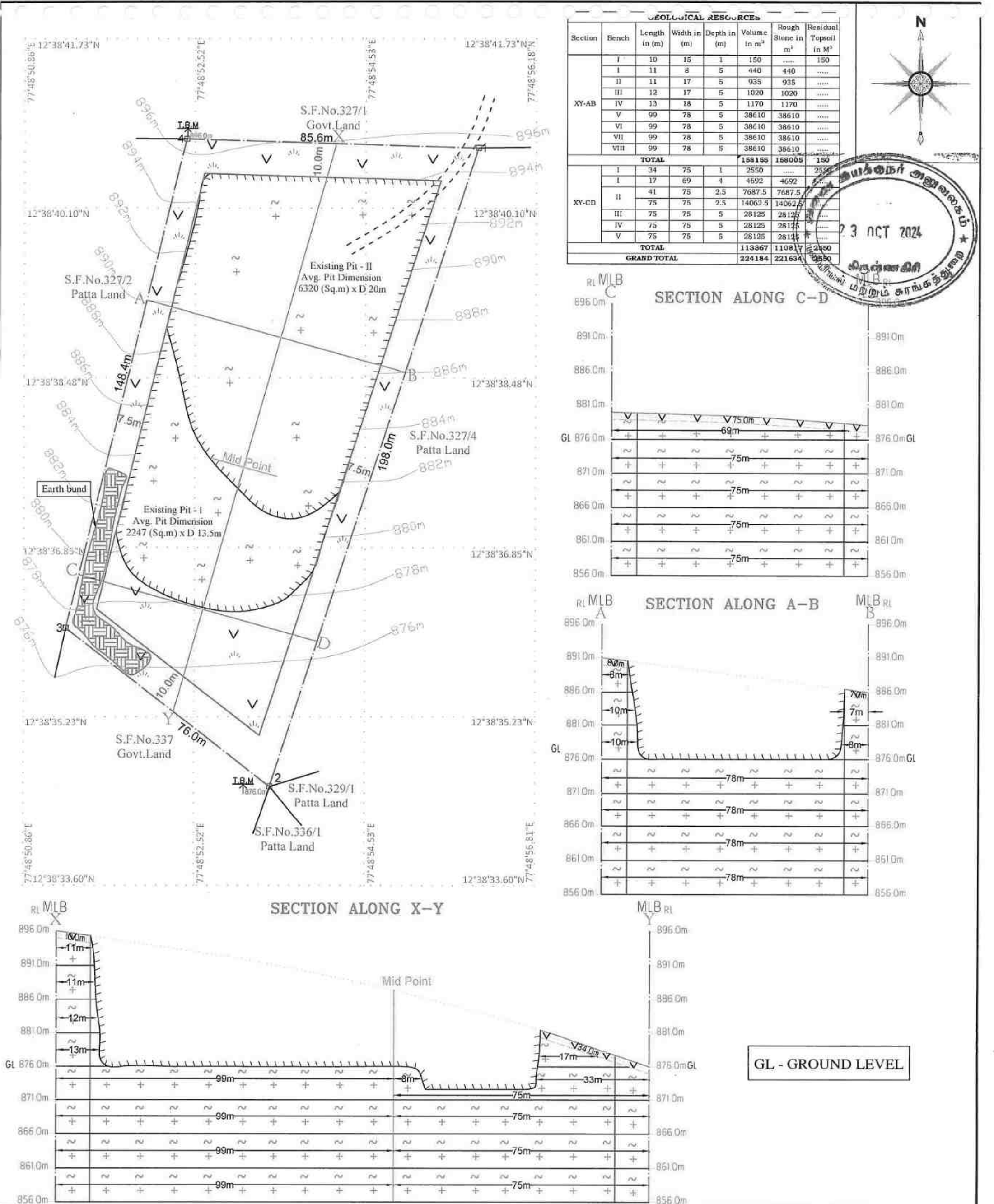
PILLAR ID	LATITUDE	LONGITUDE
1	12°38'40.60"N	77°48'55.56"E
2	12°38'34.51"N	77°48'53.43"E
3	12°38'36.08"N	77°48'51.48"E
4	12°38'40.75"N	77°48'52.73"E

## MINE LEASE PLAN SCALE 1: 1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE  
 HAS BEEN CHECKED BY ME AND IS CORRECT  
 TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
 RECOGNIZED QUALIFIED PERSON  
 RQP/MAS/263/2014/A



GEOLOGICAL RESOURCES						
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m <sup>3</sup>	Residual Topsoil in M <sup>3</sup>
XY-AB	I	10	15	1	150	150
	I	11	8	5	440	440
	II	11	17	5	935	935
	III	12	17	5	1020	1020
	IV	13	18	5	1170	1170
	V	99	78	5	38610	38610
	VI	99	78	5	38610	38610
	VII	99	78	5	38610	38610
	VIII	99	78	5	38610	38610
TOTAL					158155	158005
XY-CD	I	34	75	1	2550	2550
	I	17	69	4	4692	4692
	II	41	75	2.5	7687.5	7687.5
	III	75	75	2.5	14062.5	14062.5
	IV	75	75	5	28125	28125
	V	75	75	5	28125	28125
TOTAL					113367	110817
GRAND TOTAL					224184	221634



**PLATE No- III**

**APPLICANT:**  
M/s.VICTORY ROCKS,  
No.4/637, DASARAPALLI VILLAGE & POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT.

**LEASE AREA:**  
S.F.No : 327/3  
EXTENT : 1.33.5 Hect  
VILLAGE : GOPANAPALLI  
TALUK : HOSUR  
DISTRICT : KRISHNAGIRI

**INDEX**

MINE LEASE BOUNDARY		TEMPORARY BENCH MARK	
SAFETY DISTANCE		EXISTING PIT	
APPROACH ROAD		ROUGH STONE	
BOUNDARY PILLAR STONES		TOPSOIL & SHRUBS	
CONTOUR LINES		EARTH BUND	

**SURFACE GEOLOGICAL PLAN & SECTIONS**  
SCALE 1 : 1000  
SCALE - HOR 1 : 1000 & VER 1 : 500

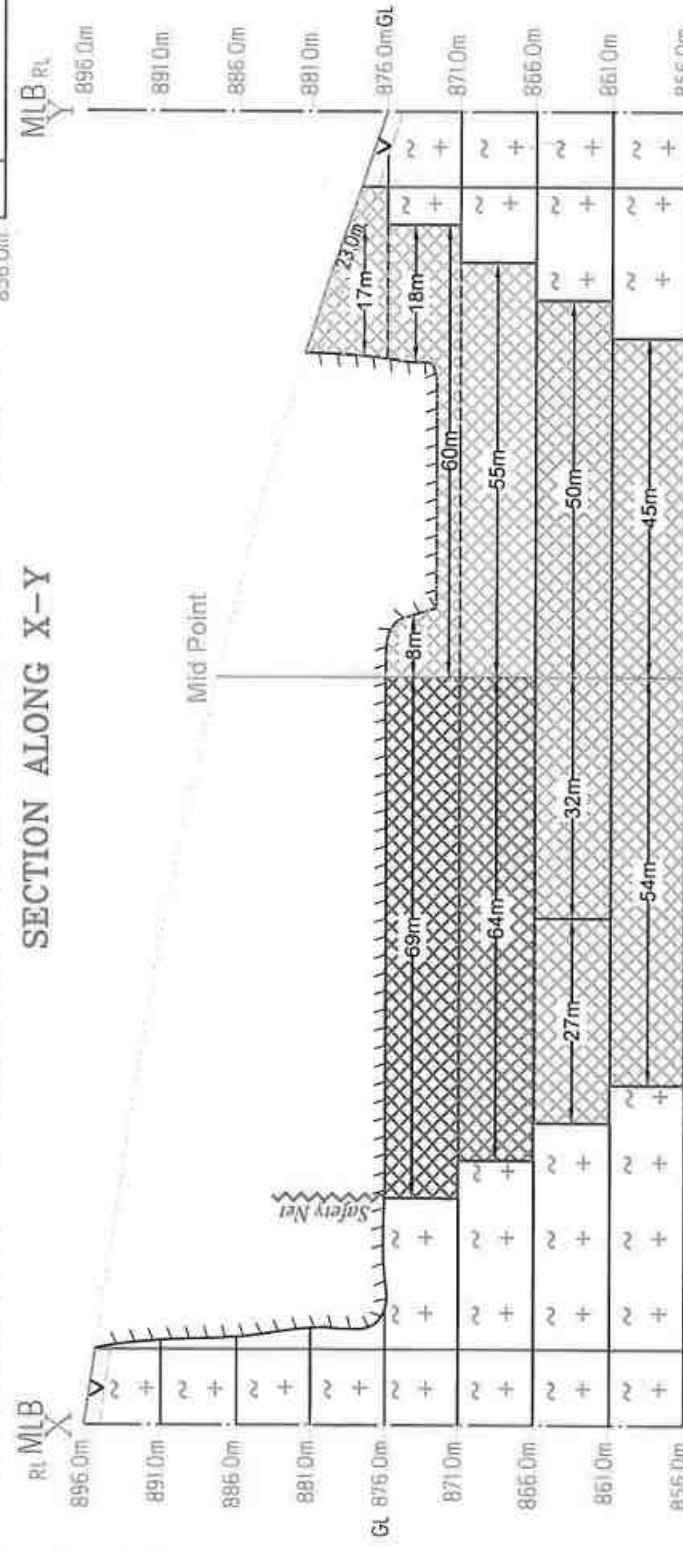
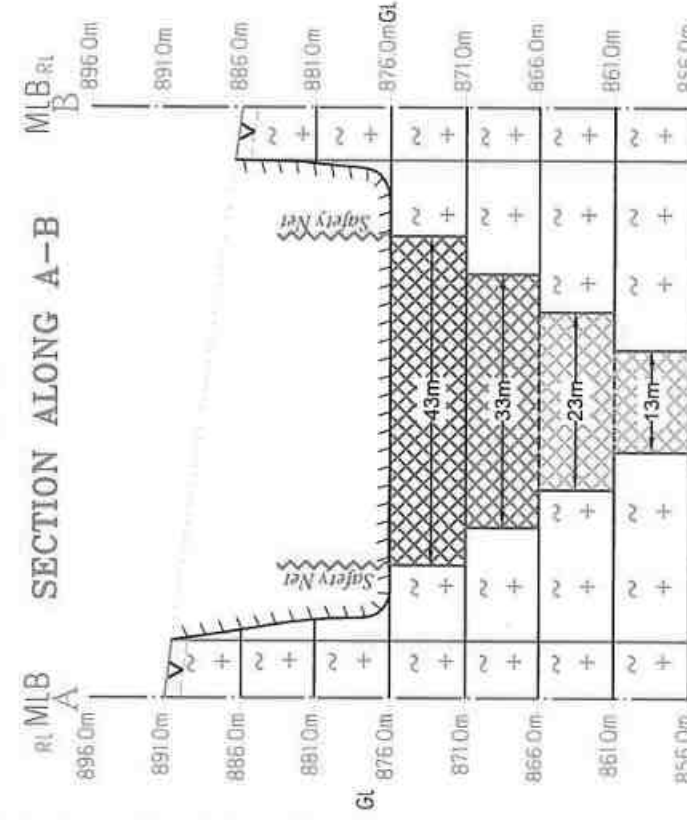
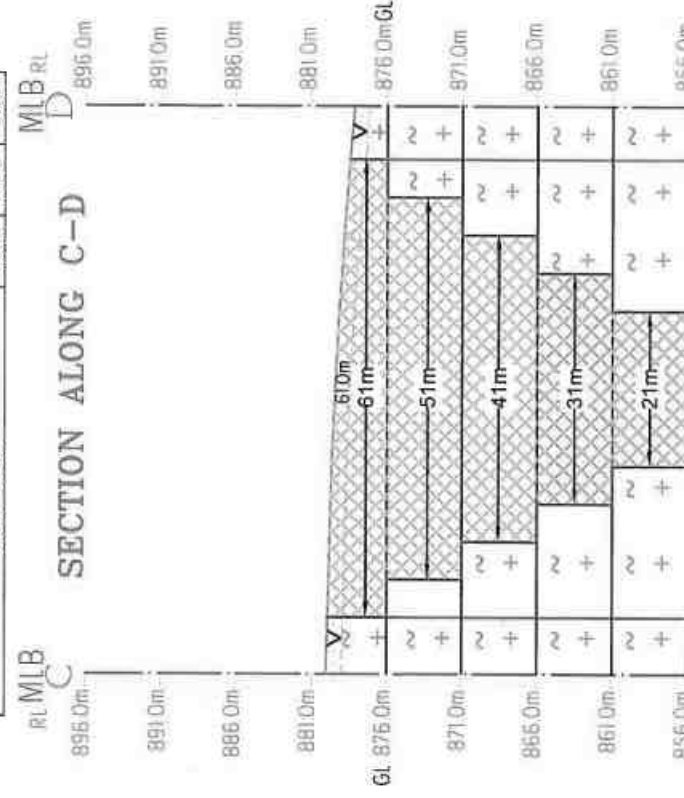
Prepared By:  
**I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE**

**Dr.S.KARUPPANNAN,M.Sc.,Ph.D.**  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/263/2014/A

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YEARWISE PRODUCTION									
Section	Year	Bench	Length (in m)	Width in (m)	Depth in (m)	Volume In M <sup>3</sup>	Rough Stone in m <sup>3</sup>	Residual Topsoil in M <sup>3</sup>	
XY-CD	V-YEAR	I	23	61	1	1403	.....	1403	
		II	17	61	4	4148	4148	.....	
			26	51	2.5	3315	3315	.....	
		II	60	51	2.5	7650	7650	.....	
TOTAL						16516	18113	1403	
XY-AB	VI-YEAR	V	69	43	5	14835	14835	.....	
TOTAL						14835	14835	0	
XY-AB	VII-YEAR	VI	64	33	5	10560	10560	.....	
TOTAL						10560	10560	0	
XY-CD	VIII-YEAR	III	55	41	5	11275	11275	.....	
TOTAL						11275	11275	0	
XY-AB	IX-YEAR	VII	32	23	5	3680	3680	.....	
XY-CD		IV	50	31	5	7750	7750	.....	
TOTAL						11430	11430	0	
XY-AB	X-YEAR	VII	27	23	5	3105	3105	.....	
		VIII	54	13	5	3510	3510	.....	
XY-CD		V	45	21	5	4725	4725	.....	
TOTAL						11340	11340	0	
GRAND TOTAL							75956	74553	1403



- V - Year Proposed area to be Quarried
- VI - Year Proposed area to be Quarried
- VII - Year Proposed area to be Quarried
- VIII - Year Proposed area to be Quarried
- IX - Year Proposed area to be Quarried
- X - Year Proposed area to be Quarried



# PLATE No- IV

**APPLICANT:**  
M/s.VICTORY ROCKS,  
No.4/637, DASARAPALLI VILLAGE & POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT.

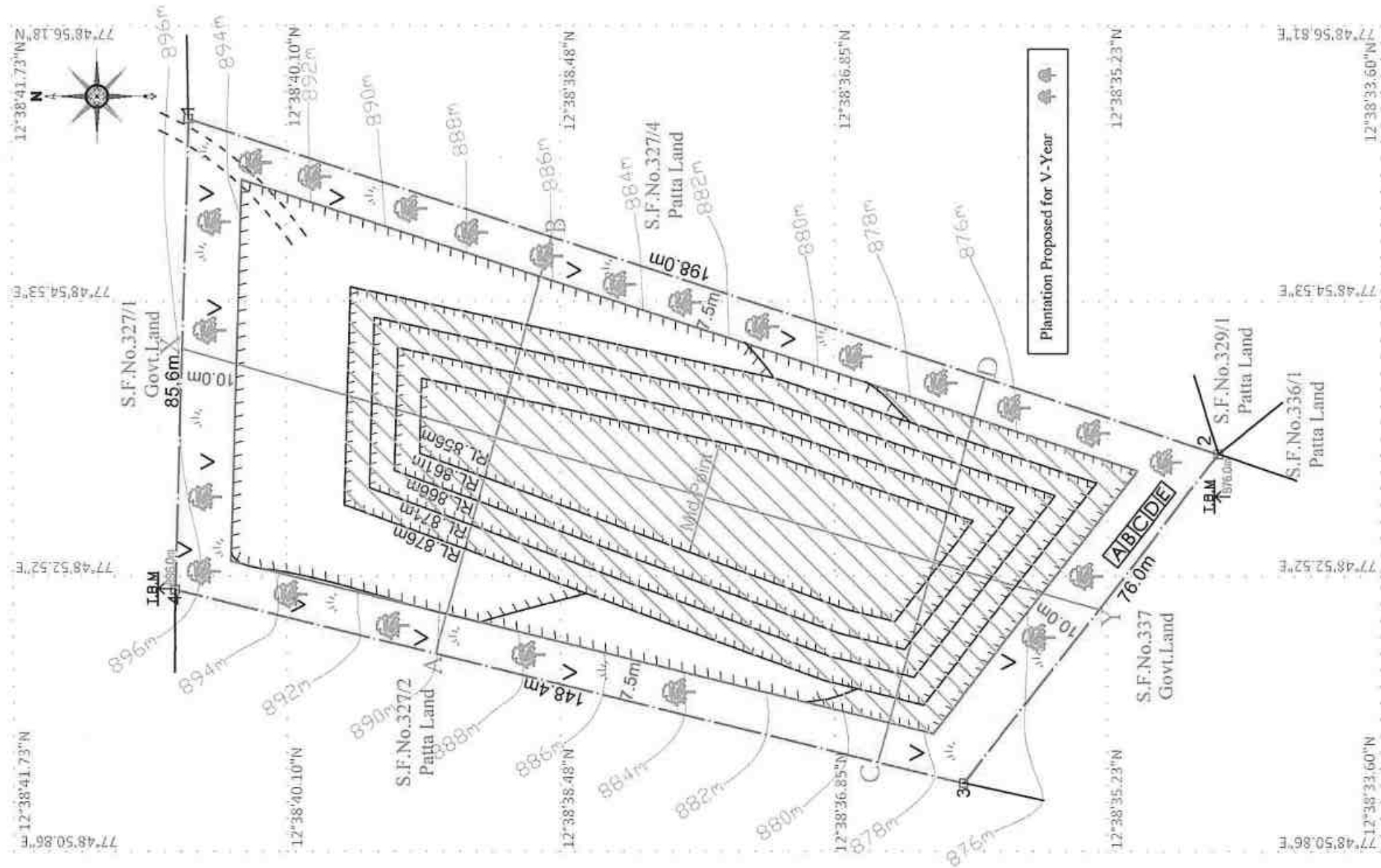
**LEASE AREA:**  
S.F.No : 327/3  
EXTENT : 1.33.5 Hect  
VILLAGE : GOPANAPALLI  
TALUK : HOSUR  
DISTRICT : KRISHNAGIRI

## INDEX

- MINE LEASE BOUNDARY
- SAFETY DISTANCE
- APPROACH ROAD
- BOUNDARY PILLAR STONES
- CONTOUR LINES
- PROPOSED BENCH
- TEMPORARY BENCH MARK
- EXISTING PIT
- ROUGH STONE
- TOPSOIL & SHRUBS

Prepared By:  
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TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/263/2014/A



MINE LAYOUT LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Hect)	AREA IN USE DURING THE QUARRYING PERIOD(Hect)	COLOR CODE
AREA UNDER QUARRYING	0.85.67	0.83.10	
INFRASTRUCTURE	NIL	0.03.0	
ROADS	0.02.0	0.04.0	
UN-UTILIZED AREA	0.45.83	0.13.90	
GREEN BELT	NIL	0.49.50	
GRAND TOTAL	1.33.50	1.33.50	

PLATE No- V

APPLICANT:  
M/s.VICTORY ROCKS,  
No.4/637, DASARAPALLI VILLAGE & POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT.

LEASE AREA:  
S.F.No : 327/3  
EXTENT : 1.33.5 Hect  
VILLAGE : GOPANAPALLI  
TALUK : HOSUR  
DISTRICT : KRISHNAGIRI

INDEX

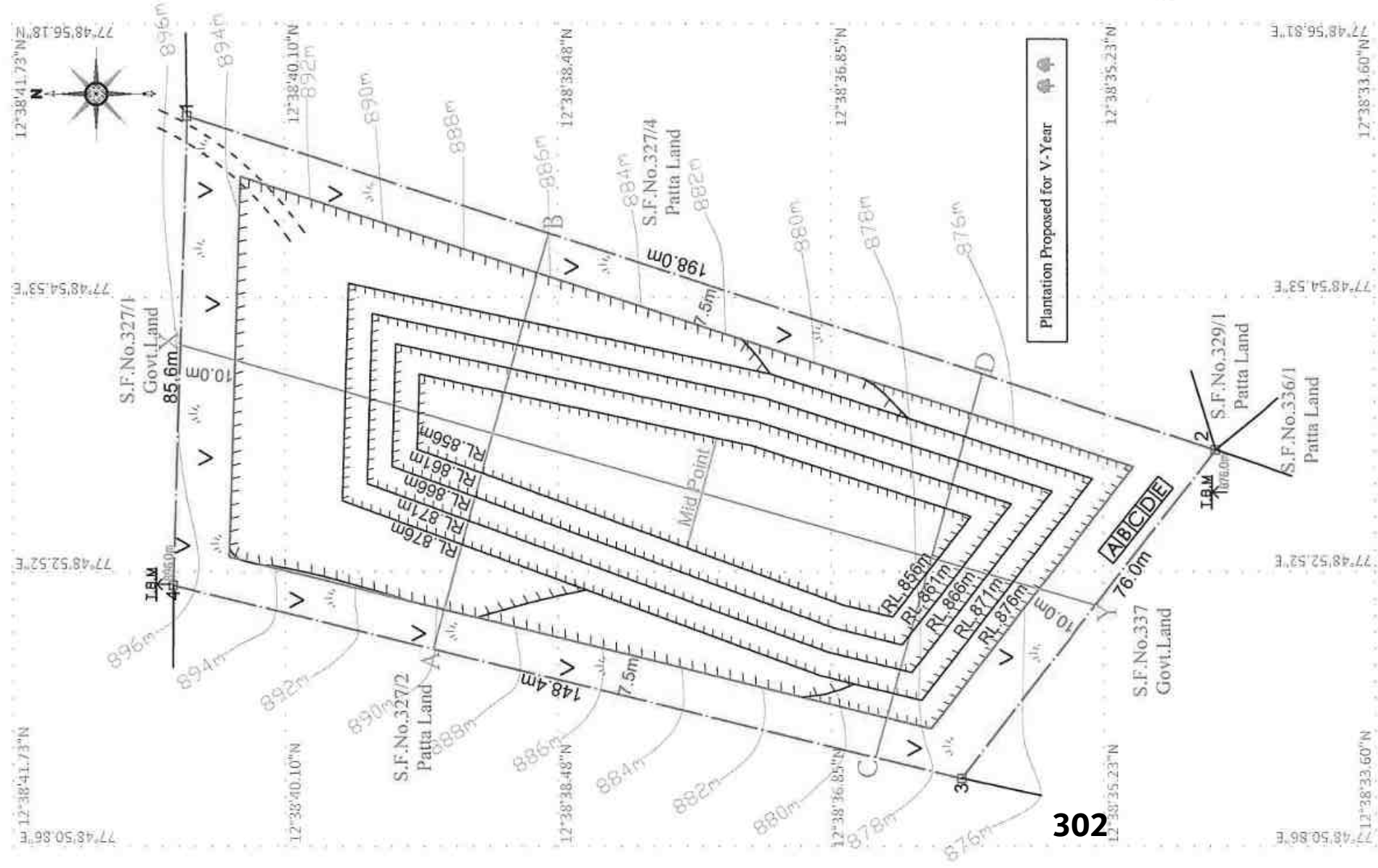
MINE LEASE BOUNDARY	---	TEMPORARY BENCH MARK	LM
SAFETY DISTANCE	---	EXISTING PIT	---
APPROACH ROAD	---	ROUGH STONE	---
BOUNDARY PILLAR STONES	□1	TOPSOIL & SHRUBS	V
CONTOUR LINES	---995m---		
PROPOSED BENCH	---		

MINE LAYOUT PLAN & LAND  
USE PATTERN  
SCALE 1 : 1000

Prepared By:  
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BEEN CHECKED BY ME AND IS CORRECT  
TO THE BEST OF MY KNOWLEDGE

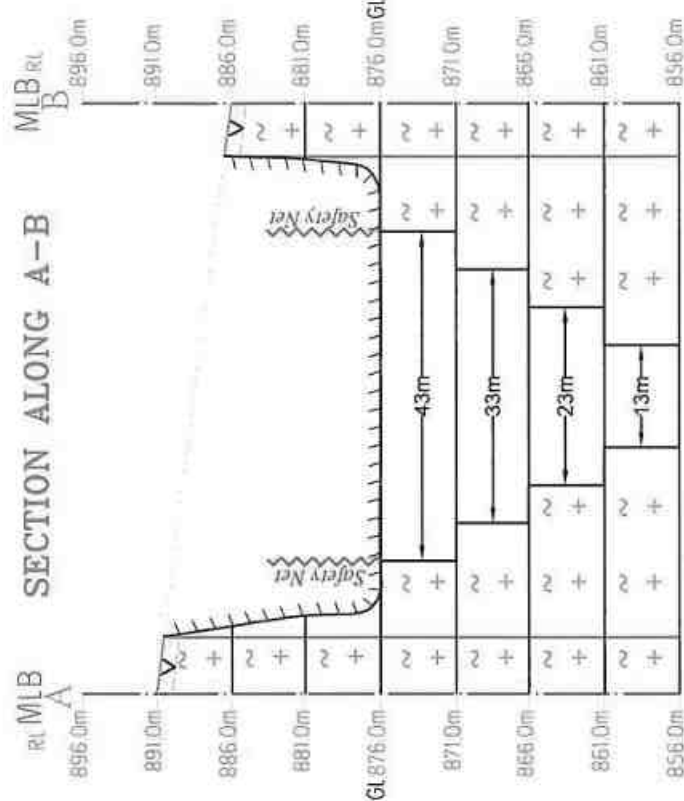
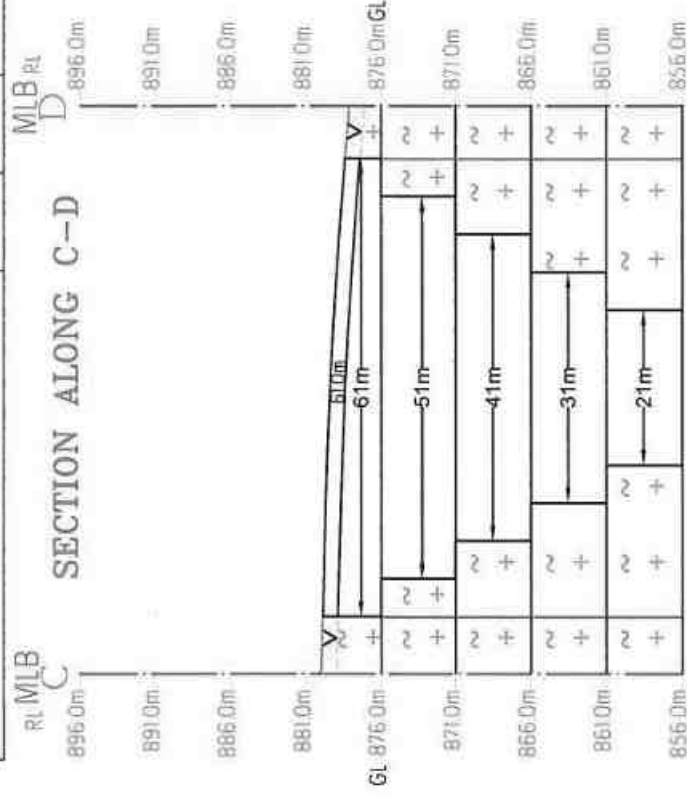
Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/263/2014/A



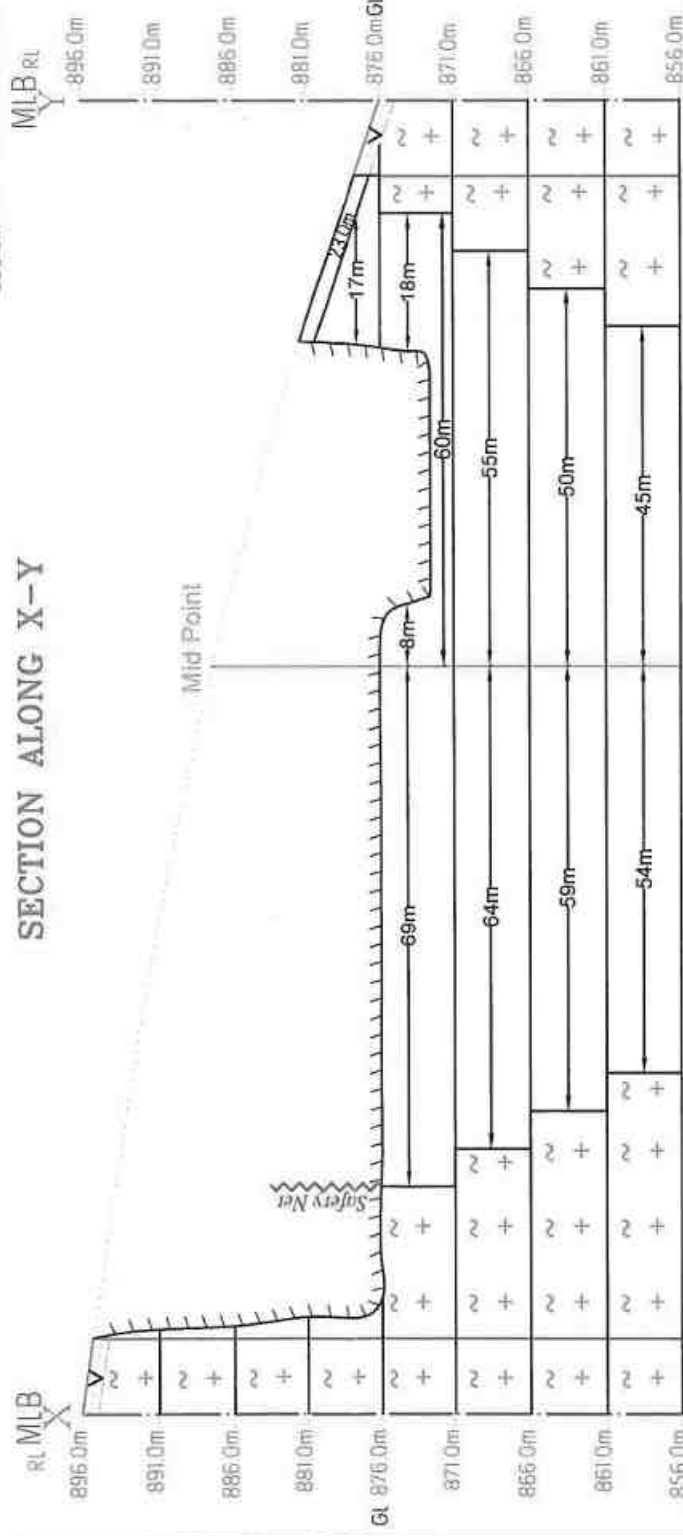


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MINEABLE RESERVES						
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m <sup>3</sup>	Rough Stone in m <sup>3</sup>
XY-AB	V	69	43	5	14835	14835
	VI	64	33	5	10560	10560
	VII	59	23	5	6785	6785
	VIII	54	13	5	3510	3510
TOTAL		23	61	1	35690	35690
XY-CD	I	17	61	4	4148	4148
	II	26	51	2.5	3315	3315
	III	60	51	2.5	7650	7650
	IV	50	31	5	7750	7750
TOTAL		45	21	5	4725	4725
GRAND TOTAL					40266	38863
					79129	74553
						1403



## SECTION ALONG X-Y



GL - GROUND LEVEL



## INDEX

MINE LEASE BOUNDARY	TEMPORARY BENCH MARK
SAFETY DISTANCE	EXISTING PIT
APPROACH ROAD	ROUGH STONE
BOUNDARY PILLAR STONES	TOPSOIL & SHRUBS
CONTOUR LINES	
ULTIMATE BENCH	

## PLATE No- VI

**APPLICANT:**  
M/s. VICTORY ROCKS,  
No. 4/637, DASARAPALLI VILLAGE & POST,  
DENKANIKOTTAI TALUK,  
KRISHNAGIRI DISTRICT.

**LEASE AREA:**  
S.F.No : 327/3  
EXTENT : 1.33.5 Hect  
VILLAGE : GOPANAPALLI  
TALUK : HOSUR  
DISTRICT : KRISHNAGIRI

## CONCEPTUAL PEARLS SECTIONS

SCALE 1 : 1000  
SCALE - HOR 1 : 1000 & VER 1 : 500

Prepared By:  
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TO THE BEST OF MY KNOWLEDGE

Dr.S.KARUPPANNAN,M.Sc.,Ph.D.  
RECOGNIZED QUALIFIED PERSON  
RQP/MAS/263/2014/A

**From**

Dr. P.Jayapal, M.Sc.,Phd.,  
Deputy Director,  
Dept of Geology and Mining,  
Krishnagiri.

**To**

M/s.Victory Rocks,  
No. 4/637, Dasarapalli Village &  
Post, Denkanikottai Taluk,  
Krishnagiri District.

Roc.No.178/2018/Mines dated 23.10.2024

Sir/Madam,

**Sub:** Mines and Minerals-Minor Mineral-Rough Stone-Krishnagiri District- Hosur Taluk - Gopanapalli Village - Government poramboke land in S.F.No.327/3 over an extent of 1.33.50 ha - Tender cum Auction conducted- M/s. Victory Rocks declared as the highest tenderer- Original mining plan submitted and approved-Environmental Clearance obtained from DEIAA- Applied for reappraisal from SEIAA - Draft modified mining plan incorporating correction of bench geometry as per the SEAC recommendation submitted-Modified mining plan approved - reg.

- Ref:**
1. Krishnagiri District Extraordinary Gazette No. 01, dated 19.01.2018.
  2. Precise area Communication issued vide Rc.No.178/2018/Mines, dated 09.02.2018.
  3. Mining plan approved by the Deputy Director of Geology & Mining, Krishnagiri in letter No.178/2018/Mines, dated 23.05.2018.
  4. SEAC-TN Agenda No.392-13 & File No.19058/2023(SIA/TN/MIN/430765/2023,dated 25.05.2023).
  5. Representation of M/s. Victory Rocks, dated 13.06.2024.

\*\*\*\*\*

Kind attention is invited to the references cited above.

2.Tender Cum Auction was conducted on 07.02.2018 for the grant of quarry lease to quarry rough stone in Government land in S.F.No.327/3 over an extent of 1.33.50 hectares in Gopanapalli Village, Hosur Taluk, Krishnagiri District. Since, M/s. Victory Rocks had quoted the highest lease amount, the said tender was confirmed to the said firm.

3.Subsequently, M/s. Victory Rocks had been communicated precise area vide reference 2<sup>nd</sup> cited and directed to submit the Mining plan and Environmental Clearance for grant of rough stone quarry lease over an extent of 1.33.50 hectares of Government Poramboke land in S.F.No.327/3 in Gopanapalli Village, Hosur Taluk, Krishnagiri District for a period of 10 (Ten) years under the provisions of Rule 8 of Tamil Nadu Minor Mineral Concession Rules, 1959.

4.Accordingly, M/s. Victory Rocks had submitted Mining Plan and the same was examined in detail and approved by the Deputy Director of Geology & Mining vide letter No.178/2018/Mines, dated 23.05.2018.

5.At this juncture, M/s. Victory Rocks has submitted representation vide letter dated 13.06.2024 with a request to approve Modified Mining Plan by enclosing SEAC-TN minutes wherein it has been stated as follows:

“As per Metalliferous Mines Regulation,1961, under Chapter XI,106(2)(a), the face shall be benched and the sides shall be sloped at an angle of not more than 60 degrees from the horizontal. The height of any bench shall not exceed six meters and the breadth thereof shall not be less than the height”. Hence, the proponent shall submit a revised mining plan/Scheme of Mining approved by the concerned

Assistant Director of Department of Geology and Mining with the revised bench height and width in accordance with MMR,1961.

6. Based on the instructions issued by SEAC, the applicant has submitted draft Modified Mining Plan prepared and certified by the RQP vide letter dated 13.06.2024. The same has been examined in accordance with the Act and Rules in force and found correct.

7. As per the Modified Mining Plan, the year wise production for the last 6 years including the 5<sup>th</sup> year of the first 5-year plan period is given as below:

**Yearwise production for the last six years**

<b>Year</b>	<b>Recoverable Reserves (m<sup>3</sup>) @ 100%</b>	<b>Topsoil (m<sup>3</sup>)</b>
5 <sup>th</sup> Year	15113	1403
6 <sup>th</sup> Year	14835	-
7 <sup>th</sup> Year	10560	-
8 <sup>th</sup> Year	11275	-
9 <sup>th</sup> Year	11430	-
10 <sup>th</sup> Year	11340	
<b>Total</b>	<b>74553</b>	<b>1403</b>

8. Hence, the power delegated under Rule 41 of the Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the guidelines/instructions issued by the Commissioner of Geology and Mining, vide letter Rc.No.3868/LC/2012 dated 19.11.2012, the Modified Mining Plan is hereby approved subject to the following conditions:

(i) The Modified 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 Modified Mining Plan does not in any way imply the approval of the Government in terms of any other provisions of Mines and Minerals (Development and Regulation) Act, 1957, or any other connected laws including Forest (Conservation) Act, 1957, or any other connected Laws, Forest (Conservation) Act, 1980, Forest Conservation Rules 1981, Environment protection Act, 1986, Indian Explosives Act, 1884 (Central Act IV of 1884), Metalliferous Mines Regulations, 1961 and the rules made thereunder, Minor Mineral Conservation and Development Rules, 2017 and the Tamil Nadu Minor Mineral Concession Rules, 1959.

(iii) The Modified Mining Plan is approved without prejudice to any other order or directions from any court of competent jurisdiction.

(iv) All the conditions mentioned in the precise area communicated to the applicant shall be followed during quarry operation as per Act and Rules.

**Encl:** Modified Mining Plan

*[Signature]*  
23/10/24

**Deputy Director,**

Dept. of Geology and Mining,

Krishnagiri.

*[Signature]*  
23/10/24

**Copy to: -**

The Chairman, Tamil Nadu State Environment  
Impact Assessment Authority,  
3<sup>rd</sup> Floor, Panakal Maligai,  
No. 1, Jeenes Road, Saidapet,  
Chennai -15.

சான்று

கிடுஞ்செங்கிளி மாவட்டம், ஆதர் வட்டம், மந்திரிளி  
உள்வட்டம், கோவனப்பள்ளி கிராம புர சாஸ்த 327 / 3,  
அங்குரணம் 1.33.5 அங்குலம் வருகை விடும் புறம்போக்கு  
M/s Victory Rocks -க்கு ரபரம் நிலப்பரப்பில் அனுமதி  
தகவல்கள் வழங்கி கிடத்தை சிற்ற 500 மீட்டர் சிற்றமரம்  
கிராம நத்தமே, கோவனப்பள்ளி, அனுமதி பதிவுகளை,  
அங்குரணம் தளமே, அங்குரணப்பள்ளி உட்கொண்டிருக்கின்ற,  
அங்குரண சிற்றமரம், புறம்போக்கு, உள்வட்டம் அங்குரணம்,  
அங்குரணம் அங்குரணம் அங்குரணம் அங்குரணம் அங்குரணம்  
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அங்குரணம் அங்குரணம் அங்குரணம் அங்குரணம் அங்குரணம்

Gen. Officer  
22/5/2023  
Village Administrative Officer  
85, GOPANAPALLI  
Hosur-Tk, Krishnagiri Dt.

For VICTORY ROCKS

S. R. V.  
Partner



## National Accreditation Board for Education and Training

# Certificate of Accreditation

### Geo Technical Mining Solutions, Dharmapuri

5/1485-3, Salem Main Road, Elakkiyampatty, Dharmapuri, Tamil Nadu

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

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

**Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated January 24, 2024, 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/24/3142 dated Feb 19, 2024. The accreditation needs to be renewed before the expiry date by Geo Technical Mining Solutions, Dharmapuri following due process of assessment.

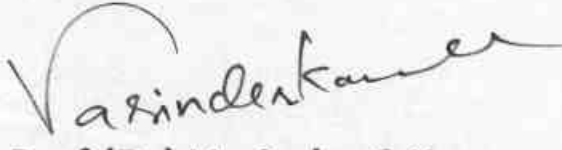
Issue Date  
Feb 19, 2024

Valid up to  
Dec 31, 2026



  
 Mr. Ajay Kumar Jha  
 Sr. Director, NABET

Certificate No.  
 NABET/EIA/23-26/RA 0319

  
 Prof (Dr) Varinder S Kanwar  
 (CEO NABET)

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