



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

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

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

Total Extent of Cluster – 11.09.35 Ha

TVL. A.A. ENTERPRISES COLOUR GRANITE QUARRY

PROJECT PROPONENT	PROPOSED PROJECT	PRODUCTION DETAIL
<p>Tvl. A.A. Enterprises (Managing Partner, S. Ramasubramaniam), No. 93&94 Poombugar Nagar, Valar Nagar, Uthangudi Madurai District – 625 107</p>	<p>Extent: 1.54.0 ha S.F.Nos. 609A(Part) (Bit-5) Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.</p>	<p>Mineable ROM – 29,440m³ Color Granite – 8,832m³ @ 30% Recovery Peak Production – 6,075m³ of ROM Depth – 24m bgl</p>
<p>ToR obtained vide Letter No. SEIAA-TN/F.No. 10161/SEIAA/ToR-1525/2023 Dated :07/08/2023</p>		
<p>Environmental Consultant GEO EXPLORATION AND MINING SOLUTIONS Old No. 260-B, New No. 17, Advaitha Ashram Road, Alagapuram, Salem – 636 004, Tamil Nadu, India Accredited for sector 1 Cat ‘A’, sector 31 & 38 Cat ‘B’ Certificate No : NABET/EIA/2225/RA 0276 Phone: 0427-2431989, Email: ifthiahmed@gmail.com, geothangam@gmail.com Web: www.gemssalem.com</p>  	<p>Laboratory GLOBAL LAB AND CONSULTANCY SERVICES S.F.NO:92/3A2, Geetha Nagar, Alagapuram Pudur, Salem – 636 016, Tamil Nadu, India.</p>	
<p><u>Baseline Monitoring Period</u> Oct 2023-Dec 2023</p>		
<p>JANUARY 2024</p>		

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

PROPOSED QUARRIES				
CODE	Name of the Owner	S.F.Nos & Village	Extent	Status
P1	Tvl.A.A Enterprises Managing Partner Thiru.S.Ramasubramaniam	609A(P) Bit-5 Nagojanahalli Village	1.54.0	ToR Letter No. SEIAA-TN/F.No. 10161/SEIAA/To R-1525/2023 Dated :07/08/2023
P2	KMB Granites and Marble company.	609A(P) Bit-2 Nagojanahalli Village	4.10.0	Mining Plan forwarded to CGM for approval
P3	Mr.D.M.Loganathan	609A(P) Bit-4 Nagojanahalli Village	1.80.0	Mining Plan forwarded to CGM for approval
TOTAL			7.44.0 Ha	
EXISTING QUARRIES				
CODE	Name of the Owner	S.F. Nos & Village	Extent	Period of Lease
E1	Thiru.P.Gandhi	745/1A,2,770/1B2,771 /2 Nagojanahalli Village	1.97.35	EC granted SEIAA-TN/F.No. 7375/1(a)/EC- 4349/2020 Dated :12/09/2020
E2	Thiru.D.Dhanapal	741/8B,742/2,743/2 Nagojanahalli Village	1.68.0	13.05.2015 - 12.05.2035
E3	Thiru.A.Anbarivu	774(P) Nagojanahalli Village	2.02.50	16.05.1995 - 15.05.2005
E4	Thiru.G.Krishnappa Gounder	609A(P) Nagojanahalli Village	2.02.50	09.05.1995- 08.05.2005
E5	Thiru.A.Latha	609A(P) Nagojanahalli Village	0.81.0	16.05.1995 - 15.05.2005
E6	Thiru.B.Venkatesh	609A(P) Nagojanahalli Village	0.81.0	19.05.1995-18.05- 2005
TOTAL			3.65.35 Ha	
ABANDONED/OLD QUARRIES				
CODE	Name of the Owner	S.F. Nos & Village	Extent	Status
-				
Total Cluster Quarries Extent			11.09.35Ha	

TERMS OF REFERENCE (ToR) COMPLIANCE

Tvl.A.A Enterprises

“ToR issued vide **SEIAA-TN/F.No. 10161/SEIAA/ToR-1525/2023 Dated :07/08/2023**”

ADDITIONAL CONDITIONS		
1	The study on impact of the proposed quarrying operations on the surrounding environment which includes water bodies, etc.	Tank 240m SE Tank 490m SE Sendrayampalli Eri-650m NE Thenpennai River-1.8km West Penneswaramadam Eri-6km NW Barur Lake-6.2km SE
2	The proponent shall furnish a comprehensive plan for storing the waste blockage of granite produced from the proposed quarrying operation to ensure sustainable environment.	Noted and agreed
3	The proponent shall furnish a revised EMP budget for entire life of proposed mining.	EMP budget for entire life of proposed mining details in Chapter 10,
Annexure-1		
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.	Mineable reserves ROM – 1,18,020 m ³ Ultimate Depth 98m(L) x 108m (W) x 24m (D) (15m Agl +9m Bgl) Year wise production for first five years ROM – 29,440m ³ Colour Granite – 8,832m ³ @ 30% Recovery Peak Production – 6,075m ³ of ROM Depth – 24m bgl No Illegal mines,
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.	VAO letter stating the details of habitations, temples etc., is enclosed as Annexure
3	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	Structure Map included in the Chapter-3 Socioeconomic environment Report.
4	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the Waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.	The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details are discussed under Chapter No. 4 Tank 240m SE Tank 490m SE

		Sendrayampalli Eri-650m NE Thenpennai River-1.8km West Penneswaramadam Eri-6km NW Barur Lake-6.2km SE
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	Biodiversity study has been carried out by Functional Area Expert by the NABET accredited consultant. The detailed study is given in the Chapter No.3
6	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	Enclosed Annexure DFO Letter Noc No 5135/2023/L
7	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the pp shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	Noted and agreed
8	However, in case of the fresh/virgin quarries, The Proponent shall submit a conceptual 'Slope Stability Assessment' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the proposed working is extended beyond 30 m below ground level.	For the first five years plan period the mining operation is proposed to carry out up to the depth of 24m bgl. It is ensured that the slope stability will be carried out after 30m bgl.
9	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.	Proponent given affidavit stating that the blasting will be carried out under the supervision of Competent person.
10	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	Noted and agreed
11	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.	Noted and agreed. There are two quarries including this proposal in the cluster belongs to the Proponent KMB Granites and Marble company and Mr.D.M. Loganathan
12	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines	Fresh Lease

13	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Fresh Lease
14	Quantify of minerals mined out A. Highest production achieved in any one year B. Detail of approved depth of mining. C. Actual depth of the mining achieved earlier. D. Name of the person already mined in that leases area. E. If EC and CTO already obtained, the copy of the same shall be submitted. F. Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	Mineable reserves ROM – 1,18,020 m ³ Ultimate Depth 98m(L) x 108m (W) x 24m (D) (15m Agl +9m Bgl) Year wise production for first five years ROM – 29,440m ³ Color Granite – 8,832m ³ @ 30% Recovery Peak Production – 6,075m ³ of ROM Depth – 24m bgl
15	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet. Topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Satellite imagery of the project area along with boundary coordinates is given in the Chapter No 2, Figure No.2.2, , Page No.11. Geomorphology of the area is given in Chapter No 2, Figure No.2.9, Page No.21 Land use pattern of the project area is tabulated in the Chapter No.2. Table no 2.3, Pg.No.18 Land use pattern of the Study area is tabulated in the Chapter No.2, Table no 2.3, Pg.No.17.
16	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc..	Noted and agreed
17	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	The area has been fenced and plantation activities carried out within the project site.
18	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.	The details of mineral reserves have been provided in Chapter No 1, Total Mineable Reserves ROM - 1,18,020m ³ Granite Recovery 30% – 35,406m ³ Production for first five years MP period ROM - 29,440m ³ Granite Recovery 30% -8,832m ³ Peak production - 6,075m ³ of ROM
19	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act 1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	Total Employment is 34 Nos inclusive of Competent persons. Mines Manager & Foreman Details are given in the Chapter No.2. Page No.28.
20	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds,	The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details are discussed under Chapter No. 3,

	etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	
21	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic vehicular movement study.	Baseline Data were collected for One Season (Post Monsoon) Oct to Dec 2023 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3
22	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts- Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	The Cumulative impact study due to mining operations is explained in chapter - 7
23	Rain water harvesting management with recharging details along with water balance (both) monsoon & non-monsoon) be submitted.	Noted and agreed
24	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3, Page No. 17.
25	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use. R&R issues, if any, should be provided.	The details of Dump and disposal of Granite waste is discussed in the Chapter No.4 Page No. 96.
26	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
27	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	Part of the working pit will be allowed to collect rain water during the spell of rain will be used for greenbelt development and dust suppression. The Mine Closure Plan is prepared for converting the excavated pit into rain water harvesting structure and serve as water reservoir for the project village during draught season.
28	Impact on local transport infrastructure due to the Project should be indicated.	Transportation details mentioned in Chapter -2

29	A tree survey study shall be carried out (nos., name of the species, age, diameter etc..) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	Details of the trees in the buffer zone given in Chapter No.3.
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	After the completion of mining operation, the part of the quarried-out land will be utilized as temporary storage reservoir. The details are given in the Chapter No.4
31	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	Noted and agreed
32	The purpose of green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, & Tamil Nadu 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.	Noted & agreed. It is proposed to plant a 770nos of trees in the 7.5m safety barrier and village roads.
33	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner.	It is an Existing Lease. No trees within the project site. During the course of mining operation, it is proposed to plant 770 Nos of Trees in the safety barrier and Village roads.
34	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Disaster management Plan details in Chapter-7
35	A Risk Assessment and management Plan shall be prepared and included in the ELA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	A Risk Assessment and management Plan Chapter- 7
36	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health impacts chapter- 10
37	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	No Public Health Implications anticipated due to this project. Details of CER are discussed under Chapter 8, Page No. 148-149.

38	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	It is explained in Chapter -3
39	Details of litigation pending against the project, if any, with direction /Order passed by any Court of Law against the Project should be given.	No, Litigation against the project
40	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Noted and agreed
41	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC. Regional Office, Chennai (or) the concerned DEE/TNPCB.	It is a fresh lease
42	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	The EMP prepared for the life of the mine.
43	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted & agreed.
NORMAL CONDITIONS-Annexure-B		
<i>Cluster Management committee</i>		
1.	Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	Cluster management committee has been formed with mutual agreement with the proponents including Proposed quarry at present are framed.
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..	As per the committee agreement proponents will coordinates for the Greenbelt development, Water sprinkling and tree plantation activities combinedly.
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 formation of committee with list of members has been submitted to the AD mines office, Krishnagiri and the same will be update in every year
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.	As per the committee agreement the blasting frequency will be discussed and carryout by the Mines Manager appointed by the proponents and the same will be updated in the committee minutes. Transport details in chapter-2
5	The committee shall deliberate on risk management plan pertaining to the cluster in a	Details discussed in chapter 7 of Draft EIA report

	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.	Details discussed in chapter 6 of Draft EIA report
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.	Noted & agreed
8	The committee shall furnish the Emergency Management plan within the cluster.	Details discussed in chapter 7.
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Details discussed in chapter 10.
10	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	Noted & agreed
11	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	Detailed discussed in chapter 7.
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 & bio-diversity b) Climate change leading to Droughts, Floods etc. c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature' & Livelihood of the local people. d) Possibilities of water contamination and impact on aquatic ecosystem health' e) Agriculture, Forestry & Traditional practices. f) Hydrothermal/Geothermal effect due to destruction in the Environment' g) Bio-geochemical processes and its foot prints including environmental stress. h) Sediment geochemistry in the surface steams.	Details of Soil health is given in Chapter No 3 and biodiversity is given in Chapter No 3. The project will not cause any significant changes in the climate Climatic changes and GHG are described in Chapter No 4. Details of water contamination and impact on aquatic ecosystem is given in Chapter No 4. Hydrothermal/ Geothermal effects due to destruction in the environment, Bio geochemical process and sediment geo chemistry given in the Chapter No 7.
Agriculture & Agro-Biodiversity		
13	Impact on surrounding agricultural fields around the proposed mining Area.	Detailed discussed in chapter 4.
14	Impact on soil flora & vegetation around the project site.	Detailed discussed in chapter 4.
15	Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	The area is Existing proposed Lease & Few trees present with in lease.
16	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora. fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	Details in Chapter 3

17	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted & agreed
18	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	The project area is dry barren land no agriculture activities carried out. This is Existing/ proposed lease area.
Forest		
19	The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.	Nearest Reserve Forest is Thattakal R.F-1.44km-NE
20	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	The area is surrounded by quarried land and Barren land. Details of flora and fauna studies given in the Chapter No.3.
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	No major trees within the project area
22	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	Noted & agreed. Cauvery North Wildlife Sanctuary- Around 34 km – W Cauvery South Wildlife Sanctuary- Around 35.5km –S.West
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.	The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details are discussed under Chapter No. 3.
24	Erosion Control measures.	Noted & agreed
25	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby villages, water-bodies/ Rivers. & Any ecological fragile areas.	Details in Chapter 2
26	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	Noted & agreed
27	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment by the activities.	Noted & agreed
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.	No Archaeological site near the project area, no proposal for the disposal of mine pit water in the nearby water bodies
29	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil, physical, chemical components and microbial components.	Details in Chapter 3 Soil environment.

30	The Environmental Impact Assessment should study on wetlands, water bodies, rivers, streams, lakes and farmer sites.	Discussed in the Draft EIA/EMP Report in Chapter No.3
Energy		
31	The measures taken to control Noise. Air, Water. Dust Control and steps adopted to efficiently utilize the Energy shall be furnished.	It is explained in Chapter 4
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.	Details of carbon emission and mitigation activities are given in the Chapter No.4
33	The Environmental impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	Discussed in the Draft EIA/EMP Report in Chapter No.3.
Mine Closure Plan		
34	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Details in Chapter 2 mine closure plan
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.	Detailed under Chapter 10
36	The Environmental Impact Assessment should hold detailed study on EMP with budget for green belt development and mine closure plan including disaster management plan.	Project Cost = Rs.3,46,11,000/- CER Cost = Rs 5,00,000/ Disaster Management plan & mine closure plan is discussed in chapter no.4 & 7
Risk Assessment		
37	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	Detailed under Chapter 7
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/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.	Details in Study 7.3 Disaster Management Plan in Chapter -7
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.	VAO certificate is attached as Annexure There is no habitation 300m radius attached Structure map in chapter 3 Socioeconomic environment
40	As per the MoEF& CC office memorandum F.No.22-65/2017-1A.III dated: 30.09.2020 and	Noted and agreed

	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.	Details of carbon emission and mitigation activities are given in the Chapter No.4
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 (Cluster Condition).
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	The applied land for quarrying is a Government/Poramboke Land. Document is enclosed along with Approved Mining Plan as Annexure Volume 1.
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.	Noted & agreed.
4	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Map showing – Project area is superimposed on Satellite imagery is enclosed in Figure No. 2.1 Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3 Surface Features around the project area covering 10km radius – Figure No. 2.2 Geology map of the project area covering 10km radius - Figure No. 2.7. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.8.
5	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	Map showing – Geology map of the project area covering 10km radius - Figure No. 2.7. Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.8.
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	The applied area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government.

	have approval from State land use board or the concerned authority.	
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.	The proponent has framed their Environmental Policy and the same is discussed in the Chapter No 10.1.
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	It is an opencast quarrying operation proposed to operate in Mechanized method. The height and width of the bench will be maintained as 5m with 90 ⁰ bench angles. Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate. Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.
9	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc., should be for the life of the mine / lease period.	Noted & agreed. The study area considered for this study is 10 km radius and all data contained in the EIA report such as waste generation etc., is for the Life of the Mine / lease period.
10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3.
11	Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given	Not Applicable. There is no waste anticipated during this quarry operation. The entire quarried out rough stone will be transported to the needy customers. No Dumps is proposed outside the lease area.
12	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	Not Applicable. The proposed project area is a Government Poramboke land. Nearest Reserve Forest is Thattakal R.F-1.44km-NE

	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.	Approved Mining Plan is enclosed as Annexure Volume 1.
13	Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	Not Applicable. The proposed project area does not involve any Forest Land. Nearest Reserve Forest is Thattakal R.F-1.44km-NE
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	Not Applicable. The project doesn't attract Recognition of Forest Rights Act, 2006.
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	Nearest Reserve Forest is Thattakal R.F-1.44km-NE
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.	Not Applicable. There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 KM of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished	Not Applicable. There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area. Nearest Reserve Forest is Thattakal R.F-1.44km-NE
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	Detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] was carried out and discussed under Chapter No. 3. There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.

	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 w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	Not Applicable. The project doesn't attract The C. R. Z. Notification, 2018.
21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.	Not Applicable. There are no approved habitations within a radius of 300 meters. Therefore, R&R Plan / Compensation details for the Project Affected People (PAP) is not anticipated and Not Applicable for this project.
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	Baseline Data were collected for One Season Oct – Dec 2023 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3.

	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 may also be indicated on the map.	Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD view 9.6.1 Model. Details in Chapter No. 4.
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	Total Water Requirement: 1.2 KLD Discussed under Chapter 2, Table No 2.15 .
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 will be used for greenbelt development and dust suppression. The Mine Closure Plan is 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 are discussed in Chapter 4.
28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	Not Applicable. The ground water table inferred 64-59m below ground level. The ultimate depth of quarry is 37m agl. This proposal of 30 m below ground level will not intersect the ground water table, which is inferred from the hydro-geological carried out at the project site. Discussed under Chapter 3.

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.	Not Applicable. There is no stream, seasonal or other water bodies passing within the project area. Therefore, no modification/ 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 ground water table inferred 62-57m below ground level. The ultimate depth of quarry is 24m 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 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.	Greenbelt Development Plan is discussed under Chapter 4.
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.	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 in Chapter 2.
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease and the same has been discussed in the Chapter No.2 .
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.	Discussed under Chapter 2. Mine Closure Plan is a part of Approved Mining Plan enclosed as Annexure Volume – 1.
35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health Impacts of the project and preventive measures are detailed under Chapter 4, Page No.127.

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.	No Public Health Implications anticipated due to this project. Details of CER and CSR are discussed under Chapter 8.
37	Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	No Negative Impact on Socio Economic Environment on the Study Area is anticipated and this project shall benefit the Socio-Economic Environment by ways of employment for 34 people directly and 50 people indirectly. Details in Chapter 2.
38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	Detailed Environment Management Plan for the project to mitigate the anticipated impacts described under Chapter 4 is discussed under Chapter 10.
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 updated in the final EIA/AMP 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 clearly spelt out.	Project Cost is Rs.3,46,11,000/- CER Cost is Rs 5,00,000/-
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Details in Chapter 7.
43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Details in Chapter 8.
44	Besides the above, the below mentioned general points are also to be followed: -	
a	Executive Summary of the EIA/EMP Report	Enclosed as separate booklet.
b	All documents to be properly referenced with index and continuous page numbering.	All the documents are properly referenced with index and continuous page numbering.
c	Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.	List of Tables and source of the data collected are 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	Baseline monitoring reports are enclosed with This report in Chapter 3.

	reports should be available during appraisal of the Project	Original Baseline monitoring reports will be submitted in the final EIA report during appraisal.
e	Where the documents provided are in a language other than English, an English translation should be provided.	Not Applicable.
f	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Will be enclosed along with Final EIA EMP Report.
g	While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA. II(I) Dated: 4th August, 2009, which are available on the website of this Ministry, should be followed.	Noted & agreed. Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IA. II (I) Dated: 4th August, 2009 are followed.
h	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation	Noted & agreed.
i	As per the circular no. J-11011/618/2010-IA. II(I) Dated: 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.	Not Applicable.
j	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	Surface Plan – Figure No. 2.2. Geological Plan – Figure No 2.9. Working Plan – Figure No 2.9. Closure Plan – Figure No.2.10.

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CHAPTER – 1: INTRODUCTION

1.0 Preamble

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

This EIA report is prepared by considering Cumulative load of all proposed & existing quarries around Tvl. A.A. Enterprises Colour Granite Quarry (Total Cluster 11.09.35Ha) lease at S.F.Nos. 609A(P) Bit-5 over an extent of 1.54.0 ha in Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu State, consisting of 3 (THREE) Proposed (including this proposal) and 2 Existing Quarries with total extent of Cluster of. 11.09.35 ha. Cluster area calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016.

This EIA Report is prepared in compliance with ToR obtained Letter No. SEIAA-TN/F.No. 10161/SEIAA/ToR-1525/2023 Dated :07/08/2023

The Baseline Monitoring study has been carried out during the period of Post monsoon season Oct 2023 to Dec 2023 and this EIA / EMP report is prepared for considering cumulative impacts arising out of these projects, the Cumulative Environmental Impact Assessment study is undertaken, which is followed by preparation of a detailed Environmental Management Plan (EMP) individually to minimize those adverse impacts.

1.1 Purpose of the Report

The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments as per Gazette Notification S.O. 3977 (E) of 14th August 2018, Mining Projects are classified under two categories i.e., A (> 100 Ha) and B (\leq 100 Ha), and Schematic Presentation of Requirements on Environmental Clearance of Minor Minerals including cluster situation in Appendix–XI.

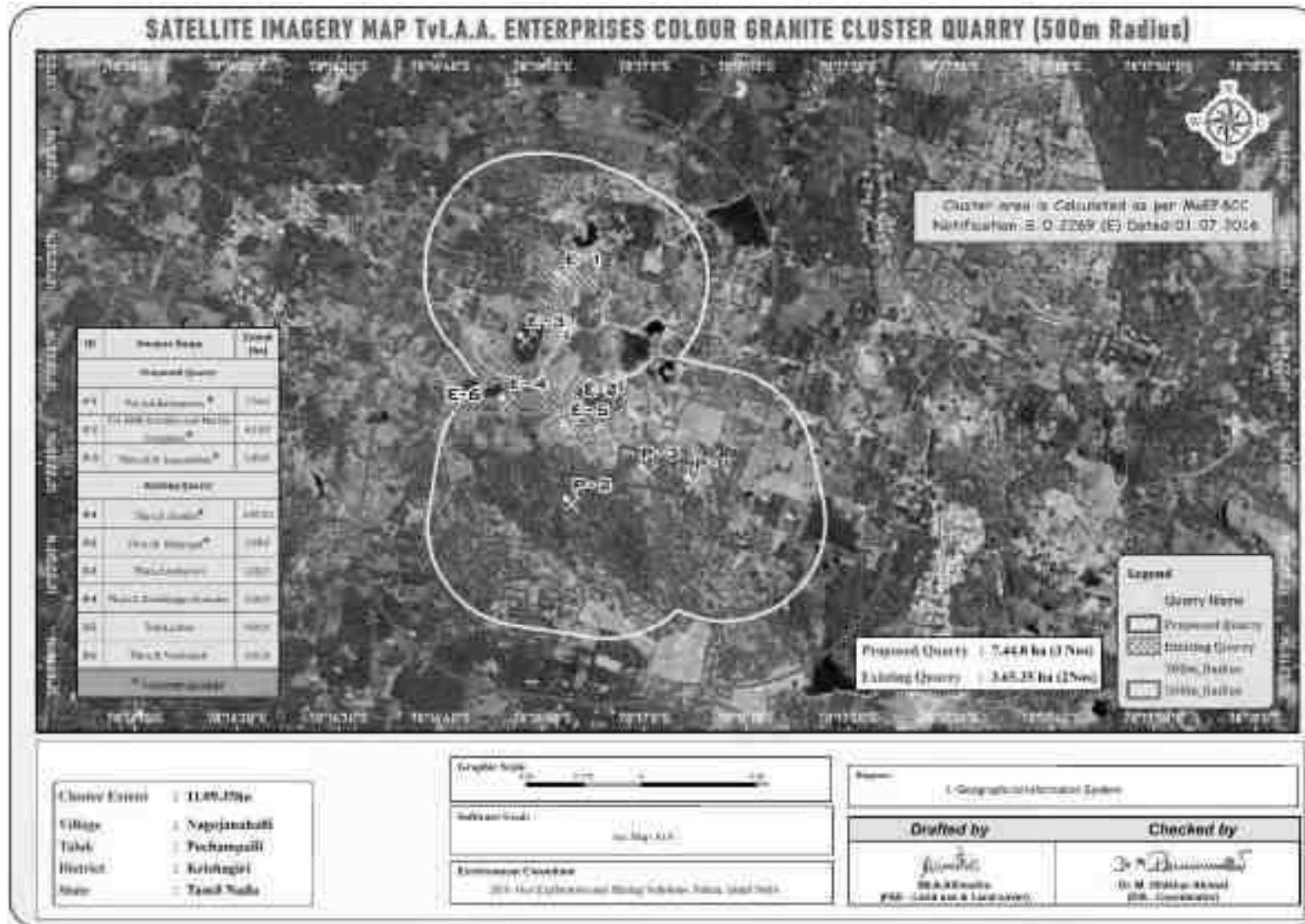
Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B- 1 and appraised by SEAC/ SEIAA as well as for cluster situation.

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

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 submitted vide Ref: Nil, Dated: 09.06.2021.

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

Figure1.0: Cluster Quarries Map



1.2 Identification of Project and Project Proponent

1.2.1 Identification of Project –

- The Project area is located in S.F. Nos 609A(P) Bit-5, Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.
- Proponent applied for Colour Granite quarry lease Dated 07.11.2020.
- the precise area communication has been granted as per Govt. Letter No.903/MME.2/ 2021-1, Dated: 26.02.2021 for a period of 20 years.
- Mining plan was approved by the Director of Geology and Mining, Guindy, Chennai Vide Rc. No. 6945/MM4/2021, dated: 18.04.2023

1.2.2 Identification of Project Proponent

Name of the Project Proponent : Tvl. A.A. Enterprises
 Address : No. 93&94 Poombugar Nagar, Valar Nagar, Uthangudi
 Madurai District
 State : Tamil Nadu
 Pin code : 625107
 Mobile No : +91 96554 25859 and 96552 95859

Tvl. A.A. Enterprises Colour Granite, is an Individual, S. Ramasubramaniam is the Managing Partner of authorized person for signing all the documents on behalf of the company.

Table 1.1: List of Partners

S.No	Name	Designation
1	Thiru.S. Ramasubramaniam s/o.Subbiah Amabalam	Managing Partner
2	Thiru.Raja Sundareshwaran S/o. M.V.Natesan	Partner

Source: Approved Mining Plan

1.3 Brief Description of the Project

1.3.1 Nature and Size of the Project

The quarrying operation is proposed to be carried out by Opencast Mechanized Mining method with 5.0m bench height and 5.0m bench width by deploying Hydraulic Excavator, Eco-friendly Diamond Wire Saw Cutting and minor amount of blasting only for removal of overburden and weathered portions.

On the basis of available reserves the life of the mine is computed and approved as 20 Years.

Proposed production for the Mining Plan Period (5 years) is described below–

Proposed Project

Mineable ROM	=	1,18,020 m³
Total Mineable Recoverable Reserves of Granite @ 30%	=	35,406m ³
Average Production per year @ 30%	=	8,832m ³ /5 Years = 1,766 m ³
Estimated Life of the quarry	=	35,406m ³ / 1,766 m ³
Life of the quarry	=	20 Years

Table 1.2: Resources and Reserves of Project

Description	ROM in m ³	Granite recovery @30 % in m ³	Granite waste @70% recovery	Weathers Rock	Total waste	Top Soil in m ³
Geological Resources	2,88,400	86,520	2,01,880	50,732	2,52,612	11,680
Mineable Reserves	1,18,020	35,406	82,614	34,888	1,17,502	7,840
Year wise Production for Five years	29,440	8,832	20,608	23,268	43,876	4,040

Source: Approved Mining Plan

Table 1.3: Salient Features of the Proposed Project

Name of the Quarry	Tvl. A.A. Enterprises	
Lease period	20 years	
Mining Lease area	1.54.0 Ha	
Location	609A(P) Bit-5 Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamilnadu.	
Mining Plan Period	5 Years	
Life of the Mine	20 years	
Existing Depth	NIL	
Previous lease particulars	It is a government land	
Proposed Depth for five years plan period	24m	
Ultimate Depth	98m(L) x 108m (W) x 24m (D) (15m Agl +9m Bgl)	
Toposheet No	57 L/03 & 57L/07	
Latitude between	12°22'24.13"N to 12°22'30.18"N	
Longitude between	78°17'02.95"E to 77°17'07.81"E	
Topography	The area is situated in an elevated terrain Altitude – 465m – 480m above from MSL. Slope – towards Eastern side	
Water table	62-57m	
Machinery proposed	Jackhammer	6
	Compressor	2
	Hydraulic/Crawler crane	1
	Excavator	1
	Tipper	2
	Diesel Generator	1
	Diamond wire saw	1
Proposed manpower deployment	34	
A. Project cost	Rs.3,46,11,000/-	
B.EMP Cost	Rs. 3,80,800/-	
Total Project cost	Rs.3,49,91,000/-	
CER cost	Rs. 5,00,000/-	
Nearest Habitation	560m-E	
Nearest R.F	Thattakal R.F-1.44km-NE	
Nearest Wildlife sanctuary	Around 34 km – W (Cauvery North Wildlife Sanctuary) Around 35.5km –S.West (Cauvery South Wildlife Sanctuary)	

1.3.2 Location of the Project

- The area is located in S.F.Nos. 609A(P) Bit-5 Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamilnadu.
- The entire quarry lease area falls in the Government land, the area is situated in an elevated terrain.
- The Altitude of the area is ranges from **465m – 480m above from MSL**
- The area is mentioned in GSI Topo sheet No. **57 L/03 & 57L/07**
- The Latitude between of **12°22'24.13"N to 12°22'30.18"N**
- The Longitude between of **78°17'02.95"E to 77°17'07.81"E** on WGS 1984 datum.

Figure 1.1: Key Map Showing the Location of the Project Site

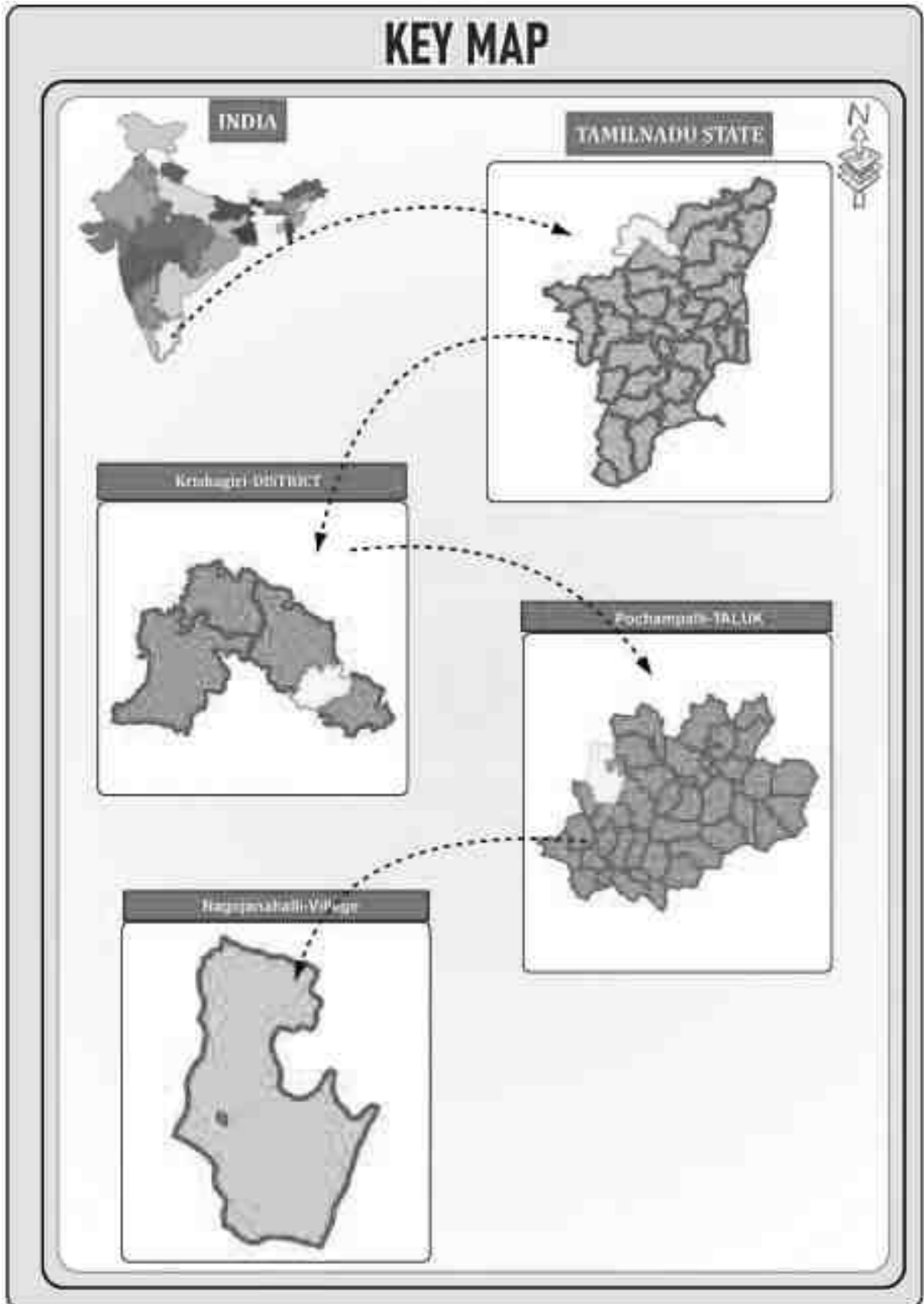


Figure 1.2: Toposheet Map of the Study Area 10 Km Radius

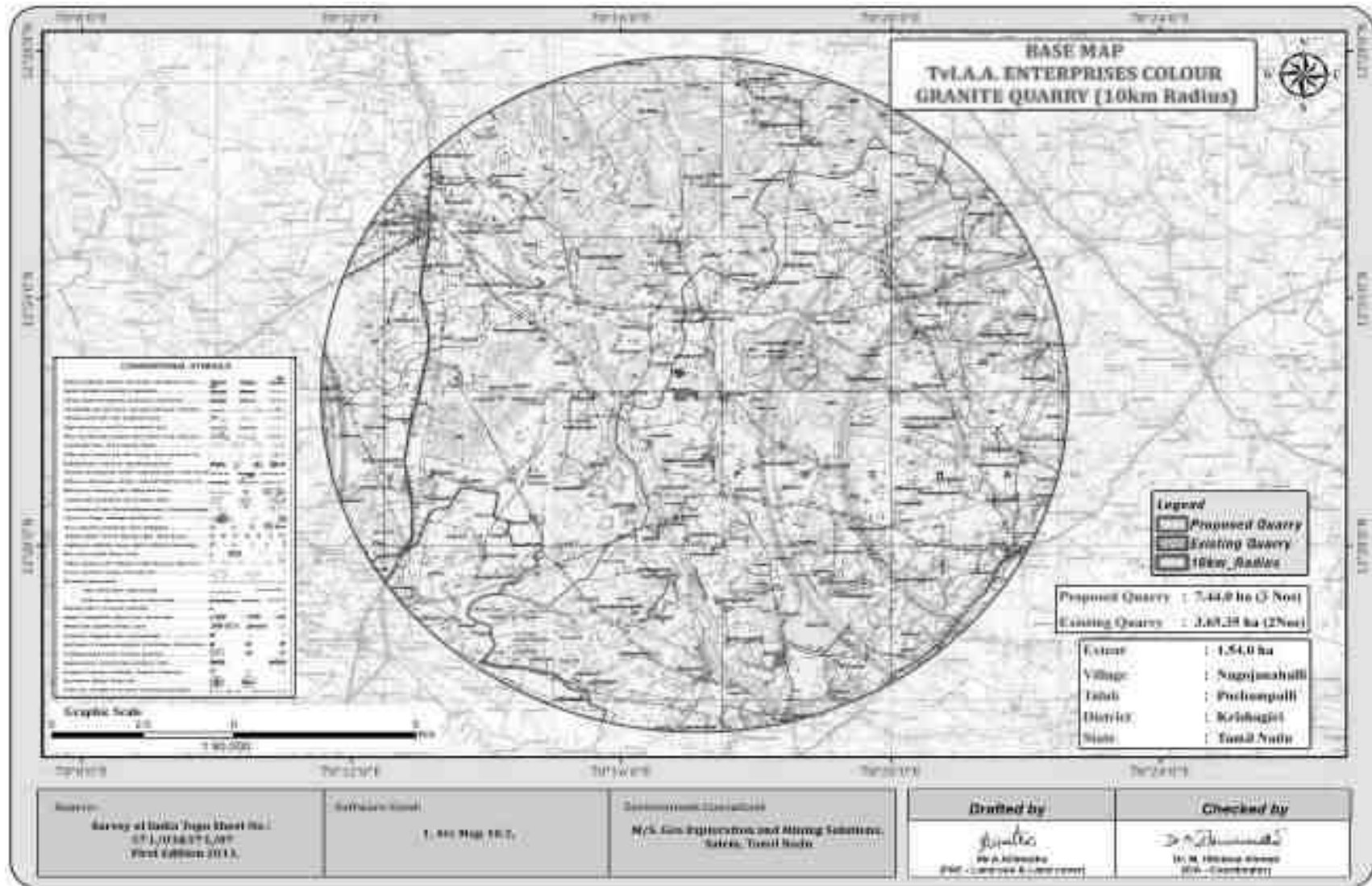
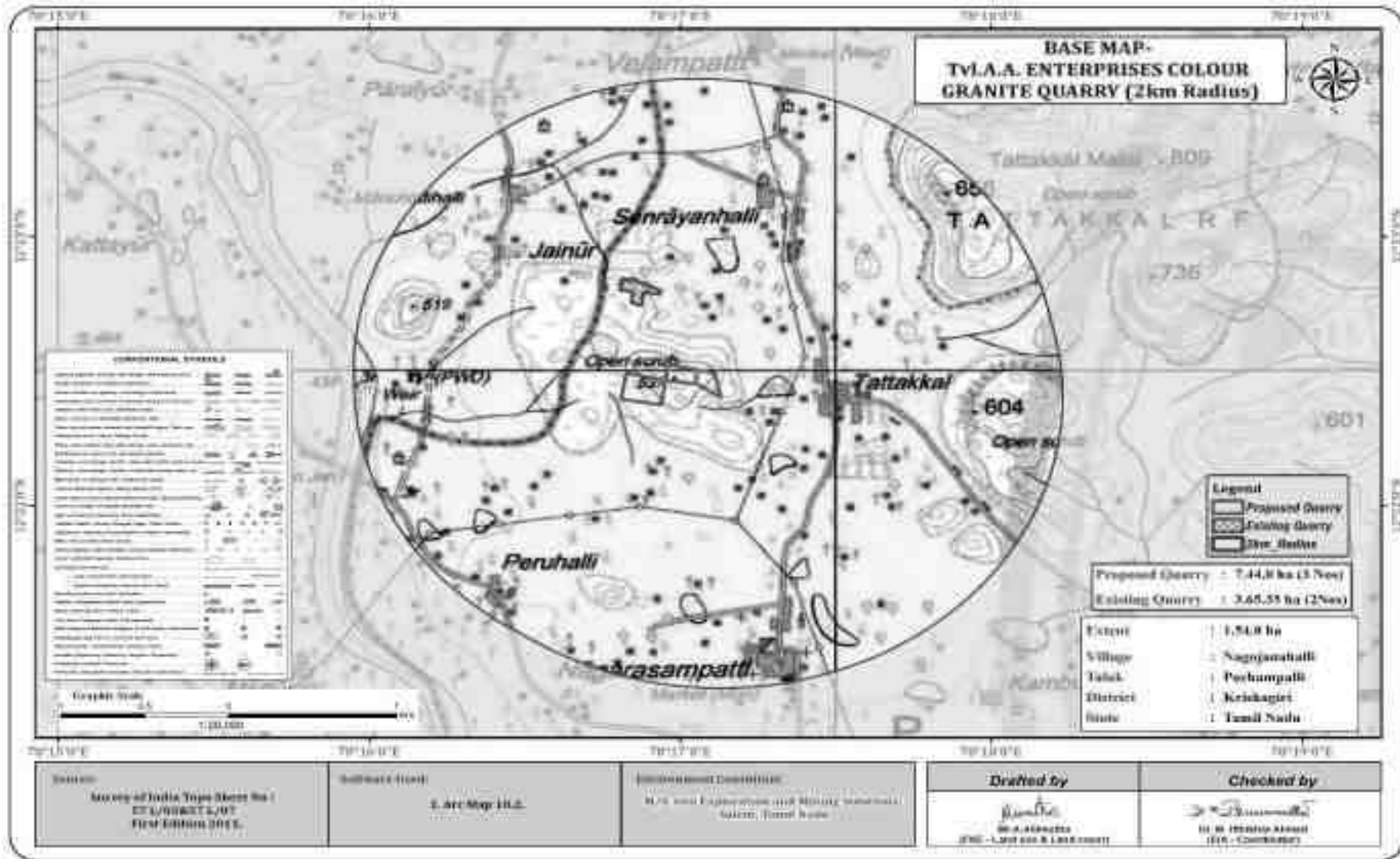


Figure 1.3: Toposheet Map of the Study Area 10 Km Radius



1.4 Environmental Clearance

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

1. Screening,
2. Scoping
3. Public consultation &
4. Appraisal

SCREENING –

- The proponent applied for Granite Quarry Lease, Dated 07.11.2020.
- The precise area communication has been granted as per Govt. Letter No.903/MME.2/ 2021-1, Dated: 26.02.2021 for a period of 20 years.
- Mining plan was approved by the Director of Geology and Mining, Guindy, Chennai Vide Rc. No. 6945/MM4/2021, dated: 18.04.2023
- Proponent applied for ToR to get Environmental Clearance vide online Proposal No. SIA/TN/MIN/434043/2023 Dated: 20.06.2023.

SCOPING –

- The proposal was placed in 394st SEAC meeting held on 21.07.2023 and the committee recommended for issue of ToR.
- The proposal was considered in 644th SEIAA meeting held on 07.08.2023 and issued ToR vide Letter No. SEIAA-TN/F.No. 10161/SEIAA/ToR-1525/2023 Dated :07/08/2023.

PUBLIC CONSULTATION –

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

APPRAISAL –

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

The report has been prepared using the following references:

- Guidance Manual of Environmental Impact Assessment for Mining of Minerals, Ministry of Environment and Forests, February, 2010
- EIA Notification, 14th September, 2006
- ToR vide **ToR Letter No. SEIAA-TN/F.No. 10161/SEIAA/ToR-1525/2023 Dated :07/08/2023.**
- Approved Mining Plan of this project
- In addition, other relevant standards for individual activities such as Sampling and Testing of Environmental attributes have been followed.

1.5 Post Environment Clearance Monitoring

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

1.6 Generic Structure of EIA Document

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

1.7 Scope of the Study

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual lease. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during **the Post monsoon season for Oct 2023 to Dec 2023** for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suggest suitable mitigation measures for likely adverse impacts due to the proposed project.

Table 1.4: Environment Attributes

Sl.No.	Attributes	Parameters	Source and Frequency
1	Ambient Air Quality	PM ₁₀ , PM _{2.5} , SO ₂ , NO ₂	Continuous 24-hourly samples twice a week for three months at 7 locations (1 Core & 7 Buffer)
2	Meteorology	Wind speed and direction, temperature, relative humidity and rainfall	Near project site continuous for three months with hourly recording and from secondary sources of IMD station
3	Water quality	Physical, Chemical and Bacteriological parameters	Grab samples were collected at 4 ground water and 2 surface water locations once during study period.
4	Ecology	Existing terrestrial and aquatic flora and fauna within 10 km radius circle.	Limited primary survey and secondary data was
5	Noise levels	Noise levels in dB(A)	7 locations – data monitored once for 24 hours during EIA study
6	Soil Characteristics	Physical and Chemical Parameters	Once at 6 locations during study period
7	Land use	Existing land use for different categories	Based on Survey of India topographical sheet and satellite imagery and primary survey.
8	Socio-Economic Aspects	Socio-economic and demographic characteristics, worker characteristics	Based on primary survey and secondary sources data like census of India 2011.
9	Hydrology	Drainage pattern of the area, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected from secondary sources as well as hydro-geology study report prepared.
10	Risk assessment and Disaster Management Plan	Identify areas where disaster can occur by fires and explosions and release of toxic substances	Based on the findings of Risk analysis done for the risk associated with mining.

Source: Onsite Monitoring Data/Sampling by Laboratories

The data has been collected as per the requirement of the ToR issued by SEIAA – TN.

1.7.1 Regulatory Compliance & Applicable Laws/Regulations

- Application for Quarrying Lease as per Tamil Nadu Minor Mineral Concession Rules, 1959
- Obtained Precise Area Communication Letter as per Tamil Nadu Minor Mineral Concession Rules, 1959 for Preparation of Mining Plan and obtaining Environmental Clearance
- The Mining Plan of Granite quarry has been approved under Rule 41 & 42 as amended of Tamil Nadu Minor Mineral Concession Rules, 1959
- ToR vide **ToR Letter No.SEIAA-TN/F.No. 10161/SEIAA/ToR-1525/2023 Dated :07/08/2023.**

2. PROJECT DESCRIPTION

2.0 General

Proposed Quarry in Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District and Tamil Nadu State falls under Cluster Situation as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016 and the total extent of cluster is 11.09.35 ha consisting of five quarries. As the extent of cluster is more than 5 ha, the proposal falls under B1 Category as per the Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018, and requirement for EIA, EMP and Public Consultation for obtaining Environmental Clearance.

2.1 Description of the Project

The Proposed project is located in S.F. Nos 609A(P) Bit-5 Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District and Tamil Nadu State. The precise area communication has been granted as per Govt. Letter No.903/MME.2/ 2021-1, Dated: 26.02.2021, the mining plan has been prepared and got approved Director of Geology and Mining Guindy, Chennai, vide Rc. No. 6945/MM4/2021, dated: 18.04.2023.

The area over an extent of 1.54.0 Ha in S.F. No: 609A(P) Bit-5 successful bidder of **Tvl.A.A Enterprises**, is a Partnership firm, The partnership deed has Executed on 02.08.2020 under the Indian Partnership act, 1932 with two partners, the details of Partners is given below.

S.No	Name	Designation
1	Thiru.S. Ramasubramaniam s/o.Subbiah Amabalam	Managing Partner
2	Thiru.Raja Sundareshwaran S/o. M.V.Natesan	Partner

Thiru.S. Ramasubramaniam is the Managing Partner and he is an authorised person for signing all the documents, Lease period of 20 years.

Colour Granite quarry operation will be carried out by opencast mechanized method involving Eco-friendly Diamond Wire Saw Cutting, Heavy earth moving machineries like Excavators Trucks for Granite exploitation. Shot hole drilling with controlled blasting using slurry explosives for removal of overburden and Weathered portions during initial stage of quarry operation.

2.2 Location of the Project

- The area is located in **S.F.Nos. 61/3 of Karandapalli Village, Denkanikottai Taluk, Krishnagiri District, Tamilnadu.**
- The entire quarry lease area falls in the Patta land, the area is situated in an elevated terrain.
- The Altitude of the area is ranges from **465m – 480m above from MSL**
- The area is mentioned in GSI Topo sheet No. **57-L/07**
- The Latitude between of **12°22'24.13"N to 12°22'30.18"N**
- The Longitude between of **78°17'02.95"E to 78°17'07.81"E** on WGS 1984 datum.

Table 2.1: Site Connectivity to the Project Area

Nearest Roadway	NH-44- Kanniyakumari - Bengaluru – 7.0km-W SH-60- Tirupattur – Dharmapuri – 10.0km-SE
Nearest Village	N.Thattakal – 633m-E
Nearest Town	Kaveripattinam - 8.0km - NW
Nearest Railway Station	Kallavi Railway Station - 22.0km - SE
Nearest Airport	Salem Airport - 80.0km - SW
Seaport	Chennai 295 km North East

Source: PFR, Survey of India Toposheet

Table 2.2: Boundary Co-Ordinates of Proposed Project

S.No	Latitude	Longitude
1	12°22'24.13" N	78°17'07.81"E
2	12°22'27.08" N	78°17'03.05"E
3	12°22'30.18" N	78°17'02.95"E
4	12°22'29.43" N	78°17'06.64"E
Datum: UTM-WGS84, Zone 44 North		

Figure 2.1: PHOTOGRAPHS OF THE PROJECT AREA



Figure 2.1A: FENCING PHOTOGRAPHS



Figure 2.2: Google Image Showing Project Area

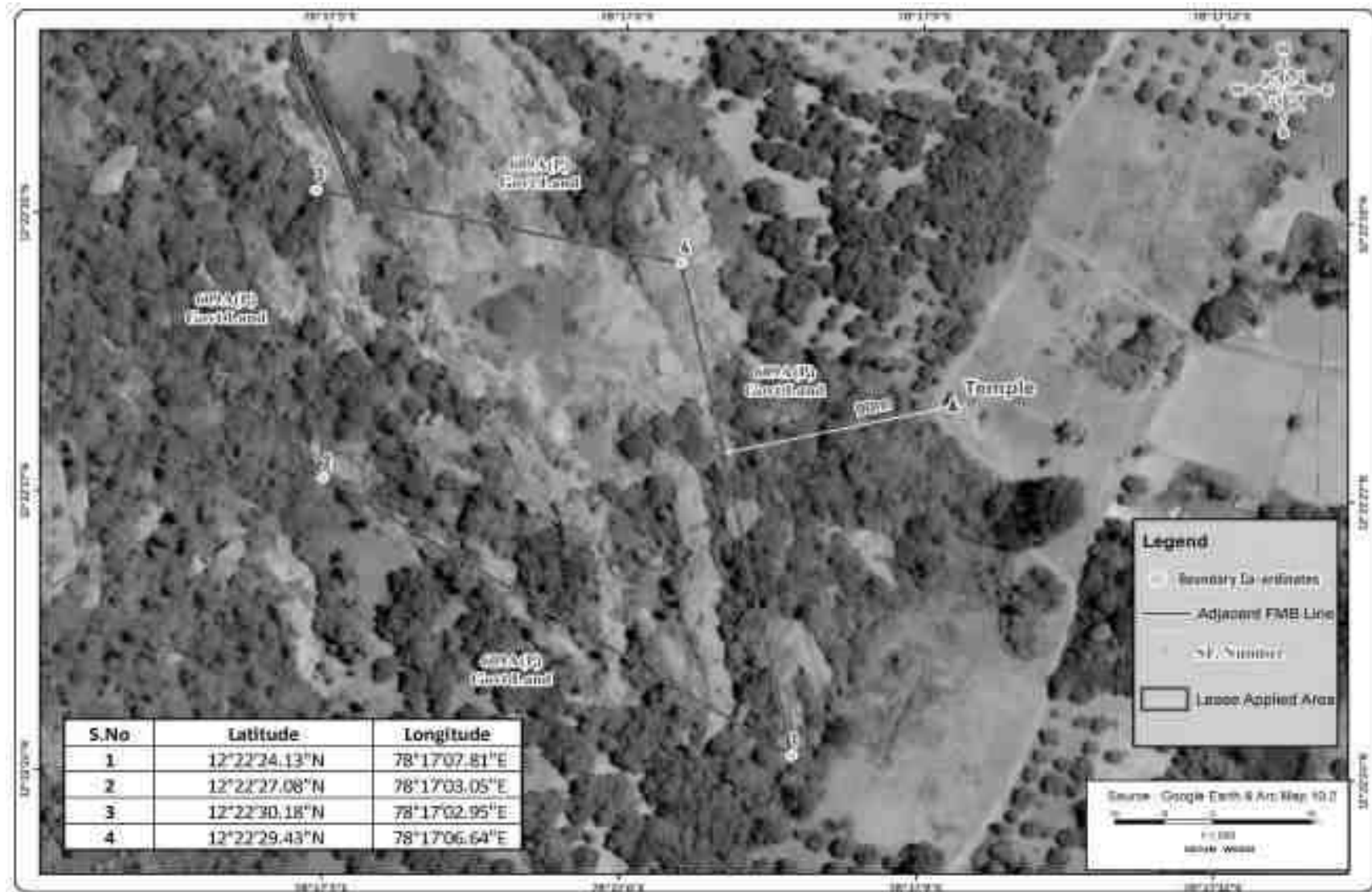


Figure 2.3: Quarry Lease Plan & Surface Plan



FIGURE 2.4: VILLAGE MAP SUPERIMPOSED ON GOOGLE EARTH IMAGE

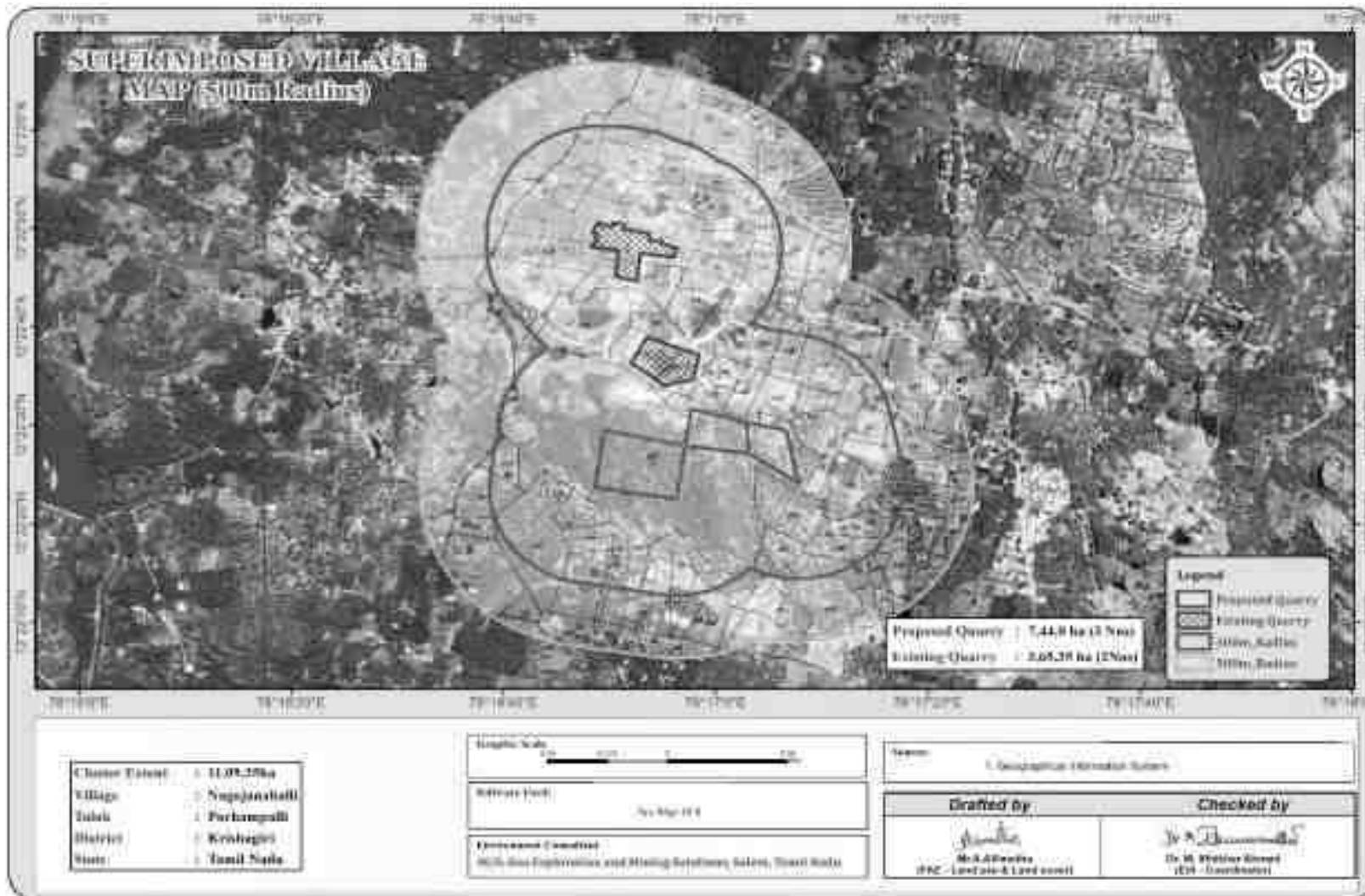


Figure 2.5: Image Showing Surface Features Around 10 Km Radius

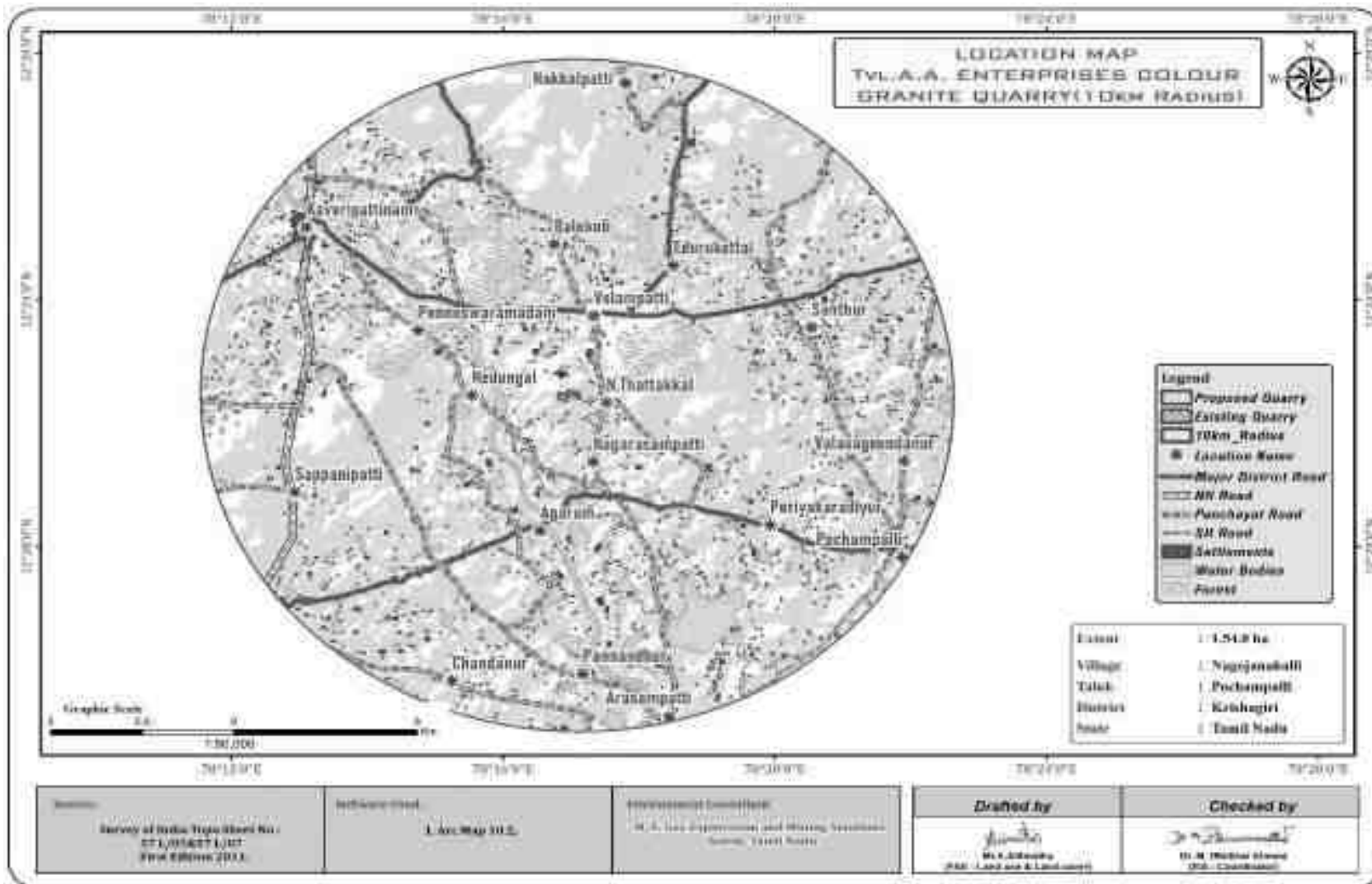


Figure 2.6: Image Showing Surface Features Around 5km Radius

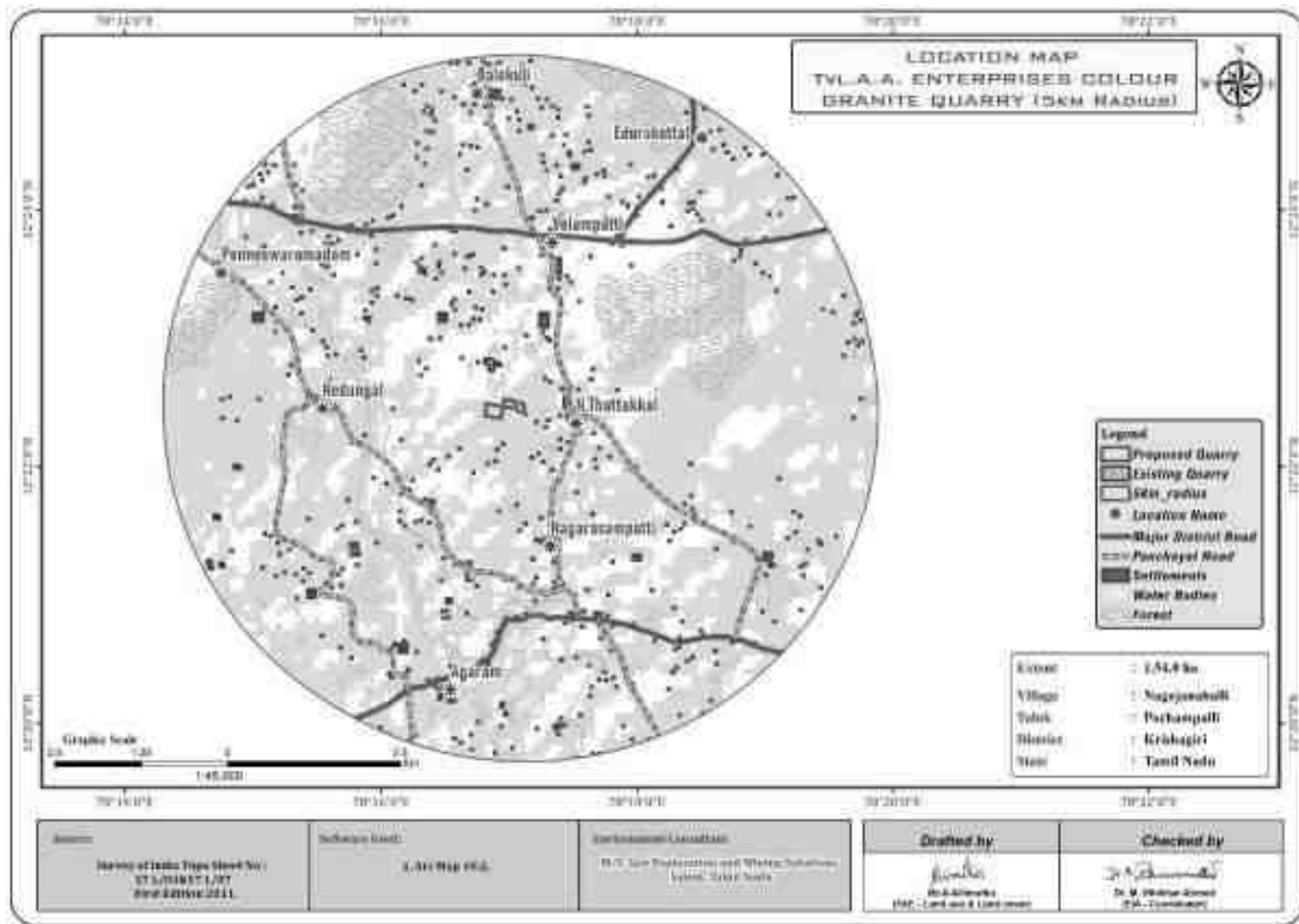
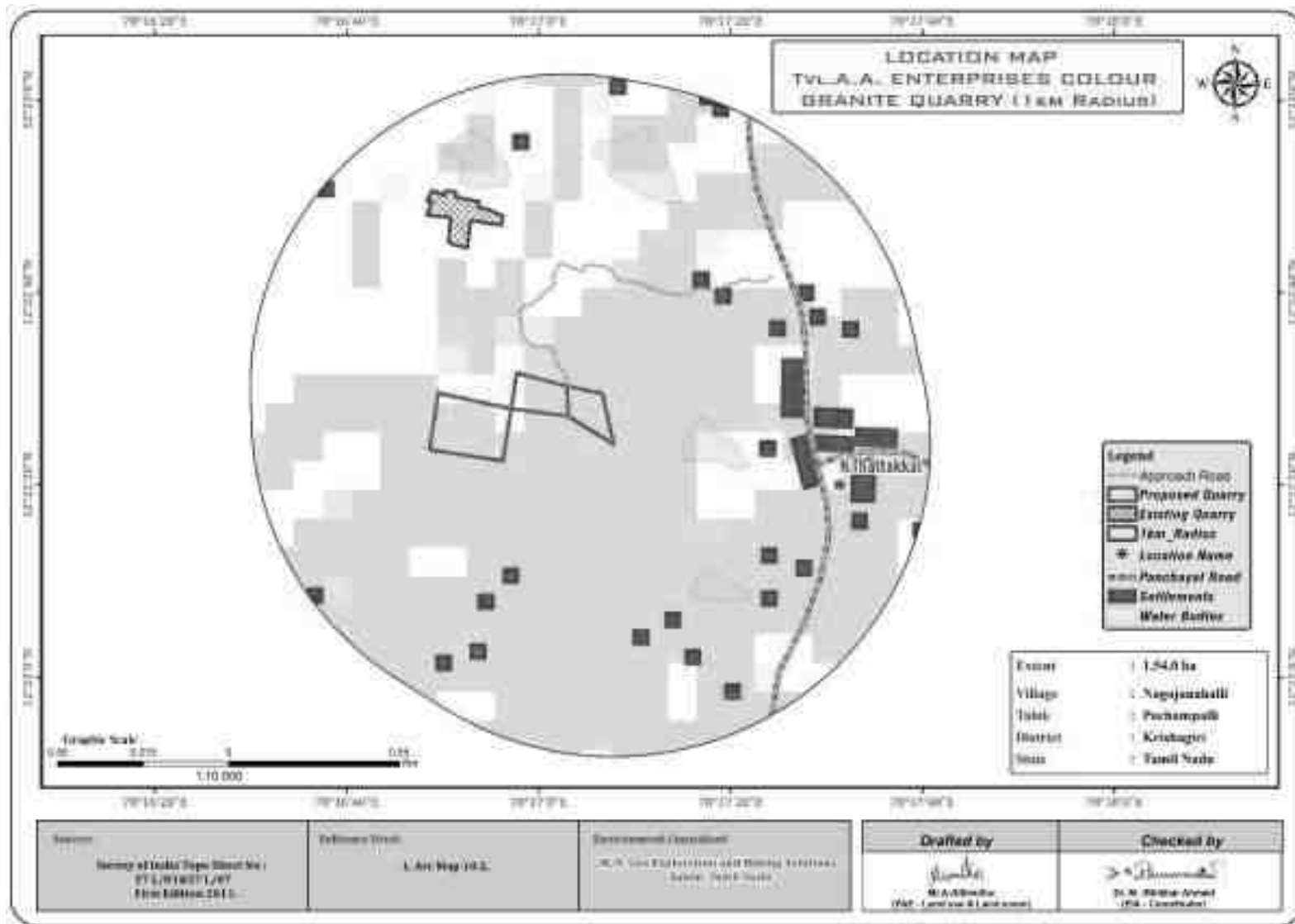


Figure 2.7: Image Showing Surface Features Around 1 Km Radius



2.2.1 Project Area

- The Topography of the Proposed Project is undulated topography, with Granite outcrops, which is site specific, Non – Captive use, opencast Mechanized quarry.
- There is No beneficiation or processing proposed inside the project area.
- Elevation is 876m-892m above from MSL, showing gentle gradient towards Northwest
- There is no forest land involved in the proposed project area and the area is devoid of major vegetation.

Table 2.3: Land Use Pattern of the Proposed Project

Description	Present area in Ha	Area to be required during the present plan period (ha)	Area at the end of Life of Quarry (Ha)
Area under quarry	Nil	0.68.6	1.03.8
Waste dump	Nil	0.31.6	Backfilled
Infrastructure	Nil	0.02.0	0.02.0
Roads	Nil	0.01.0	0.02.0
Green Belt	Nil	0.17.7	0.46.0
Stocking blocks	1.54.0	0.33.1	0.00.2
Total	1.54.0	1.54.0	1.54.0

Source: Approved Mining plan

2.2.2 Size or Magnitude of Operation

Table 2.4: Operational Details

Description	Details
Geological Resources ROM	2,88,400
Granite Recovery (30 % in m ³)	86,520
Granite Waste (70 % in m ³)	2,01,880
Weathered rock(m ³)	50,732
Top Soil in m ³	11,680
Mineable Reserves ROM	1,18,020
Granite Recovery (30 % in m ³)	35,406
Granite Waste (70 % in m ³)	82,614
Weathered rock (m ³)	34,888
Top Soil in m ³	7,840
Proposed Production for five years plan period ROM	29,440
Granite Recovery (30% in m ³)	8,832
Granite Waste (70 % in m ³)	20,608
Weathered rock(m ³)	23,268
Top Soil in m ³	4,040
Number of Working Days	300
Production of ROM per day in five-year plan period	20
Production of Granite per day	6
Total Waste per day (Granite waste+ Weathered Rock)	29

Source: Approved Mining Plan

2.3 Geology

2.3.1 Regional Geology

The hard rock terrain of Archaean to Late Proterozoic comprises of predominantly Granite, Gneiss, Charnockite group of rocks and their magmatic derivatives, supracrustal sequences intruded by ultramafic complexes, basic dykes, granites.

The northern part of Tamilnadu, north of Noyil – Cauvery River is characterized by the occurrences of a number of Dolerite dykes in contrast to the areas south of Noyil – Cauvery River where the dykes are absent. The dolerite dykes in general trending is in WNW- ESE and NNE – SSE directions and rarely in N-S and NNW – SSE directions.

In central part of Tamil Nadu, ENE – WNW to NE- SW trending dolerite dykes (Black granite) are seen transecting the Charnockite in Kalrayan & Kolli Hills. Palaeo magnetic studies of some of these dykes indicate Mid-Proterozoic age.

Due to emplacement of Dolerite Dykes along narrower plains of weakness, the rock on solidification develops cracks and fractures mostly along the contacts with the country rocks. The dolerite dykes are mostly emplaced as ‘swarms’ in an area.

Granites were formed from molten rock referred to as “Magma” formed at great depths within the crust of the earth. During the cooling process, some of the minerals grow into larger crystals of colours peculiar to those minerals or get aligned along certain preferred directions giving rise to beautiful colors and patterns. Such rocks that were formed at great depths during the Archaean age are now exposed at the surface of the earth as a result of the combined actions of wind, air, sun and water and weathering and denudation over the past several million years.

The granitic group ranges in composition from granite, through grandiorities to adamellite, augite-diorite, monzonite, etc., and contains inclusions of hornblende rocks. To what extent they represent intrusive of different ages is yet to be determined, but their very complex nature is unquestionable since they include composite gneisses, migmatites, granitised older crystalline rocks and true granites with their aplitic and quartz vein systems.

The black granite is a basic igneous rock formed from ultramafic magmas by partial melting. The composition of the rock is plagioclase (Labradorite) and pyroxene (Augite). The texture is ophitic i.e., large oligoclase of Augite enclose the laths of plagioclase feldspar. The colour is termed as Leucocratic. Free silica is rare or absent. The rock is holocrystalline, black colour, hardness-5 to 6, prismatic cleavage.

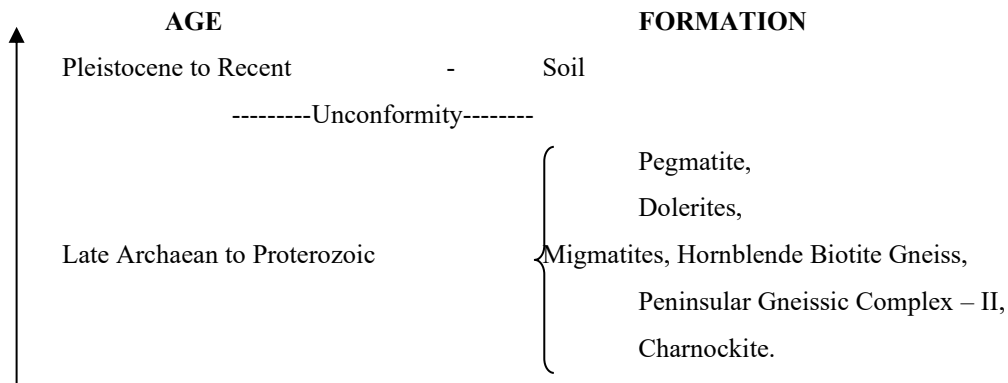
Geological succession of Krishnagiri District:

Krishnagiri district is underlain by hard Crystalline rocks of Archaean age comprising of various rock types such as Gneiss, Charnockite, Migmatites, etc. The Gneissic type of Crystalline formation is found in the North and North Eastern part of the District Shoolagiri, Hosur, Mattur and Soolamalai areas covered by Granitic Gneiss (Migmatite).

In the Krishnagiri district of Tamil Nadu is characterized by the occurrences of Numerous Dolerite dykes. The dolerite dykes are general trending in NNW- SSE direction and rarely in NNE– SSW directions.

Order of superposition: -

STRUCTURAL SETTINGS OF THE AREA



2.3.3. Geology of the lease applied area

The black granite is clearly visible right from the existing quarry pits and detached boulders are scattered within the lease area and remaining area concealed under reddish gravelly soil with an average thickness of 1m and followed by fresh black granite. The Granite Gneiss forms the country rock of the area with trending of NE-SW with almost vertical dipping and “Black Granite” (Dolerite) intruded between the batholithic formation of pre-existing country rock of Granite Gneiss discordantly with trending of East – West with Vertical dipping. The width of the black granite is varying from 22m to 68m which stretches about the entire area (Please refer Plate No-III and IV of Approved Mining Plan). The black granite is clearly exposed in the existing quarry pit and few

small detached boulders are scattered with linear strike direction of the dyke with spheroidal weathering and cuboidal and oblique joints.

The black granite (Dolerite dyke) rock is sub-ophitic, brownish black in color, equigranular, fine to medium grained texture. The color of the rock changes depending upon the texture of the rock. The Dykes is fine grained at the contact of country rock. The Dolerite is composed of laths of plagioclase embedded in the plates of Augite (Ophitic texture), Apatite, magnetite and pyrite forms the secondary mineral.

Strike, dip and oblique joints are observed at the surface level which is likely to decrease in deep seated condition. The recovery of black granite is 15%, taking in to consideration of the above geological factors, an average recovery of 15% up to 31m depth (1m Topsoil + 30m Black granite) has been computed as economically viable at present market scenario. This mining plan is discussed based on 15% recovery factor. If there is considerable increase or decrease in the recovery factor a modified mining plan will be prepared and will be submitted to relevant authorities for subsequent clearance and approval.

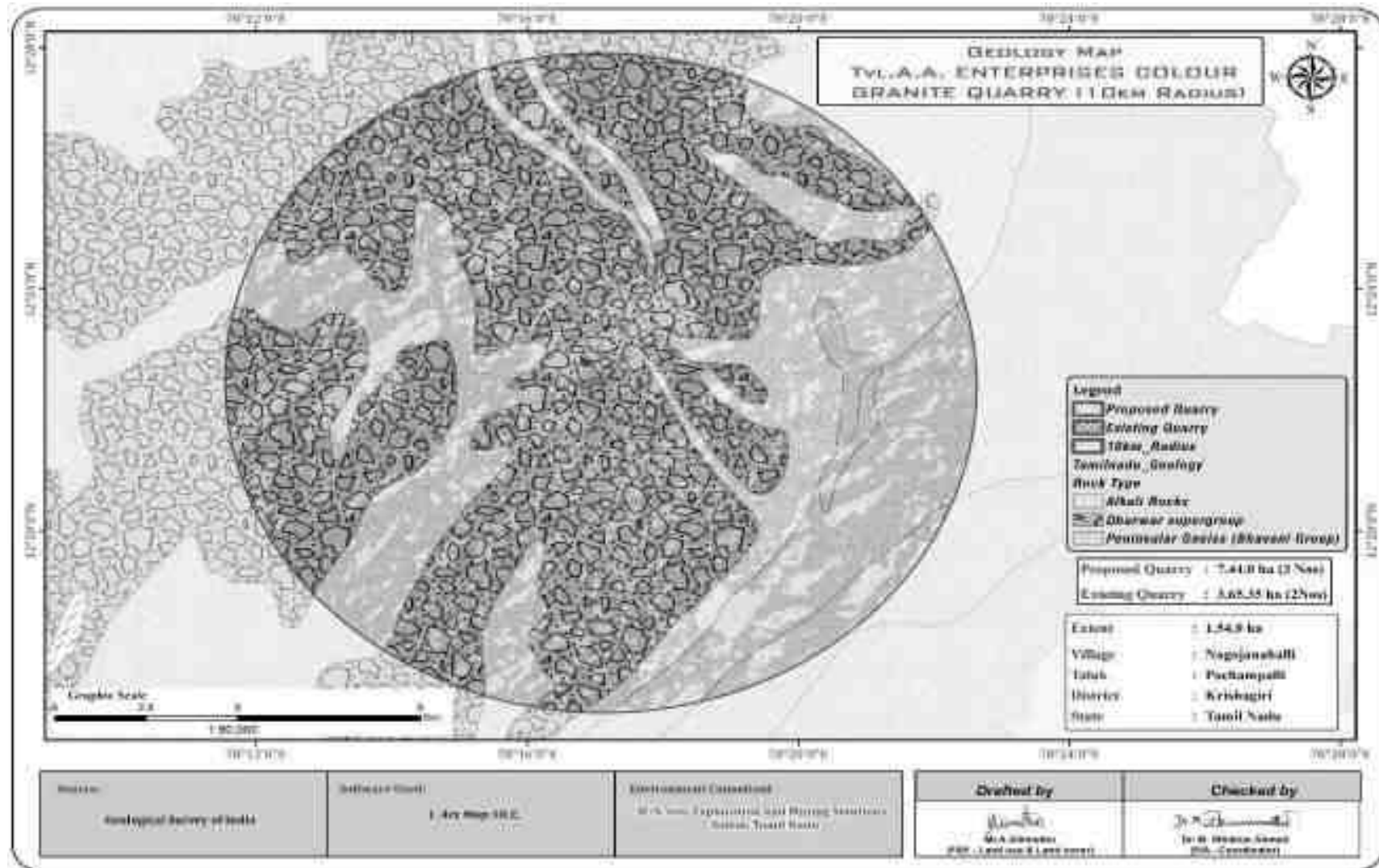
Exploration studies

State Geology and Mining Department has carried out the regional prospecting and exploration in these areas during 1992 to 1993 Geological survey of India has carried out detailed mapping in Krishnagiri District, besides the Functional Area Experts (FAE) in Geology and Hydrogeology carried out detailed Geological studies in the area. The Granite outcrops is clearly visible in some places within the study area.

2.3.4 Hydrogeology

Krishnagiri district is underlined by Archaean crystalline formations with Recent alluvial deposits of limited areal extent and thickness along the courses of major rivers. The occurrence and movement of ground water are controlled by various factors such as physiography, climate, geology and structural features. Weathered, and fractured crystalline rocks constitute the important aquifer systems in the district. Ground water generally occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fractured zones at deeper levels. The thickness of weathered zones in the district ranges from less than a meter to more than 15 m (Source Central Ground Water Board – Krishnagiri).

Figure 2.8: Regional Geology Map



2.4 Resources and Reserves

Black Granite is occurring beneath the surface, Granite outcrops are visible in some places within the project area.

Table 2.5 Resources, Reserves

Description	ROM in m ³	Granite recovery @30% in m ³	Granite waste @70% recovery	Weathers Rock	Total waste	Top Soil in m ³
Geological Resources	2,88,400	86,520	2,01,880	50,732	2,52,612	11,680
Mineable Reserves	1,18,020	35,406	82,614	34,888	1,17,502	7,840
Year wise Production for Five years	29,440	8,832	20,608	23,268	43,876	4,040

Source: Approved Mining plan

Table 2.6 Year wise Production plan

Year	ROM (m ³)	Recovery @ 30% (m ³)	Granite Waste @ 70% (m ³)	Weathered Rock (m ³)	Topsoil (m ³)
I	5,900	1,770	4,130	18,224	-
II	5,900	1,770	4,130	5,044	4,040
III	5,690	1,707	3,983	-	-
IV	5,875	1,763	4,112	-	-
V	6,075	1,822	4,253	-	-
Total	29,440	8,832	20,608	23,268	4,040

Source: Approved Mining plan

Stacking of Granite Rejects and Disposal of Waste

There is generation of topsoil is about 4,040m³ during the mining plan period. The excavated topsoil will be spread out all along the boundary barrier and utilized for green belt development purpose.

The total waste to be produced during the first five years is around 43,876m³ (Granite Waste @70% 20,608m³ + Weathered rock 23,268m³) the same will be proposed to dump on the Southern side with dimension of (L)83m x (W)38m x (H)13.91m.

Conceptual Mining Plan/ Final Mine Closure Plan

Conceptual mining plan is prepared with an object of long-term systematic development of benches, lay outs, selection of permanent ultimate pit limit, depth of quarrying and ultimate pit, selection of sites for construction of infrastructure etc. The ultimate pit size is designed based on certain practical parameters such as economical depth of quarrying, safety zones, permissible area etc.,

Table 2.7 Ultimate Pit Dimension

Length in m	Width in m	Depth in m
98	108	24

Source: Approved Mining plan

2.5 Method of Mining

- The method of mining is Opencast mechanized method

- Eco-friendly dimensional wire saw cutting for liberation and splitting up of blocks from parent sheet rocks
- Splitting of rock body of considerable volume from the parent rock formation by carefully avoiding visibly seen defects such as patches veins, etc., is done by adopting the method of “Diamond wire cutting” along the horizontal as well as two vertical sides on the front face of the formation.
- Jackhammer drilling with 32mm dia, this huge portion is further split into several blocks of required dimensions, only slurry explosives are used for secondary fragmentation and handling of waste.
- Hydraulic Excavator coupled with tippers is deployed for the formation of benches and loading
- There is no mineral processing or ore beneficiation proposed
- Proposed bench height is 5m and 5m width with 60° slope
- The waste material generated during quarrying activity includes rock fragments of different sizes, and waste chips during dressing of the blocks. The waste materials are taken in tippers and proposed to be dumped in the respective approved places ear-marked for the purpose and the same will be utilized for backfilling in the northern side of the lease area during conceptual stage.

2.5.1 Drilling

Drilling will be carried out as per parameters given below: -

Spacing - 1m, Burden - 0.8m, Depth of hole - 1.5m

2.5.2 Blasting

Blasting will be done as per details below: -

Controlled blasting parameter: -

Spacing – 1m

Burden – 0.8 m

Depth of hole – 1.5 m

Charge per hole – 125 gms

Powder factor – 7.0 tonnes/kg

Dia of hole – 32 mm

Details of blasting design and parameters are discussed in approved mining plan.

2.5.3 Extent of Mechanization

Table 2.8: Machinery Details Proposed

Drilling Equipment's					
Type	No of Unit	Dia of Hole mm	Size capacity	Make	Motive Power
Jack Hammer	6	32	1.2m to 6m	Atlas Copco	Compressed air
Compressor	2	-	140cfm/400psi	Atlas Copco	Diesel drive
Diamond Wire Saw	1	-	20m ³ /day	Optima	Diesel Generator
Diesel Generator	1	-	125kva	Powerica	Diesel
Loading Equipment					
Type	No of Unit	Capacity	Make	Motive Power	
Crawler Crane	1	855	Tata P & H	Diesel Drive	
Excavator	1	300	Tata Hitachi	Diesel Drive	
Haulage within the Mine & Transport Equipment					
Type	No of Unit	Capacity	Make	Motive Power	
Tipper	2	20 tonnes	Tata	Diesel Drive	

2.6 General Features

2.6.1 Existing Infrastructures

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

2.6.2 Drainage Pattern

There are no streams, canals or water bodies crossing within the project area, hence there is no requirement of stream or canals diversion.

2.6.3 Traffic Density

The traffic survey conducted based on the transportation route of material, the Granite will be transported mainly through the Velampatti-Sellampatti Road located 600m North East side of the area and Pochampalli-Karimangalam District Road 4.0km South East side.

Traffic density measurements were performed at Two locations

TS-1- Velampatti-Sellampatti Panchayat Road- 600m North East

TS-2- Pochampalli-Karimangalam District Road- 4.0km South East

Traffic density measurement 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.

Figure. 2.12: Mineral Transportation Route Map

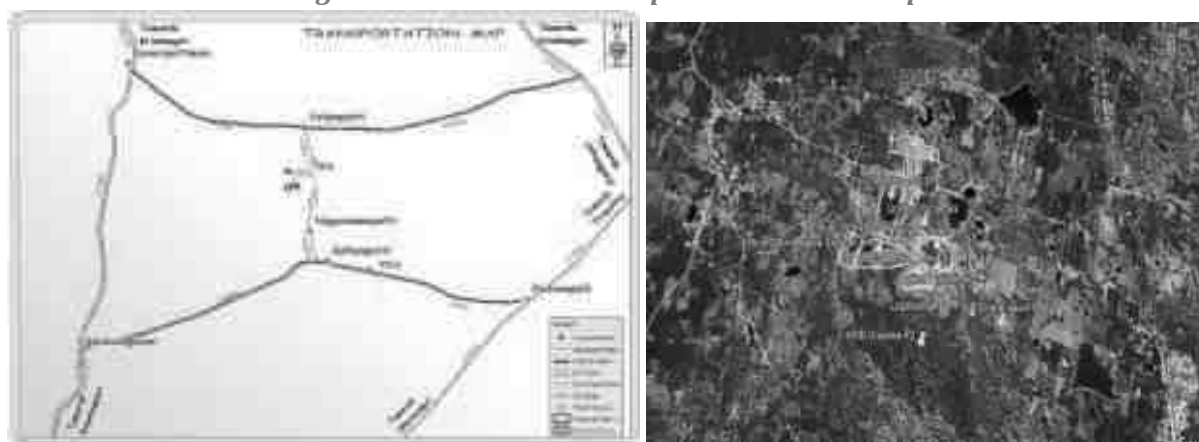


Table.2.9: Traffic Survey Locations

Station Code	Road Name	Distance and Direction	Type of Road
TS1	Velampatti-Sellampatti	600m North East	Panchayat road (Single Lane)
TS2	Pochampalli-Karimangalam	4.0km SEast	District Road

Source: On-site monitoring by GEMS FAE & TM

Table 2.10: Existing Traffic Volume

Station Code	HMV		LMV		2/3 Wheelers		Total PCU
	Number	PCU	Number	PCU	Number	PCU	
TS1	50	150	75	75	100	100	325
TS2	200	600	150	150	250	125	875

Source: On-site monitoring by GEMS FAE & TM

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

Table 2.11: Granite Hourly Transportation Requirement

Transportation of Granite per day			
Capacity of Trucks	No of trips per day	Volume in PCU	PCU considering 8 Hours
20Ts	20	3	60

Source: Data analysed from Approved Mining plan

Table 2.12: Summary of Traffic Volume

Route	Existing Traffic Volume in PCU	Incremental Traffic Due to the project in PCU	Total Traffic Volume in PCU	Hourly Capacity in PCU as per IRC - 1960
TS-1	325	60	385	1200
TS-2	875	60	935	1500

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

Due to this project the existing traffic volume will not exceed

As per the IRC 1960 this existing village road can handle 1,200 PCU in hour and Major district road can handle 1500 PCU in hour hence there will not be any conjunction due to this proposed transportation.

2.6.4 Mineral Beneficiation and Processing

There is no proposal for the mineral processing or ore beneficiation in this project

2.7 Project Requirement

2.7.1 Water Source & Requirement

Detail of water requirements in KLD as given below:

Table 2.13 Water Requirement for the Project

Purpose	Quantity	Source
Dust Suppression	0.5 KLD	From Existing, bore wells and drinking water will be sourced from Approved Water vendors.
Green Belt development	0.4 KLD	From nearby tank
*Drinking and Domestic purpose	0.3KLD	From nearby tank
Total	1.2KLD	

Source: Prefeasibility report

* Drinking water will be sourced from Approved Water Vendors

2.7.2 Power and Other Infrastructure Requirement

The project does not require power supply for the mining operations. The quarrying activity is proposed during day time only (General Shift 8 AM – 5 PM, Lunch Break 1 PM – 2 PM). Electricity for use in office and other internal infrastructure will be obtained from TNEB.

The temporary infrastructures such as Mine Office, First Aid Room, Rest Shelter etc., will be constructed within the project area before commencing the quarry operation. 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. There is no toxic effluent expected to generate in the form of solid, liquid or gaseous form hence there is no requirement of waste treatment plant.

2.7.3 Fuel Requirement

High speed Diesel (HSD) will be used for mining machineries. Diesel will be brought from nearby Fuel Stations.

High speed Diesel (HSD) will be used for mining machineries. Diesel will be brought from nearby Fuel Stations.

One Hydraulic Excavator will excavate and loading into the tippers about 20m³/Hour

Hydraulic Excavator will consume about 16 Ltrs per hour

Per hour Excavator will consume = 16 liters / hour

Per hour Excavator will excavate = 10m³

For 1,18,020m³ (for the entire life period) = 1,18,020/10

Diesel consume 11,802 working hours = 11,802 hours x 16 liters

= 1,88,832liters of HSD for entire project life

For 29,440m³ (for mining plan period) = 29,440/10

Diesel consume 2,944 working hours = 2,944 hours x 16 liters

= 47,104Ltrs of HSD for mining plan period

The HSD (High Speed Diesel) will be obtained from nearby fuel station near the vicinity of the project site and will be transported in Fuel Barrel specified for transport of HSD (High Speed Diesel).

Source: *Prefeasibility Report*

2.8 Employment Requirement:

The skilled, competent qualified statutory persons will be engaged for quarrying operation, preference will be given to the local community.

Table 2.14: Employment Potential

S.No	Description	Numbers
Skilled Labour		
1	Mines Manager	1
2	Mines Foreman	1
3	Machinery Operators	3
Ordinary Employees		
4	Skilled labour	6
5	Semi-skilled	18
6	Unskilled	5
Total		34

Source: Approved Mining Plan

2.9 Project Implementation Schedule

The commercial operation will commence after the grant of Environmental Clearance. CTO 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.

Table 2.15 Expected time Schedule

Sl.No	Particulars	Time Schedule (in month)					Remarks if any
		1 st	2 nd	3 rd	4 th	5 th	
1	Environmental Clearance						
2	Consent to operate						Production Start Period
Time line may vary; subjected to rules and regulations /& other unforeseen circumstances							

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

Table 2.16 Capital Cost Estimation

S.No	Description	Cost
1	Project Cost	Rs. 3,46,11,000/-
2	EMP Cost	Rs. 3,80,000/-
	Total	Rs. 3,49,91,000/-

Source: Approved Mining Plan & Prefeasibility Report *

3. DESCRIPTION OF ENVIRONMENT

3.0 General

The baseline environment quality represents the background environmental scenario of various environmental components such as Land, Water, Air, Noise, Biological and Socio-economic status of the study area. Field monitoring studies to evaluate the base line status of the project site were carried out covering Oct 2023 to Dec 2023 with CPCB guidelines for the following attributes –

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

Environmental data has been collected with reference to cluster quarries by Global Lab and Consultancy Services, – An accredited by ISO/IEC 17025:2017 (NABL) Laboratory.

Study Area

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

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

Study Period

The baseline study was conducted during the Post monsoon season i.e., Oct 2023 to Dec 2023.

Study Methodology

- The project area was surveyed in detail with the help of Total Station Survey instruments and pillars were marked. The boundary coordinates were superimposed on the satellite imagery to understand the relief of the area, besides Land use pattern of the area was studied through the Bhuvan (ISRO)
- Soil samples were collected and analysed for relevant physio-chemical characteristics in order to assess the impact due to mining activities and to recommend saplings for Greenbelt development.
- Ground water samples were collected from the existing bore wells, Surface water was collected from water bodies in the buffer zone and analysed as per CPCB Guidelines.
- An onsite meteorological station was setup in cluster area, to collect data about wind speed, wind direction, temperature, relative humidity, rainfall and general weather conditions were recorded throughout the study period.
- Air quality Data's were collected by installation of Respiratory Dust Samplers (RDS) for Fugitive dust, PM₁₀ and SO₂, NO_x with gaseous attachments & Fine Dust Samplers (FDS) for PM_{2.5} and other parameters as per NAAQ norms and analysed for primary air pollutants to work out the existing status of air quality.
- The Noise level measurements were also made at various locations in different intervals of time with the help of sound level meter to establish the baseline noise levels in the impact zone.

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

Table 3.1: Monitoring Attributes and Frequency of Monitoring

Attribute	Parameters	Frequency of Monitoring	No. of Locations	Protocol
Land-use Land cover	Land-use Pattern within 10 km radius of the study area	Data from census handbook 2011 and from the satellite imagery	Study Area	Satellite Imagery Primary Survey
*Soil	Physio - Chemical Characteristics	Once during the study period	6 (1 core & 5 buffer zone)	IS 2720 Agriculture Handbook - Indian Council of Agriculture Research, New Delhi
*Water Quality	Physical, Chemical and Bacteriological Parameters	Once during the study period	6 (2 surface water & 4 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 hourly twice a week (October – December 2020)	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	7 (1 core & 6 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 Quadrante & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio–Economic Characteristics, Population Statistics and Existing Infrastructure in the study area	Site Visit & Census Handbook, 2011	Study Area	Primary Survey, census handbook & need based assessments.

Source: On-site monitoring/sampling by Global Lab and Consultancy Services, in association with GEMS

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

3.1 Land Environment

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

3.1.1 LAND USE/ LAND COVER

To study the land use pattern of the core as well as a buffer zone, land use/land cover details have been identified/ maps have been prepared in accordance with the **Standard ToR point no. 4 & 10 Stating:** Point No. 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).

Point No. 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.

Current vintage data of Indian Remote Sensing Satellite ResourceSat-2A L4FMX (False Color Composite) has been used for Land Use / Land Cover study. Satellite image has been procured from National Remote Sensing Centre, Hyderabad.

3.1.2 OBJECTIVE

The objectives of the LULC study are as follow:

- ☞ To develop the Land use & Land cover map using land coordinates of the quarry area (Core Zone) and 10 km radius from the quarry site (Buffer area).
- ☞ To Identify and mark the important Land use and Land cover features using the primary and secondary data collected.
- ☞ To evaluate the impacts on existing land use/cover features of the buffer area by the Proposed Project activities.
- ☞ To identify the mitigative measures for the sustainable use of land and to protect the buffer zone from the adverse impacts.

Technical specification of Satellite imagery Data Used:

Current vintage data of Indian Remote Sensing Satellite RESOURCESAT1 (LISS-III) digital FCC (False Color Composite) has been used for preparation of Land use/ Land cover thematic map of study area. Satellite image has been procured from National Remote Sensing Centre, Hyderabad. Survey of India Toposheet as a reference map on 1:50,000 scale has been used for preparation of base layer data like road, rail network; village for geo-referencing of satellite image.

Satellite Image - Resourcesat1-LISSIII, 23.5m Resolution

Satellite Data Source - NRSC, Hyderabad

Satellite Vintage - 20th Oct 2023, Swath 141km wide.

SOI Toposheet No - 57 L/03 & 57L/07

Software Used - ArcGIS 10.8

The satellite image (FCC colour 3,2,1) of the buffer zone is given in 3.1

The spatial resolution and the spectral bands in which the sensor collects the remotely sensed data are two important parameters for any land use survey. Resourcesat1-LISSIII, 23m Resolution of 23.5m and a 141 km wide swath of the earth in 23.5m resolution covering wide areas the data is collected in 4 visible bands namely band number and Resolution.

TABLE 3.2: Resourcesat1-LISSIII SENSOR characteristics

Band Number	Description	Wavelength	Resolution
Band 1	Green	0.52-0.59 μm	23.5 meters
Band 2	Red	0.62-0.68 μm	23.5meters
Band 3	NIR	0.77-0.86 μm	23.5meters
Band 4	SWIR	1.55-1.70 μm	70meters

Source: NRSC, Hyderabad

3.1.3 METHODOLOGY

The land use / land cover map is prepared by adopting the interpretation techniques of the Satellite image in combination with collateral data such as Survey of India topographical maps. Image classification is done by using visual interpretation techniques and digital classification using any of the image processing software. The various activities for preparation of LULC include pre-processing, rectification, image enhancements and classifying the satellite data for assessing the change in land use land cover due to proposed developmental activities.

- ☞ Preliminary/primary data collection of the study area
- ☞ Satellite data procurement from NRSC
- ☞ Secondary data collection from authorized bodies
- ☞ Survey of India Toposheet (SOI)
- ☞ Mine Layout
- ☞ Cadastral / Khasra map
- ☞ GPS Coordinates of Lease Boundary
- ☞ Processing of satellite data using ArcGIS 10.8 and preparing the Land Use & Land cover maps (e.g. Mine area, Existing Quarries, Settlements, Agriculture land, Non agriculture land, water bodies, etc.) by Digital Image Processing (DIP) technique.
- ☞ Geo-Referencing of the Survey of India Toposheet
- ☞ Geo-Referencing of satellite Imagery with the help of Geo-Referenced Toposheets
- ☞ Enhancement of the Satellite Imagery
- ☞ Base Map layer creation (Roads, Railway, Village Names, and other Secondary data, etc.)
- ☞ Data analysis and Classification using Digital interpretation techniques.
- ☞ Ground truth studies or field Verification.
- ☞ Error fixing / Reclassification
- ☞ Final Map Generation.

The land use/Land cover Map of the buffer zone is given in 3.4(b).

Land Use Pattern of the Buffer Zone (Study area)

Details of the same are given in Table - 3.3 and the map is shown in Figure - 3.2

TABLE: 3.3 LAND USE / LAND COVER DETAILS OF STUDY AREA

S.No	CLASSIFICATION	AREA HA	AREA %
BUILTUP			
1	RURAL	514.55	1.61
2	URBAN	626.40	1.96
3	MINING	112.61	0.35
AGRICULTURAL LAND			
4	CROP LAND	17062.66	53.31
5	PLANTATION	4556.02	14.24
6	FALLOW LAND	2249.56	7.03
FOREST			
7	FOREST	975.59	3.05
BARREN/WASTE LANDS			
8	BARREN ROCKY	4419.27	13.81
WETLANDS/ WATER BODIES			
9	WATER BODIES/LAKE	1487.91	4.65
TOTAL		32004.56	100.00

Source: Bhuvan, NRSC.



FIGURE 3.1: CHART SHOWING LANDUSE/LANDCOVER ANALYSIS USING LISS III Data

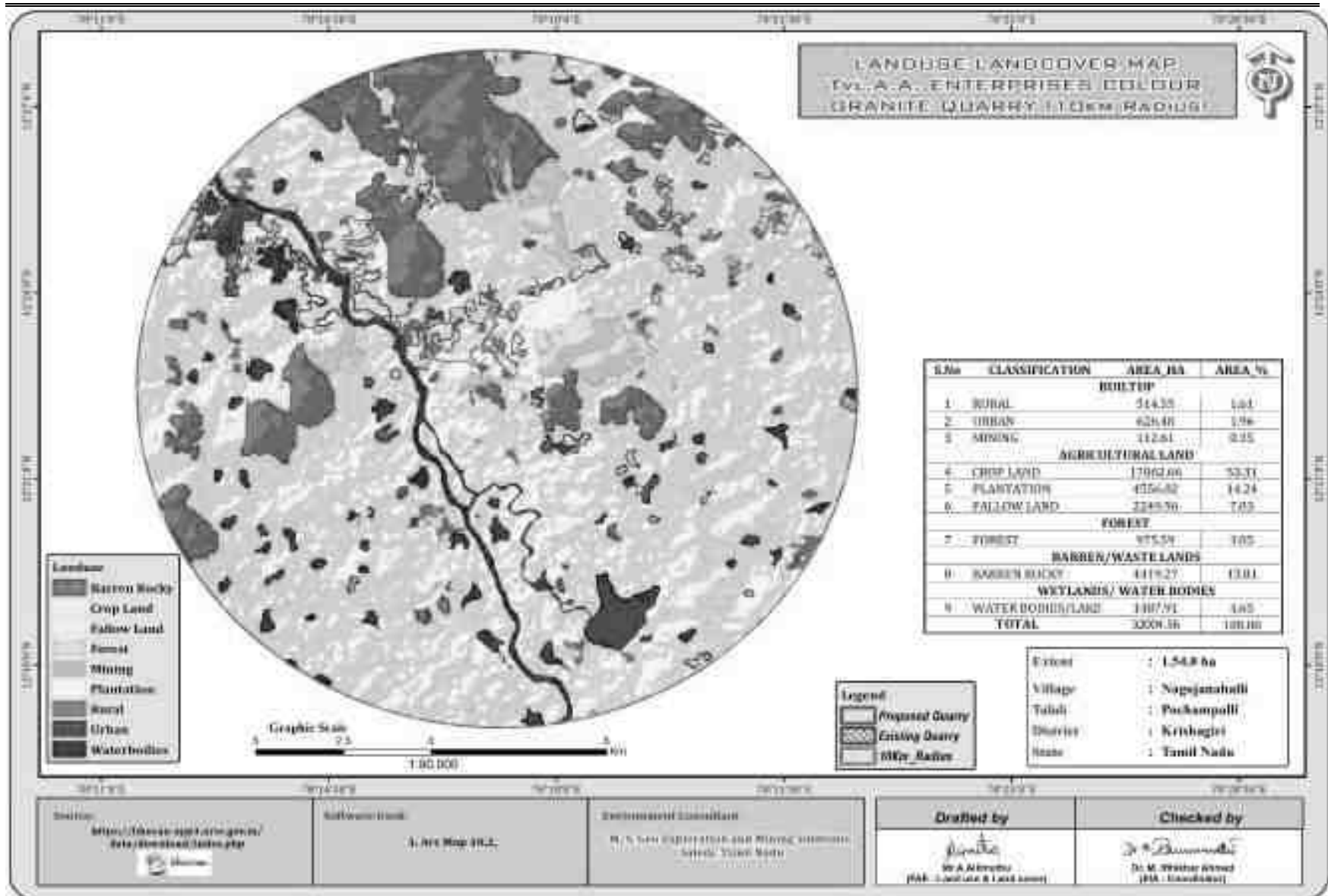


FIGURE 3.3: LAND USE LAND COVER MAP 10KM RADIUS

3.1.4 Interpretation

- ☞ The 10 km radius study area mainly comprises of crop land & Agriculture Plantation land accounting of 53.31% & 14.24% of the total study area. The study area also consists of fallow land of 7.03%.
- ☞ Water Bodies such as ponds/ lakes comprises of 4.65% of the core and buffer area.
- ☞ The Forest land accounts of 3.05%. Barren Rocky land occupies with 13.81% of the total study area.
- ☞ 0.35% of the total study area is occupied by the mine industries of captive mines. The area occupied by Mainly Black granite of the total buffer area. As also observed within the primary survey, the 10 km buffer area is also occupied by the medium scaled granite and marble and small Brick kiln industries also located in the study area.
- ☞ 3.5% of the area is covered under the human Settlement. The nearest village within the 3 km radius from the project site boundary is observed to be villages like N.Thattakal, Jainur, Nagojanahalli village etc.,

3.1.4.1 Cropping Pattern of the Buffer Zone

The productivity of Agriculture in the Southern and Northern part of the Tamil Nadu is comparatively like the Krishnagiri district has more favourable conditions for the agriculture. As observed, within the study area agriculture is the dominant occupation. Krishnagiri district is one of the potential districts for cultivation of horticultural crops. Total area under cultivation is 182888 ha. In that, Horticultural crops have been cultivated in about 80499 ha and the prominent crops under cultivation are Mango, Banana, Tomato, Beans, Cabbage, Cauliflower, Brinjal, Coriander, Potato, Carrot, Beetroot, Knol Khol, Turmeric, Rose, Gerbera, Carnation, Jasmine and Chrysanthemum. Mango is the major crop grown in this district.

3.1.5 TOPOGRAPHY

The lease applied area is situated in hilly terrain. The area has gentle sloping towards Eastern side from Krishnagiri district. The altitude of the area is 465-480m above Mean Sea level. proposed quarry area.

1. Drainage Pattern of the Area

There are developed surface drainage channels in the study area. The drainage pattern of the area is dendritic it is inferred the rock-hard rock terrain.

The area is studded with few tanks that serve as the source of drinking water and also their surplus feeds adjoining tanks. The area is mostly dry in all seasons except rainy seasons. During rainy season the surface runoff flows in NE to SW direction. The drainage pattern of the study area is given in Fig. 3.5. The quarrying activity will not hinder the natural flow of rainwater.

2. Seismic Sensitivity

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

3. Environmental Features in the Study Area

Cauvery North Wildlife Sanctuary is situated 1.5Km South. There are no other Wildlife Sanctuaries, National Park and Archaeological monuments within cluster area. No Protected and Reserved Forest area is involved in the cluster area. Therefore, there will be no need to acquisition/diversion of forest land. The details related to the environment sensitivity around the cluster area i.e., 10km radius, are given in the below Table 3.3.

Table 3.4: Details of Environment Sensitivity around the Cluster

No	Sensitive Ecological Features	Name	Arial Distance in km from Cluster
1	National Park / Wild life Sanctuaries	Cauvery North wild life sanctuary	1.5 km -NE
		Cauvery South Wildlife Sanctuary	35.5km-West
2	Reserve Forest	Thattakal R.F	1.32 km – NE
		Thoarapalli R.F	8.8km-NE
3	Lake Reservoir	Tank	240m SE
		Tank	490m SE
		Sendrayampalli Eri	650m NE
		Thenpennai River	1.8km West
		Penneswaramadam Eri	6km NW
		Barur Lake	6.2km SE
4	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10KM Radius
5	Critically Polluted Areas	Ranipet - SIPCOT Industrial Complex	127.0 km- North East
6	Mangroves	None	Nil within 10 km Radius
7	Mountains/Hills	None	Nil within 10 km Radius
8	Notified 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 3.4: LAND USE LAND COVER MAP 500M RADIUS

Land use Landcover of the area within 500m radius were studied in detailed that the majority of the land within 500m is Scrub land (36.03ha) followed by agriculture land (21.69ha) and Hillock area (30.65ha) are contributing majority of the land use.

Table 3.5: LAND USE LAND COVER MAP 500M RADIUS

No	Land Use Land Cover	Area in ha
1	Agriculture Land	21.69
2	Builtup Area	0.41
3	Hill Lock Area	30.65
4	Mining	9.95
5	Scrub Land/Trees	36.03
6	Tree Plantation	11.09
7	Waterbodies	2.46
Total		112.27

3.1.6 Soil Environment

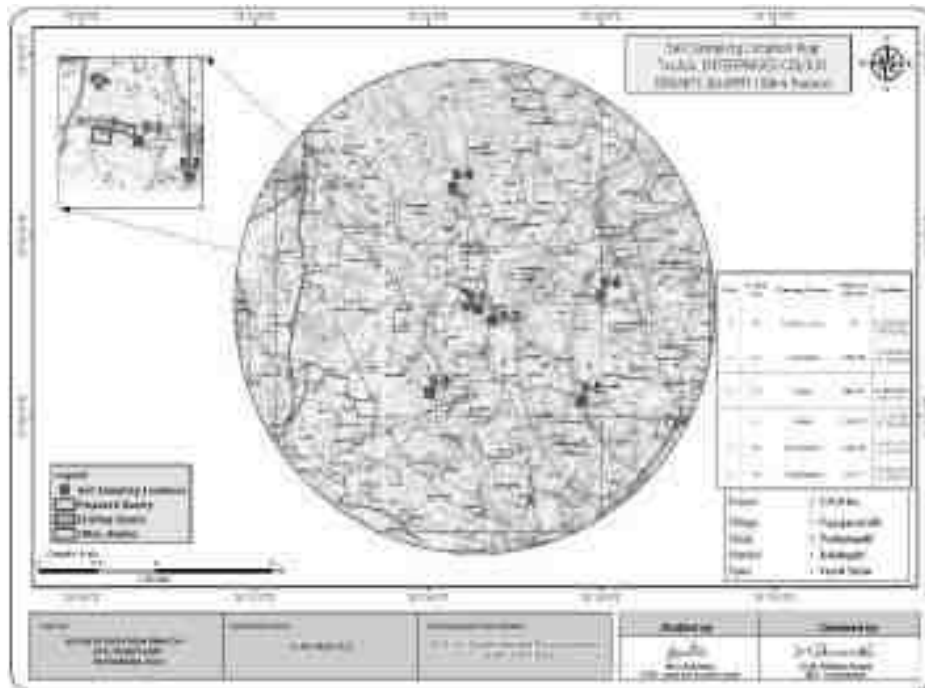
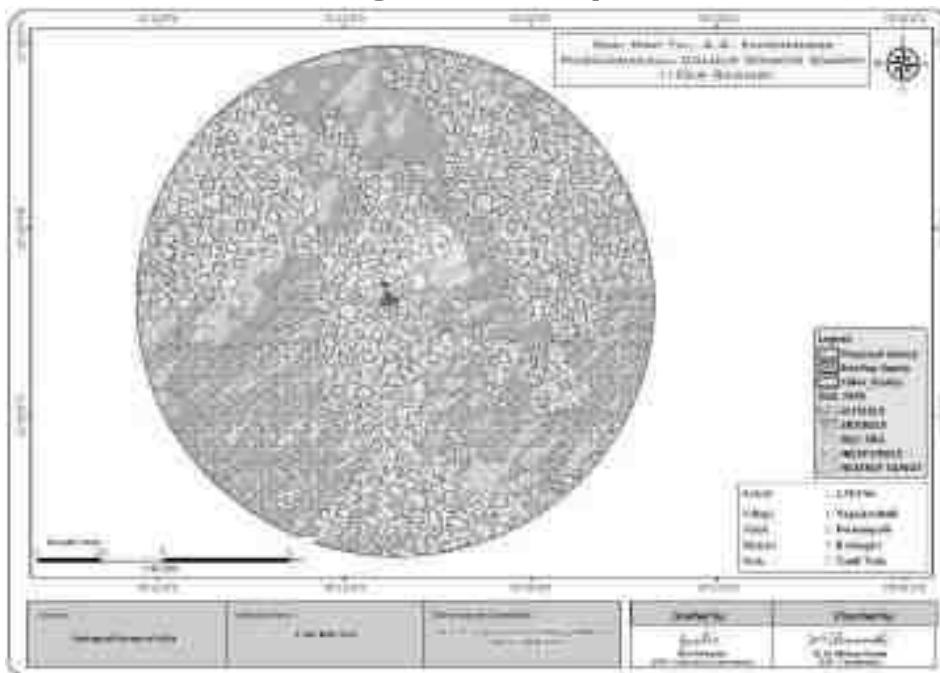
Soil quality of the study area is one of the important components of the land environment. The composite soil samples were collected from the study area and analysed for different parameters. The locations of the monitoring sites are detailed in Table 3.4 and Figure 3.3.

Table 3.6: Soil Sampling Locations

S. No	Location Code	Monitoring Locations	Distance (km) and Direction	Coordinates
1	S-1	Adjacent Proposed Area	SE	12°22'24.00"N 78°17'8.39"E
2	S-2	N.Thattakkal	850m SE	12°22'9.43"N 78°17'30.23"E
3	S-3	Agaram	4km SW	12°20'31.94"N 78°16'2.90"E
4	S-4	Baleguli	4.8km NW	12°25'5.37"N 78°16'34.60"E
5	S-5	Periyakaradiyur	5.8km SE	12°20'23.50"N 78°19'33.56"E
6	S-6	Thoppadikuppam	5km NE	12°22'42.37"N 78°19'59.52"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS.

FIGURE 3.5: Collection of Soil Sample**Core Zone****Buffer Zone**

Figure 3.6: Soil Sampling Locations Around 10 Km Radius**Figure 3.7: Soil Map****The objective of the soil sampling is -**

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

Methodology –

For studying soil quality, sampling locations were selected to assess the existing soil conditions in and around the project site representing various land use conditions. The samples were collected by auger boring into the soil up to 90-cm depth. Six (6) locations were selected for soil sampling on the basis of soil types, vegetative

cover, industrial & residential activities including infrastructure facilities, which would accord an overall idea of the soil characteristics. The samples were analysed for physical and chemical characteristics. The samples were sent to laboratory for analysis. The samples were filled in Polythene bags, coded and sent to laboratory for analysis and the details of methodology in respect are given in below Table 3.5.

Table 3.7: Methodology of Sampling Collection

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

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

Soil Testing Result –

The samples were analysed as per the standard methods prescribed in “Soil Chemical Analysis (M.L. Jackson, 1967) & Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India”.

Table 3.8: Soil Quality of the Study Area

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	S-1 Adjacent Proposed Area	S-2 N-Thattakkal	S-3 Agaram	S-4 Baleguli	S-5 Periyakaradiyur	S-6 Thoppadikuppam
1	Organic Matter	GLCS/SOP/S/003	%	2.30	2.04	2.07	1.65	2.37	2.78
2	pH	IS 2720 (Part 26)	-	7.05	7.09	6.54	7.21	7.11	7.03
3	Specific Electrical Conductivity	IS 14767	µS/cm	378	395	345	258	310	283
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	14.0	14.0	14.0	14.2	14.2	14.3
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.33	1.41	1.67	1.16	1.46	1.33
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	4.2	4.8	3.8	4.6	5.0	2.0
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	2.2	2.4	1.6	2.4	3.2	1.6
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	10.4	12.6	11.0	10.3	9.6	9.0
9	Chloride	GLCS/SOP/S/004	meq/l	8.7	10.2	9.6	8.3	7.8	7.6
10	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	18.0	22.2	20.1	18.5	16.3	17.0
11	Bulk Density	GLCS/SOP/S/017	g/cc	1.05	1.07	1.07	1.20	1.11	1.09
12	Texture: Sand	GLCS/SOP/S/015	%	34.92	33.41	37.02	40.00	36.75	42.91
13	Texture: Silt	GLCS/SOP/S/015	%	44.06	44.69	36.85	37.84	38.68	32.69
14	Texture: Clay	GLCS/SOP/S/015	%	21.01	21.90	26.13	21.16	24.57	24.40
15	Water Holding Capacity	GLCS/SOP/S/016	%	40.6	42.0	45.2	46.8	43.4	41.6
16	Available Nitrogen as N	GLCS/SOP/S/029	kg/he	200.7	125.4	112.8	100.35	175.6	213.2
17	Permeability	By Permeameter	%	42.8	45.1	43.3	44.7	40.9	43.2
18	Exchangeable Manganese	USEPA Method	mg/kg	9.15	9.81	BDL(DL:0.5)	9.81	8.72	13.29
19	Exchangeable Zinc	USEPA Method	mg/kg	25.06	25.06	24.62	21.35	20.48	21.57
20	Cadmium as Cd	USEPA Method	mg/kg	8.06	14.38	8.93	12.86	14.16	15.25
21	Chromium as Cr	USEPA Method	mg/kg	14.38	13.73	12.86	10.68	16.34	16.34
22	Copper as Cu	USEPA Method	mg/kg	4.14	10.68	10.24	BDL(DL:0.5)	10.90	5.67
23	Lead as Pb	USEPA Method	mg/kg	BDL(DL:0.5)	BDL(DL:0.5)	1.09	BDL(DL:0.5)	BDL(DL:0.5)	BDL(DL:0.5)
24	Iron as Fe	USEPA Method	mg/kg	13.00	25.28	28.55	11.11	12.20	16.56
25	Organic Carbon	USEPA 6010D	mg/kg	1.30	1.18	1.20	0.95	1.37	1.61
26	Boron as B	GLCS/SOP/S/003	%	3.70	3.27	2.61	1.31	2.61	5.23

Source: Sampling Results by Global Lab and Consultancy Services,

Interpretation & Conclusion

The physical properties of the soil samples were examined for texture, bulk density, porosity and water holding capacity. The soil texture found in the study area is Clay Loam Soil 21.01% to 26.13% and Bulk Density of Soils in the study area varied between 1.05– 1.20 g/cc. The Water Holding Capacity of the soil samples is found to be medium i.e. ranging from 40.6 – 46.8 %.

- The nature of soil is slightly alkaline to strongly alkaline with pH range 6.54 to 7.21
- The available Nitrogen content range between 100.35 to 213.2 kg/hc
- The available Phosphorus content range between 14.0 to 14.3 mg/kg
- The available Potassium range between 1.16 to 1.67 meq/l
- Whereas, the micronutrient as zinc (Zn) and iron (Fe) were found in the range of 20.48 to 25.06 mg/kg; 11.11 to 28.55mg/kg.

Observation:

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

3.2 Water Environment

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

3.2.1 Surface Water Resources:

The study area is studded with few tanks that serve as the source of drinking water and also their surplus feeds adjoining tanks. The rainfall over the area is moderate, the rainwater storage in open wells and trenches are in practice over the area and the stored water acts as source of freshwater for couple of months after rainy season.

Table 3.9: Water Bodies in the Buffer Zone

Sl.No.	Water Bodies	Distance
1	Tank	240m SE
2	Tank	490m SE
3	Sendrayampalli Eri	650m NE
4	Thenpennai River	1.8km West
5	Penneswaramadam Eri	6km NW
6	Barur Lake	6.2km SE

Source: Survey of India Toposheet

3.2.3 Methodology

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

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

Two (2) surface water and four (4) ground water samples were collected from the study area and were analysed for physio-chemical, heavy metals and bacteriological parameters in order to assess the effect of mining and other activities on surface and ground water. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012 and 'Standard methods for the Examination of Water and Wastewater' published by American Public Health Association (APHA). The water sampling locations are given in Table 3.10 and shown as Figure 3.8.

Table 3.10: Water Sampling Locations

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	SW1	Thenpennai River	1.8km West	12°22'29.36"N 78°16'0.70"E
2	SW2	Maruderi Lake	3km South	12°20'45.14"N 78°17'0.08"E
3	WW-1	Near Project Area	880m SE	12°21'59.72"N 78°17'23.00"E
4	WW-2	Thoppadikuppam	5km NE	12°22'40.26"N 78°19'58.82"E
5	BW-1	Near Project Area	420m NE	12°22'38.80"N 78°17'16.40"E
6	BW-2	Agaram	4km SW	12°20'30.84"N 78°16'3.35"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS.

Figure 3.8: Collection of Water Sample



Figure 3.9: Water Sampling Locations Around 10 Km Radius

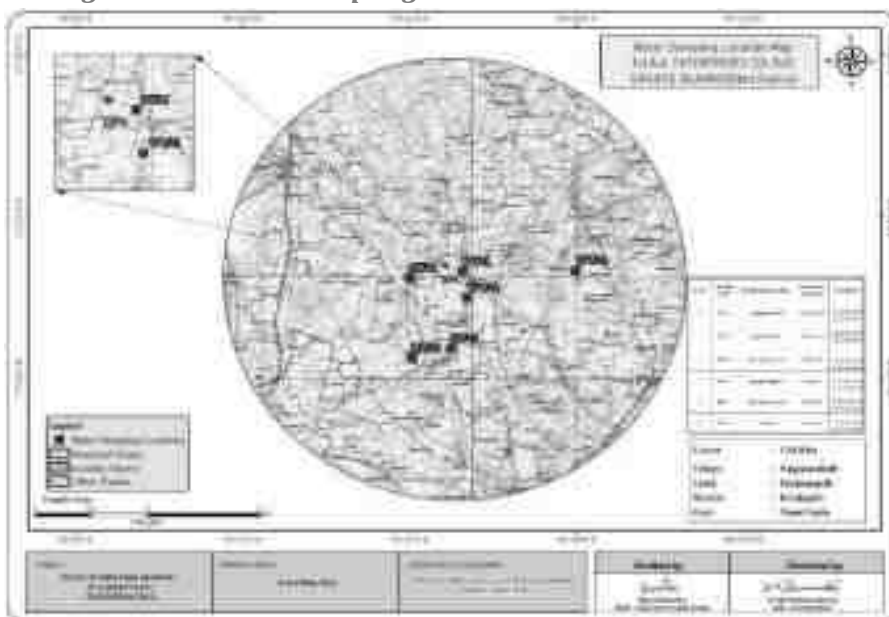


Table 3.11: Ground Water Sampling Results

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	WW1-Near Project area	WW2-Thoppadikuppam	BW1-Near Near Project area	BW2- Agaram
1	Color	IS 3025 PART 4	Hazen	<5	<5	< 5	< 5
2	Odor	IS 3025 PART 5	-	Agreeable	Agreeable	Agreeable	Agreeable
3	pH	IS 3025 PART11	-	7.50	7.43	7.62	7.47
4	Conductivity	IS 3025 PART14	µs/cm	529	766	555	688
5	Turbidity	IS 3025 PART10	NTU	<1	<1	<1	<1
6	Total Dissolved Solids	IS 3025 PART16	mg/l	312	452	327	394
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	144.7	124.6	132.6	104.5
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	168	180.0	140	156
9	Calcium as Ca	IS 3025 PART40	mg/l	43.2	44.8	36.8	44.8
10	Magnesium as Mg	IS 3025 PART 46	mg/l	14.5	16.5	11.6	10.7
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	167.4	161.3	144.9	138.8
12	Sulphate as SO ₄ ⁻²	IS 3025 PART24	mg/l	35.15	35.7	30.3	33.0
13	Iron as Fe	IS 3025 PART 53	mg/l	0.20	0.20	0.21	0.19
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	0.10	0.10	0.11	0.12
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL :2.0)	BDL(DL :2.0)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL :2.0)	BDL(DL :2.0)	BDL(DL:0.1)	BDL(DL:0.1)
19	Total Suspended Solids	IS 3025 PART 17	mg/l	BDL(DL:2.0)	BDL(DL :2.0)	<2	<2
20	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)
21	Anionic Detergents	IS 13428	mg/l	BDL(DL:0.05)	BDL(DL:0.05)	BDL(DL:0.05)	BDL(DL:0.05)
22	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)	BDL(DL:0.02)	BDL(DL:0.02)	BDL(DL:0.02)
23	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1)	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)
24	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
25	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)
26	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
27	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)
28	Aluminium as Al	GLCS/SOP/W/62	mg/l	0.073	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
29	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
30	Zinc as Zn	GLCS/SOP/W/62	mg/l	0.013	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
31	Total Chromium as Cr	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)
32	Barium as Ba	GLCS/SOP/W/62	mg/l	0.188	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
33	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)	BDL(DL:0.01)
34	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)	BDL(DL:0.002)
35	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)
36	Total Coliforms	IS 15185	Per 100ml	Absent	Absent	Absent	33
37	<i>Escherichia coli</i>	IS 15185	Per 100ml	Absent	Absent	Absent	8

Source: Sampling Results by Global Lab and Consultancy Services,

Table 3.12: Surface Water Sampling Results

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	SW-1 Thenpennai River	SW-2 Maruderi Lake
1	Color	IS 3025 PART 4	Hazen	7.0	6
2	Odor	IS 3025 PART 5	-	Agreeable	Agreeable
3	pH	IS 3025 PART11	-	7.91	7.83
4	Conductivity	IS 3025 PART14	µs/cm	958	1015
5	Turbidity	IS 3025 PART10	NTU	4	5
6	Total Dissolved Solids	IS 3025 PART16	mg/l	565	599
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	160.8	168.8
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	204	224
9	Calcium as Ca	IS 3025 PART40	mg/l	44.8	48.1
10	Magnesium as Mg	IS 3025 PART 46	mg/l	22.3	25.2
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	228.6	236.8
12	Sulphate as SO ₄ ⁻	IS 3025 PART24	mg/l	45.02	40.3
13	Iron as Fe	IS 3025 PART 53	mg/l	0.30	0.30
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	0.20	0.20
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL :2.0)	BDL(DL :2.0)
19	Dissolved Oxygen	IS 3025 PART 38	mg/l	6.6	7.1
20	Bio-Chemical Oxygen Demand	IS 3025 PART 44	mg/l	15.0	10.5
21	Chemical Oxygen Demand	IS 3025 PART 58	mg/l	36.1	28.1
22	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)	BDL(DL:1.0)
23	Total Suspended Solids	IS 3025 PART 17	mg/l	9	7.0
24	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)	BDL(DL:0.1)
25	Anionic Detergents	IS 13428	mg/l	BDL(DL:0.05)	BDL(DL:0.05)
26	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)	BDL(DL:0.02)
27	Sulphide	GLCS/SOP/W/66	mg/l	4.8	0.066
28	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)
29	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)
30	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)
31	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)
32	Aluminium as Al	GLCS/SOP/W/62	mg/l	0.012	0.326
33	Barium as Ba	GLCS/SOP/W/62	mg/l	0.010	BDL(DL:0.01)
34	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)	BDL(DL:0.01)
35	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)	BDL(DL:0.002)
39	Total Coliforms	IS 1622	MPN/100ml	17	27
40	<i>Escherichia coli</i>	Total Coliforms Organism MPN/100ml shall be 50 or less	MPN/100ml	<2	11

Source: Sampling Results by Global Lab and Consultancy Services.

3.2.4 Interpretation & Conclusion

Surface Water

Ph:

The pH varied from 7.83 to 7.91 while turbidity found within the standards (Optimal pH range for sustainable aquatic life is 6.5 to 8.5 pH).

Total Dissolved Solids:

Total Dissolved Solids varied from 565 to 599mg/l, the TDS mainly composed of carbonates, bicarbonates, Chlorides, phosphates and nitrates of calcium, magnesium, sodium and other organic matter.

Other parameters:

Chloride varied between 228.6 mg/l and 236.8mg/l. Nitrates varied from BDL (DL :2.0) while sulphates varied from 40.3 to 45.02 mg/l.

Ground Water

The pH of the water samples collected ranged from 7.43 to 7.62 and within the acceptable limit of 6.5 to 8.5. pH, Sulphates and Chlorides of water samples from all the sources are within the limits as per the Standard. On Turbidity, the water samples meet the requirement. The Total Dissolved Solids were found in the range of 312-452mg/l in all samples. The Total hardness varied between 140–180mg/l.

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

3.2.5 Hydrology and Hydrogeological studies

The district is underlain by hard rock formation fissured and fractured crystalline rocks constitute the important aquifer systems in the district. Geophysical prospecting was carried out in that area by SSRMP-80 Instrument by qualified Geo physicist with the help of IGIS software and it was inferred that the low resistance encountered at the depth between 62-57m. The maximum depth proposed out of proposed project is 24m BGL for the entire period. Hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area. There is no necessity of stream, channel diversion due to these proposed projects.

During the rainy season there is a possibility of collection of seepage water from the subsurface levels this is due to the high intensity of fracture and weathered portion up to a depth of 24m thus the collected seepage water will be stored in the mine sump pits and will be used for dust suppression and greenbelt development and during the end of the life of the mine this collected water will act as a temporary reservoir.

3.2.6 Ground Water Resources:

Krishnagiri district is underlain entirely by Archaean Crystalline formations with Recent alluvial deposits occurring along the river and streams courses and colluvium of valley-fills. The important aquifer systems in the district are constituted by weathered, fissured and fractured crystalline rocks and the recent alluvial deposits. Ground water occurs under phreatic conditions. The maximum saturated thickness of these aquifers is upto 5 m depending upon the topographic conditions. The study area falls in the Pochampalli which is categorized as Safe (< 70%) as per G.O (MS) No 113 dated 09.06.2016.

There are Seven open wells within the radius of 1km Most of the wells are almost in dry conditions: - The details of the well and depth in monsoon and non-monsoon is described below:

Table 3.13: Details of Borewell & Water Level In 1km Radius

S.No	Name	LATITUDE	LONGITUDE	Oct 2023	Nov 2023	Dec 2023
1	BW1	78° 17' 16.4786" E	12° 22' 39.2794" N	58.8	59.4	60
2	BW2	78° 17' 27.5414" E	12° 22' 18.7707" N	59.3	59.9	60.5
3	BW3	78° 17' 50.4240" E	12° 22' 06.9328" N	59.8	60.4	61
4	BW4	78° 16' 59.6309" E	12° 21' 55.3041" N	60	60.6	61.2
5	BW5	78° 16' 34.5132" E	12° 22' 18.5010" N	59.6	60.2	60.8
6	BW6	78° 16' 19.9625" E	12° 22' 43.4617" N	59.4	60	60.6
7	BW7	78° 16' 58.1954" E	12° 22' 54.1218" N	60.2	60.8	61.4
8	BW8	78° 17' 22.3294" E	12° 22' 58.9810" N	59	59.6	60.2

Source: Data obtained by the FAE & Team Members

Table 3.14: Details of Open well & Water Level in 1km Radius

S.No	Name	LATITUDE	LONGITUDE	Oct 2023	Nov 2023	Dec 2023
1	OW-1	78° 17' 22.9739" E	12° 21' 59.7323" N	10.8	11.4	12
2	OW-2	78° 17' 20.0698" E	12° 22' 05.4598" N	10.6	11.2	11.8
3	OW-3	78° 16' 59.3056" E	12° 22' 04.3744" N	10.4	11	11.6
4	OW-4	78° 17' 25.0909" E	12° 21' 40.5004" N	11	11.6	12.2
5	OW-5	78° 16' 48.0351" E	12° 21' 56.9769" N	10.5	11.1	11.7
6	OW-6	78° 16' 24.6172" E	12° 22' 50.7933" N	10.7	11.3	11.9
7	OW-7	78° 16' 43.6379" E	12° 22' 57.3908" N	11.1	11.7	12.3
8	OW-8	78° 17' 28.7697" E	12° 23' 06.4603" N	10.8	11.4	12
9	OW-9	78° 17' 51.7846" E	12° 22' 09.7432" N	10.9	11.5	12.1

Figure 3.10: Post Monsoon Water Level of Open Well 1 Km Radius



Dec- 2023

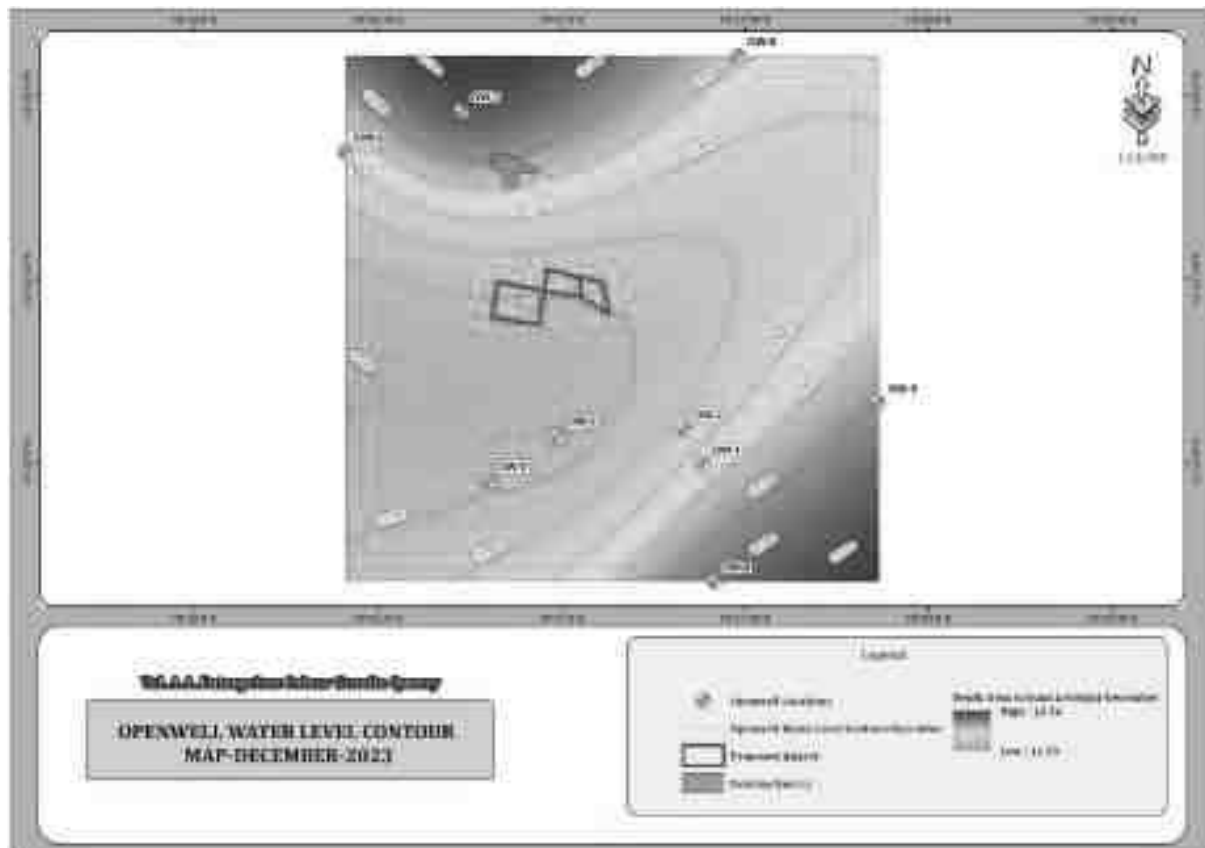


Figure 3.11: Post Monsoon Water Level of Bore Well 1 Km Radius

Oct – 2023

Nov- 2023



Dec 2023

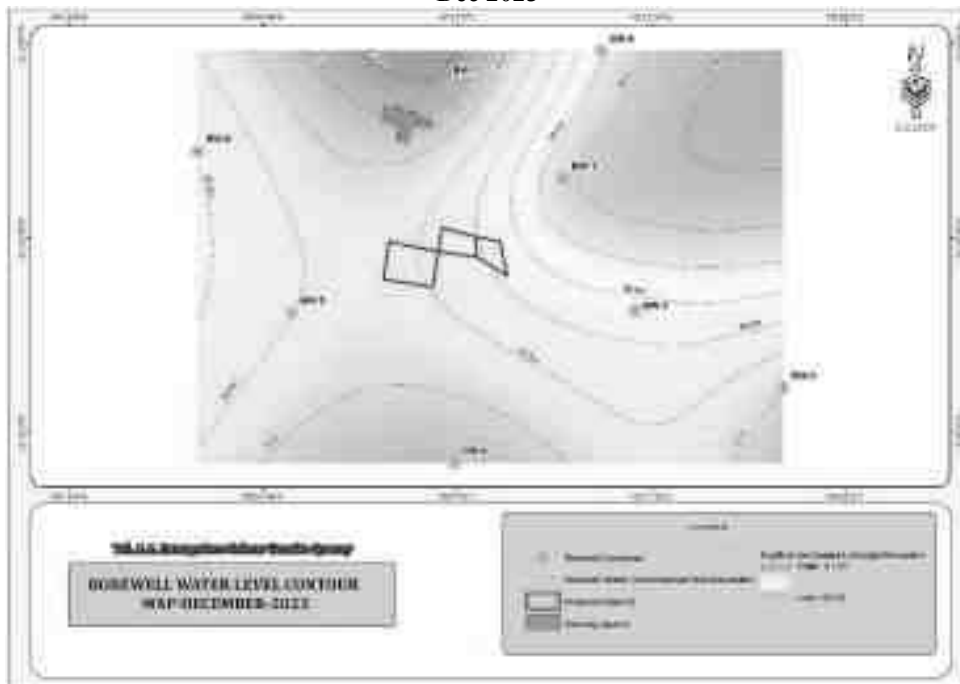


Figure 3.12: Drainage Map Around 10 Km Radius from Project Site

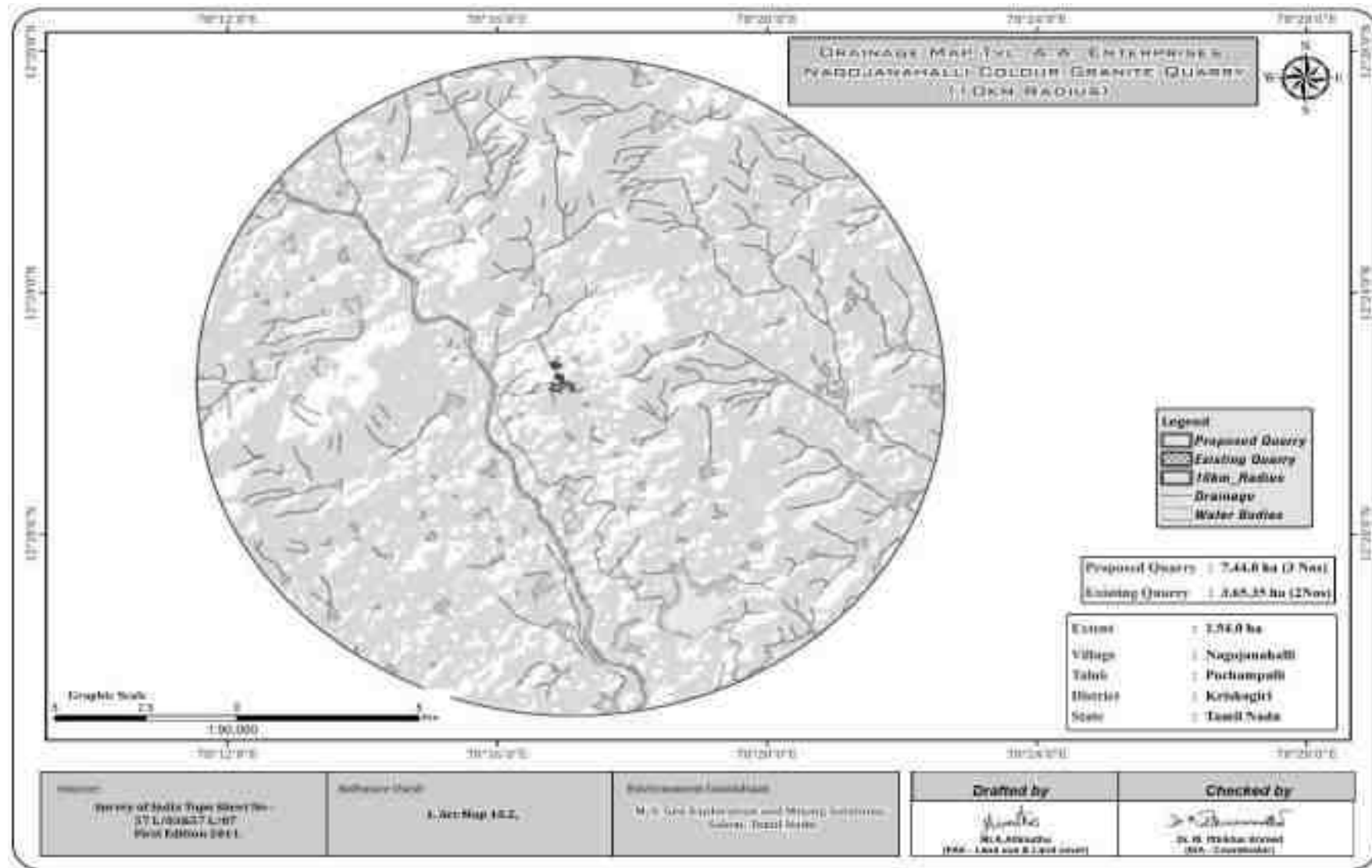
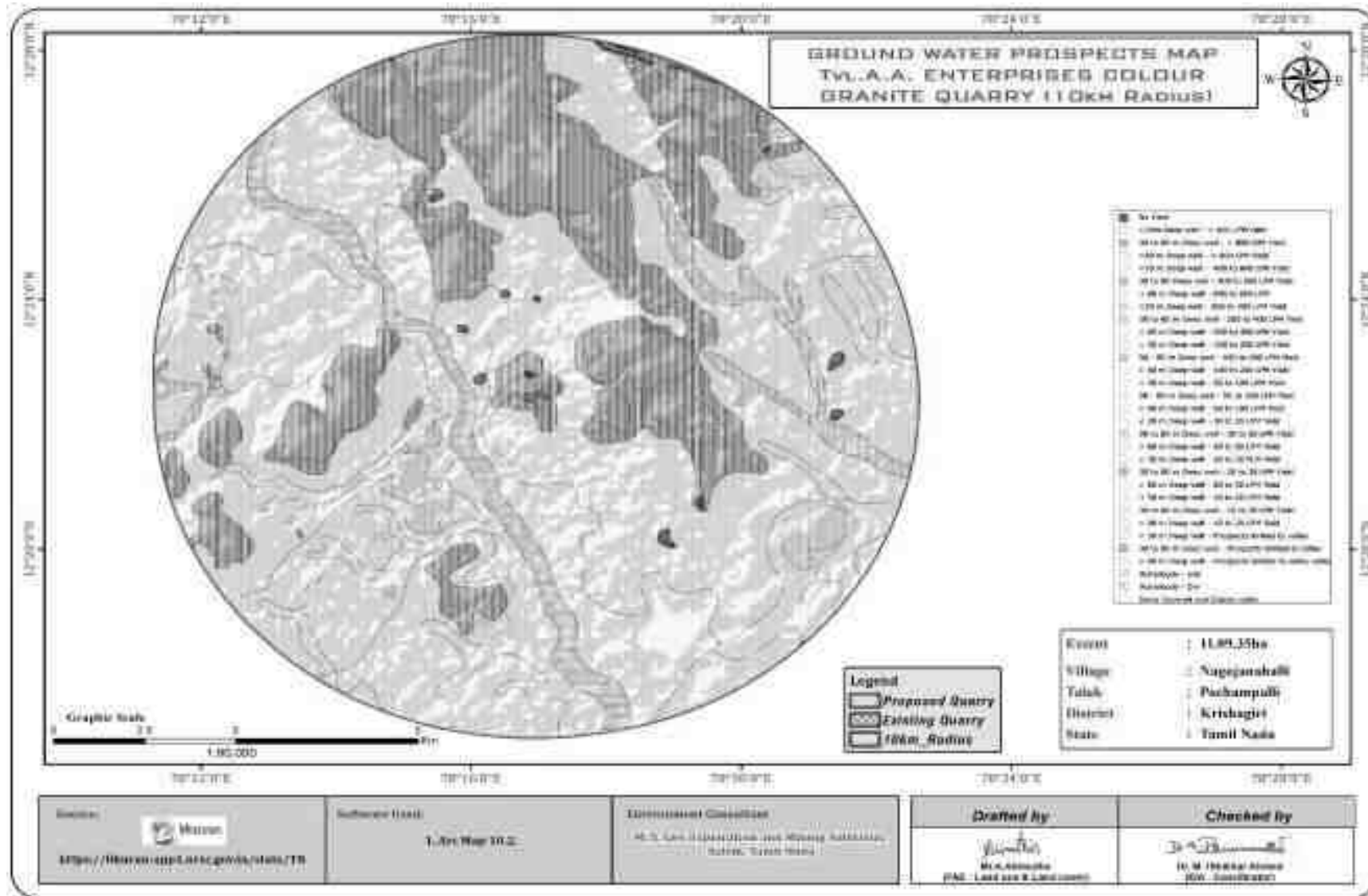


Figure 3.13: Ground Water Prospect Map



3.3 Air Environment

The existing ambient air quality of the area is important for evaluating the impact of mining activities on the ambient air quality. The baseline studies on air environment include identification of specific air pollution parameters and their existing levels in ambient air. The ambient air quality with respect to the study zone of 10 km radius around the cluster forms the baseline information. The sources of air pollution in the region are mostly due to vehicular traffic, dust arising from unpaved village road and domestic & agricultural activities. The prime objective of the baseline air quality study was to establish the existing ambient air quality of the study area. These will also be useful for assessing the conformity to standards of the ambient air quality during the operation of proposed projects in cluster.

This section describes the identification of sampling locations, methodology adopted during the monitoring period and sampling frequency.

3.3.1 Meteorology & Climate

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

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

Climate –

- The climate is tropical in Krishnagiri. In Krishnagiri, the quantity of rainfall during summers surpasses that of winters. This climate is considered to be Aw according to the Köppen-Geiger climate classification. The temperature here averages 25.5 °C | 77.9 °F. The annual precipitation in this location is approximately 773 mm | 30.4 inch.
- Krishnagiri are in the middle of our planet and the summers are not easy to define. The optimal period to plan a visit would be during the months of January, February, March, April, May, June, July, August, September, October, November.
- The driest month is February. There is 6 mm | 0.2 inch of precipitation in February. On average, the highest amount of rainfall occurs during October with a mean value of 144 mm | 5.7 inch.
- With an average of 29.0 °C | 84.2 °F, April is the warmest month. On average, the month of December is considered to be the coldest time of year with temperatures averaging at around 21.9 °C | 71.4 °F.

Source: <https://en.climate-data.org/asia/india/tamil-nadu/krishnagiri-34157/>

Rainfall

Table 3.15: Rainfall Data

Actual Rainfall in mm					Normal Rainfall in mm
2017	2018	2019	2020	2021	
1145.6	510.4	730.0	798.6	985.4	985

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

Table 3.16: Meteorological Data Recorded at Site

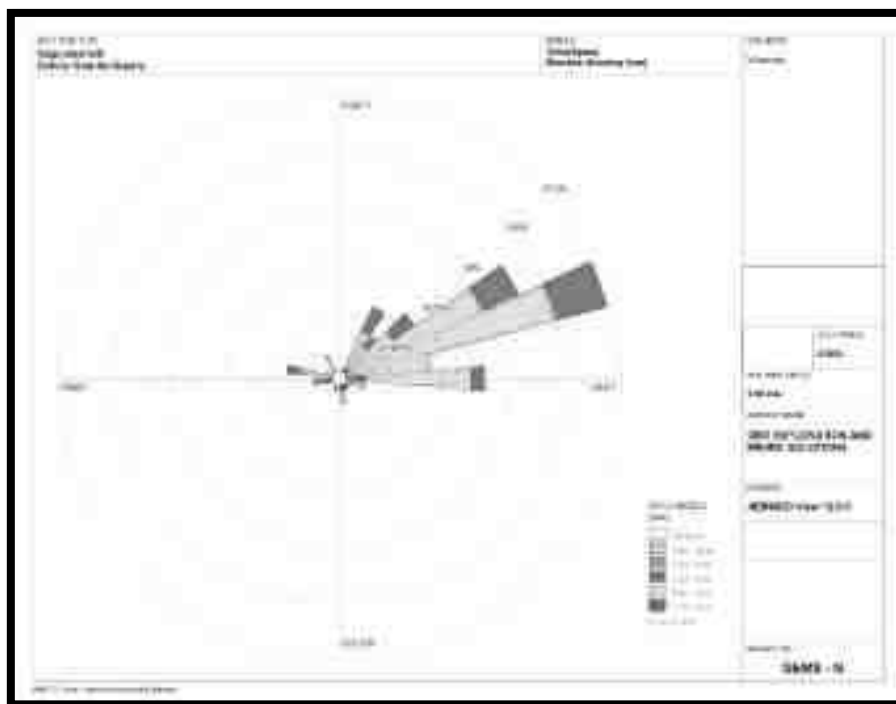
S.No	Parameters		Oct–2023	Nov–2023	Dec–2023
1	Temperature (°C)	Max	25.65	24.22	23.8
		Min	22.01	21.62	19.39

		Avg	23.83	22.92	21.59
2	Relative Humidity (%)	Avg	77.65	88.84	82.87
3	Wind Speed (m/s)	Max	4.85	4.16	4.59
		Min	1.17	1.89	1.66
		Avg	3.01	3.02	3.12
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind Direction		ENE,E	ENE,E	ENE,NE

Correlation between Secondary and Primary Data

The meteorological data collected at the site is almost similar to that of secondary data collected from IMD station. A comparison of site data generated during the three months with that of IMD, Wind rose diagram of the study site is depicted in Figure. 3.14. Predominant downwind direction of the area during study season is North - East to E.

Figure 3.14: Windrose Diagram



Source: Wind Rose plot view, Lake Environmental Software

In the abstract of collected data wind rose were drawn on presented in figure No.3.8 during the monitoring period in the study area

- Predominant winds were from ENE,E
- Wind velocity readings were recorded between 0.50 to 5.70 m/s
- Temperature readings ranging from 19.39 to 25.65°C
- Relative humidity ranging from 77.65 to 88.84 %

3.3.2 Methodology and Objective

The prime objective of the ambient air quality study is to assess the existing air quality of study area and its conformity to NAAQS. The observed sources of air pollution in the study area are industrial, traffic and

domestic activities. The baseline status of the ambient air quality has been established through a scientifically designed ambient air quality monitoring network considering the followings:

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

3.3.3 Sampling and Analytical Techniques

Parameter	Method	Instrument
PM _{2.5}	Gravimetric Method Beta attenuation Method	Fine Particulate Sampler Make – Thermo Environmental Instruments – TEI 121
PM ₁₀	Gravimetric Method Beta attenuation Method	Respirable Dust Sampler Make –Thermo Environmental Instruments – TEI 108
SO ₂	IS-5182 Part II (Improved West & Gaeke method)	Respirable Dust Sampler with gaseous attachment
NO _x	IS-5182 Part II (Jacob & Hochheiser modified method)	Respirable Dust Sampler with gaseous attachment
Free Silica	NIOSH – 7601	Visible Spectrophotometry

Source: Sampling Methodology followed by Omega Laboratories & CPCB Notification

Table 3.17: National Ambient Air Quality Standards

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

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

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

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

3.3.4 Frequency & Parameters for Sampling

Ambient air quality monitoring has been carried out with a frequency of two samples per week at seven (7) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period March to May 2023. The baseline data of ambient air has been generated for PM₁₀, PM_{2.5}, Sulphur Dioxide (SO₂) & Nitrogen Dioxide (NO₂) Monitoring has been carried out as per the CPCB, MoEF guidelines and notifications.

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

3.3.5 Ambient Air Quality Monitoring Stations

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

Table 3.18: Ambient Air Quality (AAQ) Monitoring Locations

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	AAQ-1	Core Zone	Project Area	12°22'29.71"N 78°17'3.64"E
2	AAQ-2	Near Existing Quarry	300m NW	12°22'38.41"N 78°16'57.80"E
3	AAQ-3	N.Thattakkal	750m SE	12°22'13.18"N 78°17'29.94"E
4	AAQ-4	Agaram	4km SW	12°20'31.05"N 78°16'2.65"E
5	AAQ-5	Baleguli	4.8km NW	12°25'5.04"N 78°16'34.32"E
6	AAQ-6	Periyakaradiyur	5.8km SE	12°20'24.16"N 78°19'33.22"E
7	AAQ-7	Penneswaramadam	4.6km NW	12°23'36.90"N 78°14'42.54"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

Figure 3.15: Site Photographs of Ambient Air Quality Monitoring

Source: Field Photos

Figure 3.16: Ambient Air Quality Locations Around 10 Km Radius

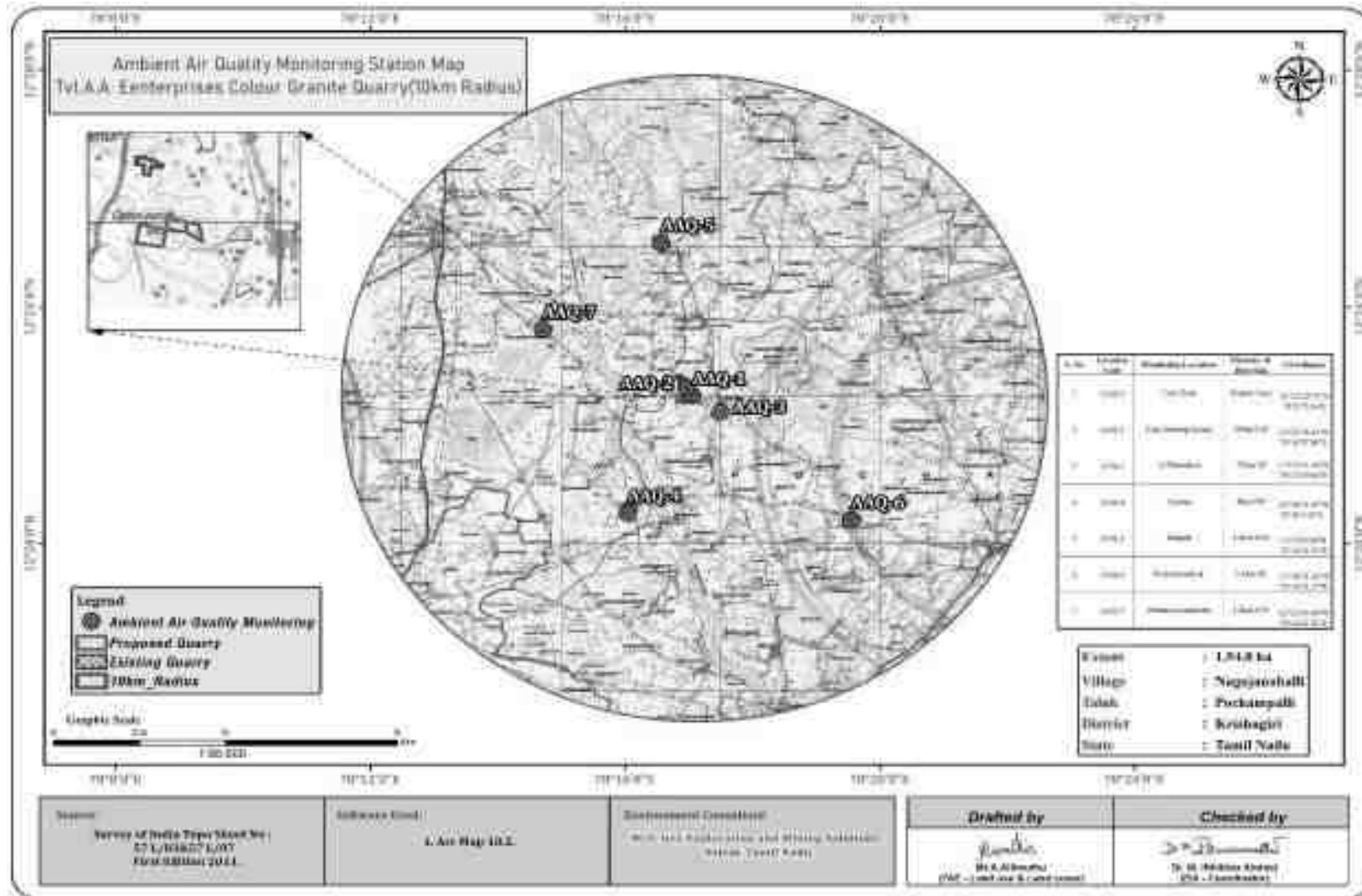


Table 3.19: Abstract of Ambient Air Quality Data

1	Parameter	PM10	PM2.5	SO ₂	NO ₂
2	No. of Observations	260	260	260	260
3	98 th Percentile Value	44.3	23.9	7.5	25.2
4	Arithmetic Mean	41.1	20.5	6.0	21.5
5	Geometric Mean	41.0	20.4	5.9	21.5
6	Standard Deviation	2.1	2.3	1.1	1.6
7	Minimum	37.4	16.7	4.4	19.5
8	Maximum	44.3	23.9	7.5	25.2
9	NAAQ Norms*	100.0	60.0	80.0	80.0
	% Values exceeding Norms*	0.0	0.0	0.0	0.0

Table 3.20: Summary of Ambient Air Quality Data (AAQ1-AAQ7)

PM2.5	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	21.8	21.0	20.3	20.0	40.0	39.5	18.4
Minimum	19.1	17.9	17.5	16.2	15.8	15.4	15.8
Maximum	24.5	27.2	22.5	22.5	22.8	22.9	22.9
NAAQ Norms	60.0	60.0	60.0	60.0	60.0	60.0	60.0
PM10	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	42.5	41.4	40.9	40.6	40.0	40.0	38.6
Minimum	39.7	38.6	37.2	36.7	35.1	35.8	31.6
Maximum	45.7	43.7	42.9	42.1	42.9	43.0	42.6
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SO₂	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	5.4	5.4	6.1	5.5	5.6	5.9	5.5
Minimum	4.1	4.1	4.7	4.1	4.1	4.4	4.1
Maximum	7.4	6.9	7.7	7.4	7.4	7.1	7.5
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0
NO₂	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	20.8	21.3	20.4	21.1	21.2	21.0	20.9
Minimum	17.9	18.4	17.8	18.4	19.1	19.0	18.3
Maximum	22.6	25.8	22.4	24.5	23.3	23.1	27.2
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

FIGURE 3.17: BAR DIAGRAM OF SUMMARY OF AIR QUALITY MODEL(AAQ1-AAQ7)

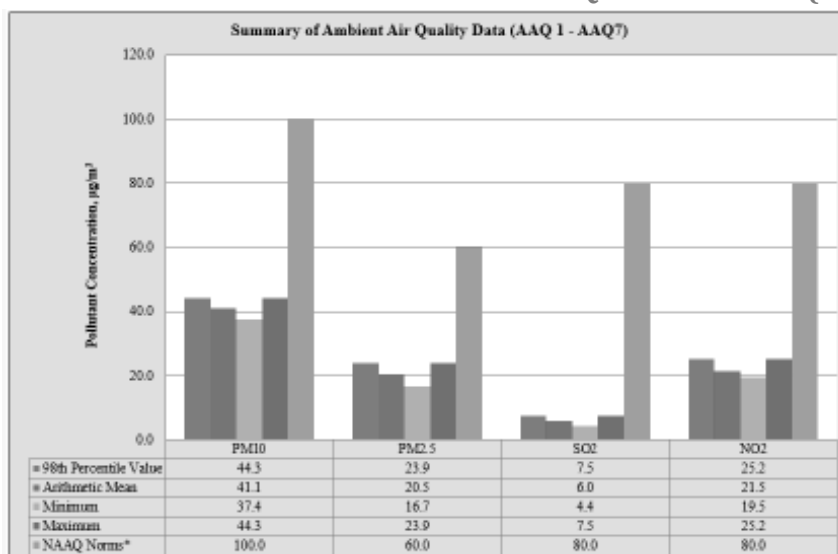


FIGURE 3.18 : BAR DIAGRAM OF PARTICULATE MATTER (PM_{2.5})

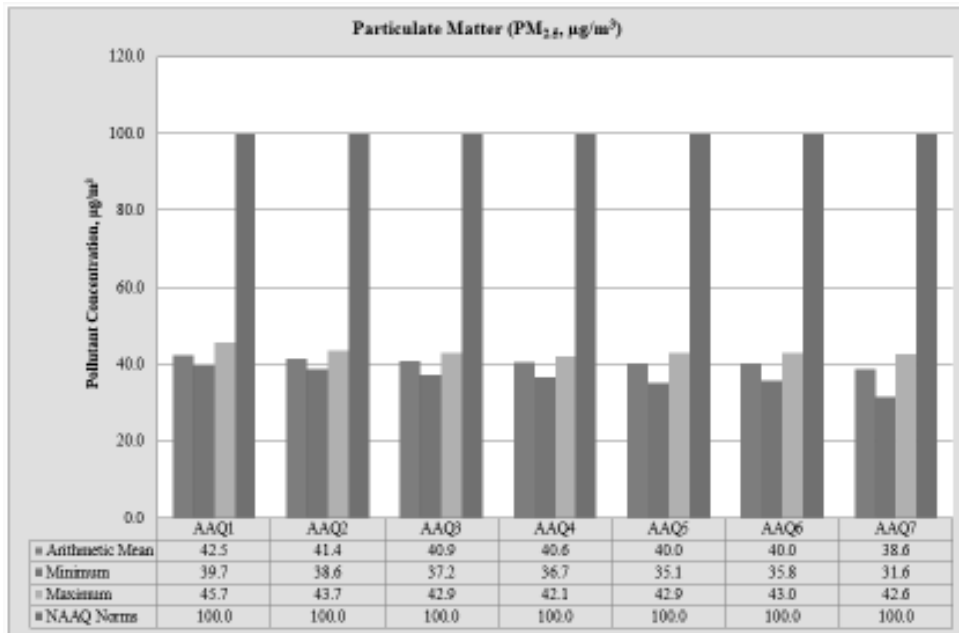


FIGURE 3.19: BAR DIAGRAM OF PARTICULATE MATTER (PM₁₀)

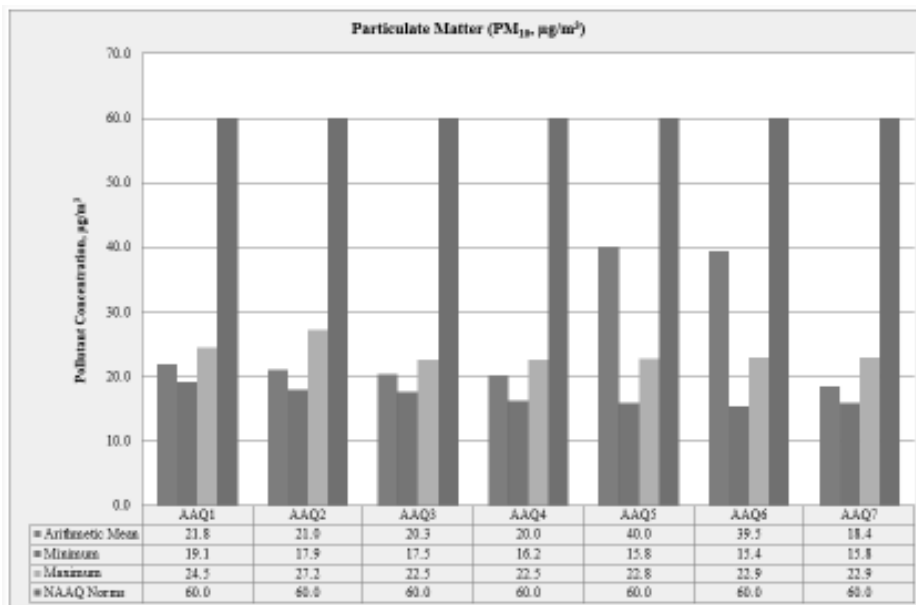


FIGURE 3.20: BAR DIAGRAM OF PARTICULATE MATTER (SO₂)

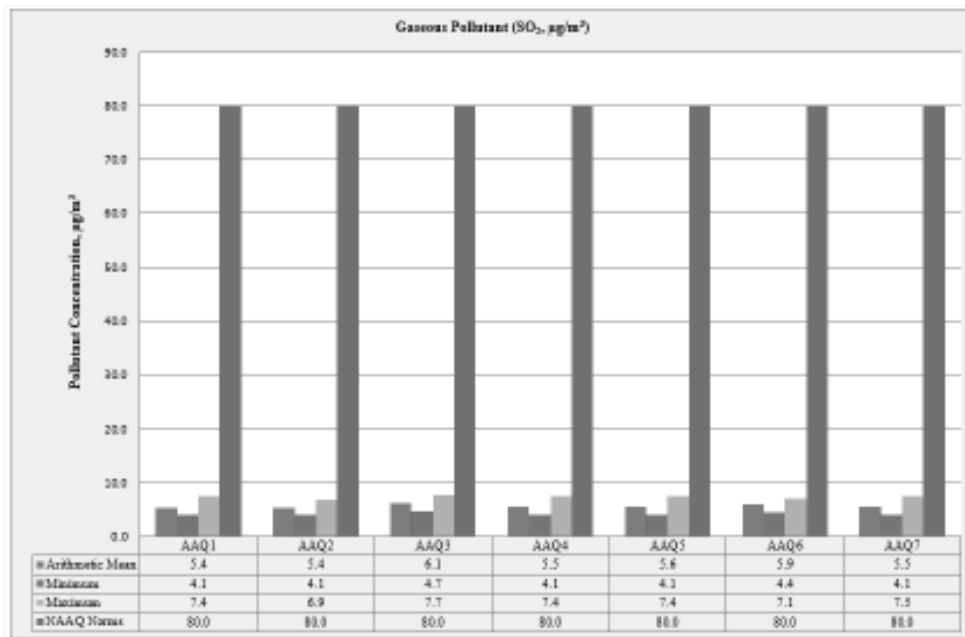
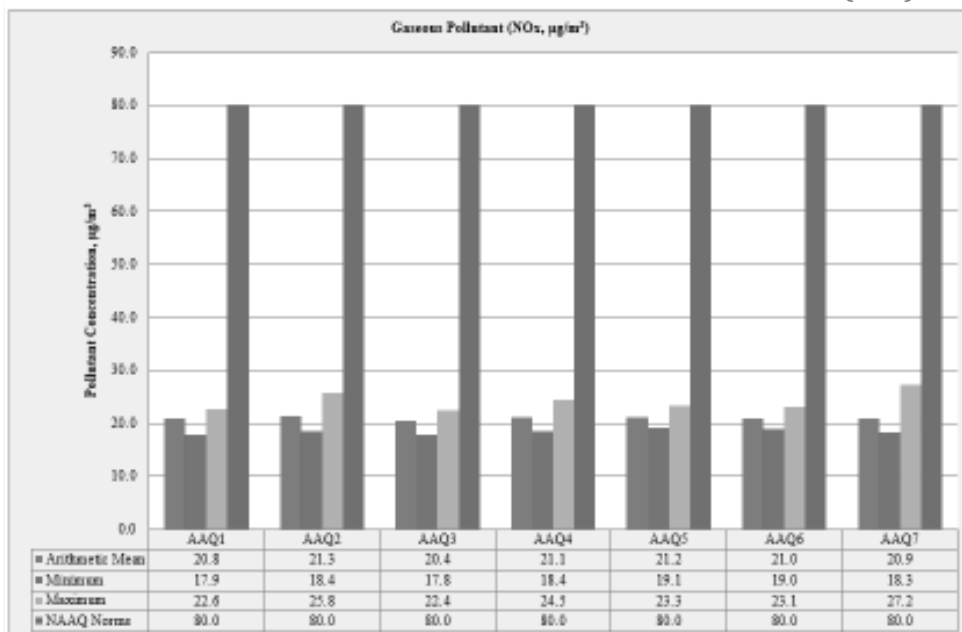


FIGURE 3.21: BAR DIAGRAM OF PARTICULATE MATTER (NO_x)



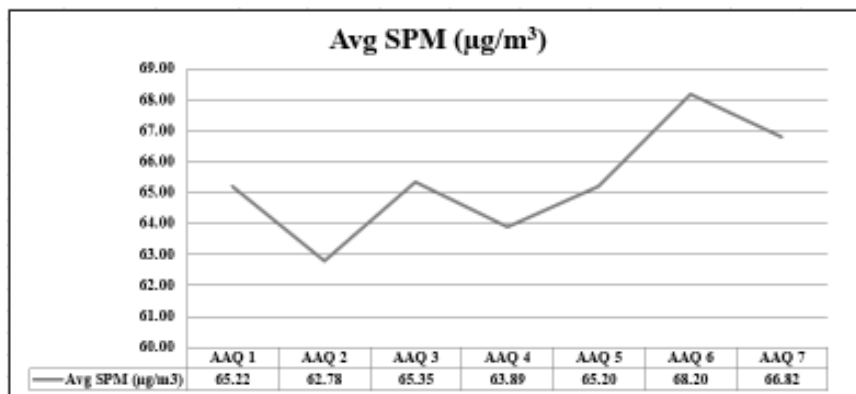
3.3.7 FUGITIVE DUST EMISSION –

Fugitive dust was recorded at 7AAQ monitoring stations for 30 days average during the study period.

TABLE 3.21: FUGITIVE DUST SAMPLE VALUES IN µg/m³

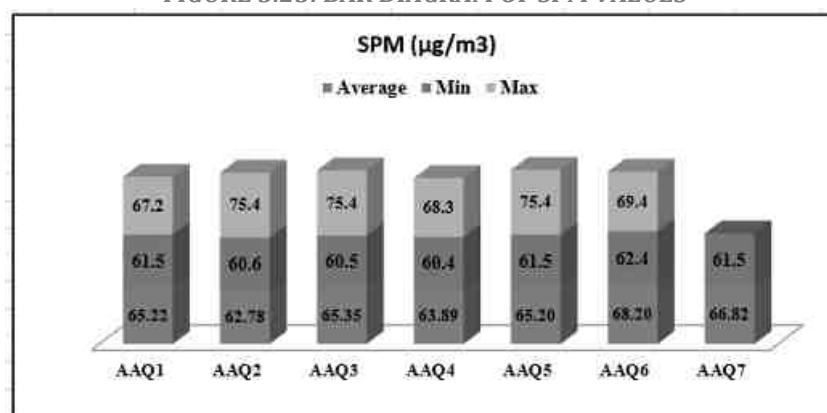
SPM (µg/m ³)	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Average	65.22	62.78	65.35	63.89	65.20	68.20	66.82
Min	61.5	60.6	60.5	60.4	61.5	62.4	61.5
Max	67.2	67.2	75.4	75.4	68.3	75.4	69.4

FIGURE 3.22: LINE DIAGRAM OF AVERAGE SPM VALUES



Source: Calculations from Lab Analysis Reports

FIGURE 3.23: BAR DIAGRAM OF SPM VALUES



3.3.6 Interpretations & Conclusion

As per monitoring data, PM₁₀ ranges from 31.6 µg/m³ to 45.7 µg/m³, PM_{2.5} data ranges from 15.4 µg/m³ to 27.2 µg/m³, SO₂ ranges from 4.1µg/m³ to 7.7µg/m³ and NO₂ data ranges from 17.8 µg/m³ to 27.2 µg/m³. The concentration levels of the above criteria pollutants were observed to be well within the limits of NAAQS prescribed by CPCB.

3.4 Noise Environment

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

3.4.1 Identification of Sampling Locations

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

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

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

Table 3.22: Details of Noise Monitoring Locations

S. No	Location code	Monitoring Locations	Distance & Direction	Coordinates
1	N1	Core Zone	Project Area	12°22'25.34"N 78°17'6.60"E
2	N2	Near Existing Quarry	300m NW	12°22'38.31"N 78°16'58.15"E
3	N3	N.Thattakkal	750m SE	12°22'12.77"N 78°17'29.95"E
4	N4	Agaram	4km SW	12°20'30.30"N 78°16'3.60"E
5	N5	Baleguli	4.8km NW	12°25'5.07"N 78°16'34.61"E
6	N6	Periyakaradiyur	5.8km SE	12°20'24.31"N 78°19'32.92"E
7	N7	Penneswaramadam	4.6km NW	12°23'37.06"N 78°14'42.38"E

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

**FIGURE 3.24. Collection of Noise Sample**

3.4.2 Method of Monitoring

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

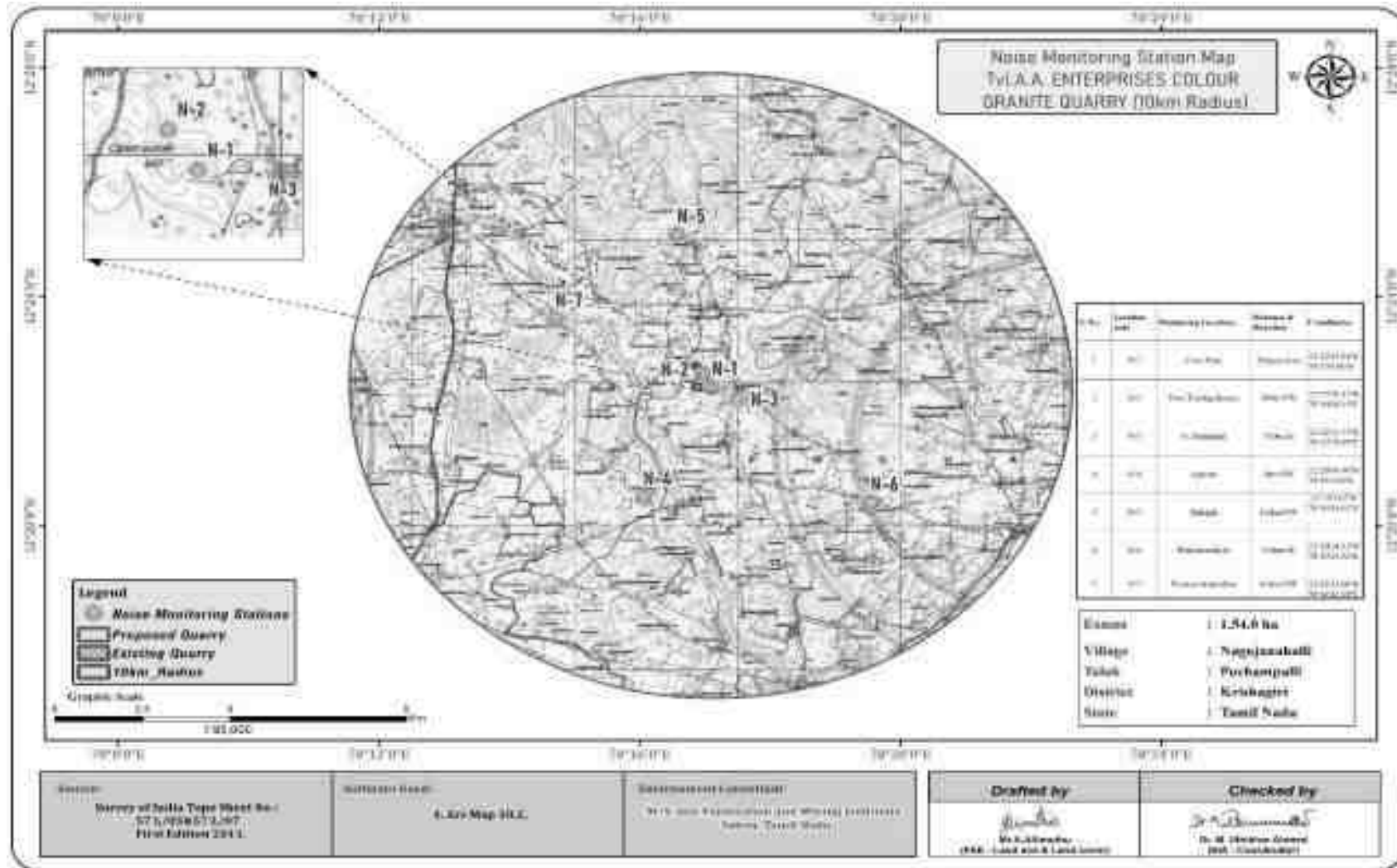
Measured noise levels, displayed as a function of time, is useful for describing the acoustical climate of the community. Noise levels recorded at each station with a time interval of about 60 minutes are computed for equivalent noise levels. Equivalent noise level is a single number descriptor for describing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

$$L_{eq} = 10 \log L / T \sum (10L_n/10)$$

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

T = Time interval of observation

Figure 3.25: Noise Monitoring Stations Around 10 Km Radius



3.4.3 Analysis of Ambient Noise Level in the Study Area

The Digital Sound pressure level have been measured by a sound level meter (Model: HTC SL-1352) An analysis of the different Leq data obtained during the study period has been made. Variation was noted during the day-time as well as night-time. The results are presented in below Table 3.6

Day time: 6:00 hours to 22.00 hours.

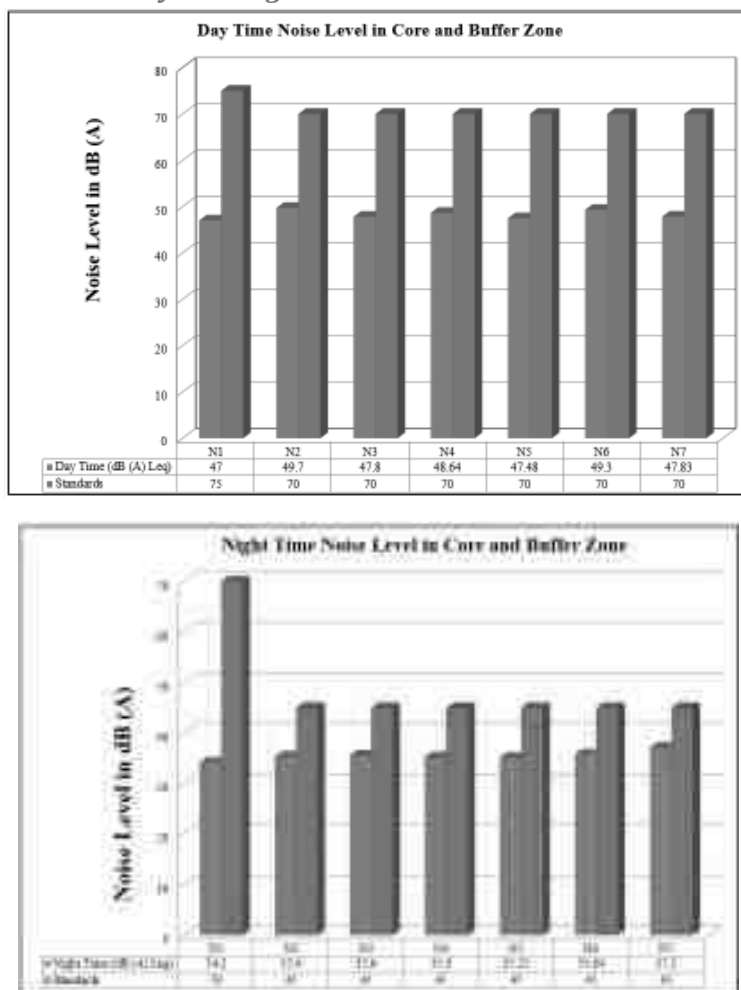
Night time: 22:00 hours to 6.00 hours.

Table 3.23: Ambient Noise Quality Result

S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
1	Core Zone	47.0	34.2	Industrial Day Time- 75 dB (A) Night Time- 70 dB (A)
2	Near Existing Quarry	49.7	35.4	
3	N.Thattakkal	47.8	35.6	
4	Agaram	48.64	35.30	Residential Day Time- 55 dB (A) Night Time- 45 dB (A)
5	Baleguli	47.48	35.21	
6	Periyakaradiyur	49.30	35.84	
7	Penneswaramadam	47.83	37.20	

Source: On-site monitoring/sampling by Global Lab and Consultancy Services in association with GEMS

Figure 3.26: Day and Night Time Noise Levels In Core And Buffer



3.4.4 Interpretation & Conclusion:

Ambient noise levels were measured at 7 (Seven) locations around the proposed project area. Noise levels recorded in core zone during day time were from 47 dB (A) Leq and during night time were from 34.2 dB (A) Leq. Noise levels recorded in buffer zone during day time were from 47.48 to 49.7 dB (A) Leq and during night time were from 35.21 to 37.2 dB (A) Leq. Thus, the noise level for Industrial and Residential area meets the requirements of CPCB.

3.5 Ecological Environment

3.5.1. Study area Ecology

The core area extent of 1.54.0 Ha of Colour Granite Quarry has an impact on the diversity of flora and fauna of the surrounding area. But present work was carried out on the detailed study of the impacts of the Colour Granite Quarry on the ecology and biodiversity of the core lease area with the proper mitigation and sustainable management plan. The proposed mine lease area is situated on a hilly terrain. The following methods were applied during the baseline study of flora, fauna and diversity assessment.

3.5.2. Objectives of Biological Studies

- a) Undertake an intensive field survey to assess the status of floral & faunal component in different habitats in the core and buffer areas of the project site.
- b) Identification and listing of flora and fauna which are important as per the Wildlife (Protection) Act 1972.
- c) Suggest Wildlife conservation (species specific/habitat specific) and management plan for the threatened (critically endangered & endangered species - schedule I) faunal species if any reported within the study area.
- d) To identify the impacts of mining on agricultural lands and how it affects.
- e) Proper collection of information about wildlife Sanctuaries/ national parks/ biosphere reserves of the project area.
- f) Devise management & conservation measures for biodiversity.

3.5.3. Methodology of Sampling

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

The faunal elements (animal species) of core and buffer zone were identified by direct sightings or indirect evidences viz. pug marks, skeletal remains, scats and droppings etc. (Jayson and Easa 2004). Standard binocular was used for the observations. The authenticity of faunal elements occurrence was confirmed by interaction with the local people. Avifauna identification was done with pictorial descriptions of published literature. Information pertaining to existence of any migratory corridors and paths were obtained from local inhabitants. The status of each faunal element was determined and the Wildlife schedule category was ascertained as per the IUCN-Red Data Book and Indian wildlife (Protection) Act, 1972.

Plot method is used in the floral documentation in the core and buffer zone. For trees (10x10-m), shrubs (5x5-m) and herbs (1x1-m) plots were taken. Birds and butterflies were mainly focused during faunal assessment, transect method was employed for birds and butterflies. Transect is a path along which one counts and records the occurrence of an individual for study. A straight-line walk covering desired distance, within a time span of one hour to 30 minutes was carried out in the proposed region. Bird species were recorded during the hours of peak activity. 0700 to 1100 Hrs and 1430 to 1730 Hrs (Bibby et al. 2000).

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

3.5.3.1. Sampling

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

3.5.3.2. Sampling Size

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

3.5.3.3. Timing of Study

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

3.5.3.4. Observations from Sampling

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

3.5.3.5. Equipment/ References

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

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

3.5.4. Part I Field Sampling Techniques

3.5.4.1. Transect walk – Birds

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

3.5.4.2. Modified Pollard Walk – for Butterflies

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

3.5.4.3. Visual Encounter Survey (VES) - reptiles and Amphibians

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

3.5.4.4. Observational methods- Mammals

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

3.5.4.5. Multiple Stage Quadrat – Vegetation

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

3.5.5. Flora

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

3.5.5.1. Flora Composition in the Core Zone

Taxonomically a total of 25 species belonging to 14 families have been recorded from the core zone mining lease area. The area is situated on a hilly terrain. The gradient is 1 in 8.6 towards the eastern side. Based on the habitat classification of the enumerated plants the majority of species were Trees 10, followed by Herbs 9,

Shrubs 3, and Grass 3. Details of flora with the scientific name were mentioned in Table No. 3.24. The result of the core zone of flora studies shows that Fabaceae and Poaceae, Euphorbiaceae are the main dominating species in the study area mentioned in Table No.3.24. No species were found as threatened category.

Table No: 3.24. Flora in the Core zone of Nagojanahalli Village, Colour Granite quarry

SI. No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
2.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	Arecaceae
3.	Millettia pinnata	Pongam oiltree	<i>Pongamia pinnata</i>	Fabaceae
4.	Pala indigo	Pala maram	<i>Wrightia tinctoria</i>	Apocynaceae
5.	Bitter Albizia	Arappu Tree	<i>Albizia amara</i>	Fabaceae
6.	Gum arabic tree	Karuvelam	<i>Acacia nilotica</i>	Fabaceae
7.	Neem	Vembu	<i>Azadirachta indica</i>	Meliaceae
8.	River tamarind	Savundal maram	<i>Leucaena leucocephala</i>	Fabaceae
9.	White Bark Acacia	Vela maram	<i>Vachellia leucophloea</i>	Fabaceae
10.	Chinese chaste tree	Nochi	<i>Vitex negundo</i>	Verbenaceae
Shrubs				
1.	Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
2.	Tanner's cassia	Avaram	<i>Senna auriculata</i>	Fabaceae
3.	Triangular spruce	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
Herbs				
1.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
2.	Asthma-plant	Amman pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae
3.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
4.	Carrot grass	Partiniyam	<i>Parthenium hysterophorus</i>	Asteraceae
5.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
6.	Giant Aloe vera	Kattu katrazhai	<i>Aloe vera</i>	Asphodelaceae
7.	Bindii	Nerunji mullu	<i>Tribulus terrestris</i>	Zygophyllaceae
8.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
9.	Prickly chaff flower	Nayuruv	<i>Achyranthes aspera</i>	Amaranthaceae
Grass				
1.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
2.	Great brome	Thodappam	<i>Bromus diandrus</i>	Poaceae
3.	Nut grass	Korai	<i>Cyperus rotandus</i>	Poaceae

(Sources: Species observation in the field study)



a. *Borassus flabellifer*



b. *Azadirachta indica*



c. *Lantana camara*



d. *Aloe vera*



e. *Acacia nilotica*



f. *Parthenium hysterophorus*



g. *Vitex negundo*



h. *Prosopis juliflora*



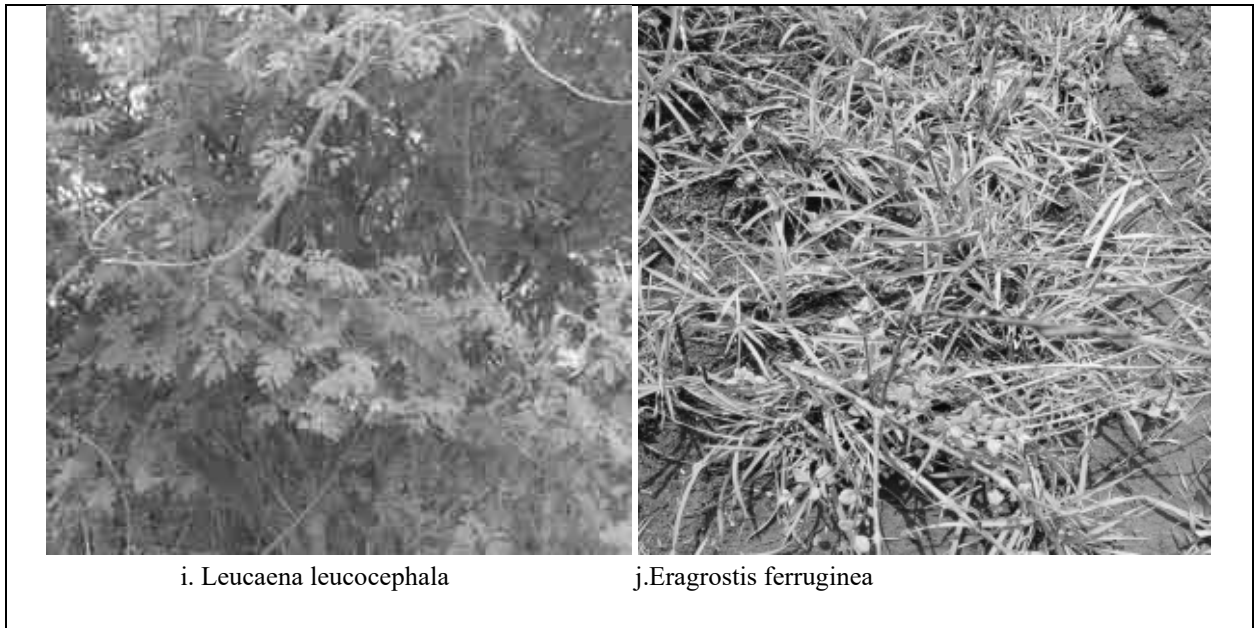


Fig No: 3.27. Flora species observation in the Core zone area

Table No: 3.25. Flora in Buffer Zone of Nagojanahalli Village, Colour Granite Quarry, Krishnagiri District, Tamil Nadu.

S.No.	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	White Bark Acacia	Vela maram	<i>Vachellia leucophloea</i>	Fabaceae
2.	Wild Date Palm	Icham	<i>Phoenix sylvestris</i>	Arecaceae
3.	Blue gum	Thayala maram	<i>Eucalyptus</i>	Myrtaceae
4.	Indian ash tree	Odiya maram	<i>Lannea coromandelica</i>	Anacardiaceae
5.	Neem	Vembu	<i>Azadirachta indica</i>	Meliaceae
6.	Tamarind	Puliyamaram	<i>Tamarindus indica</i>	Legumes
7.	Jackfruit	Palamaram	<i>Artocarpus heterophyllus</i>	Moraceae
8.	Mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
9.	Coral Tree	Kalyana murungai	<i>Erythrina variegata</i>	Papilionoide
10.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	Arecaceae
11.	Bitter Albizia	Arappu Tree	<i>Albizia amara</i>	Fabaceae
12.	Indian almond	Padam maram	<i>Terminalia catappa</i>	Combretaceae
13.	Banana tree	Vazhaimaram	<i>Musa acuminata</i>	Musaceae
14.	Indian ash tree	Odiya maram	<i>Lannea coromandelica</i>	Anacardiaceae
15.	Curry leaves	Karuveppali	<i>Murraya koenigii</i>	Rutaceae
16.	Lemon	Ezhumuchaipalam	<i>Citrus lemon</i>	Rutaceae
17.	Bidi leaf tree	Thiruvathi Plant	<i>Bauhinia racemosa</i>	Fabaceae
18.	Rusty Acacia	Parambai	<i>Acacia ferruginea</i>	Mimosaceae
19.	Mango	Manga	<i>Mangifera indica</i>	Anacardiaceae
20.	Peepal	Arasanmaram	<i>Ficus religiosa</i>	Moraceae
21.	Yellow flame tree	Perunkondrai	<i>Peltophorum pterocarpum</i>	Fabaceae
22.	Custard apple	Seethapazham	<i>Annona reticulata</i>	Annonaceae
23.	Flamboyant	Cemmayir-konrai	<i>Delonix regia</i>	Fabaceae
24.	Chinaberry	Malai vembu	<i>Melia azedarach L.</i>	Meliaceae
25.	Monkey pod tree	Thungumoonchi	<i>Samanea saman</i>	Fabaceae
26.	Yellow Flame	Iyalvagai	<i>Peltophorumpterocarpum</i>	Fabaceae
27.	Teak	Thekku	<i>Tectona grandis</i>	Verbenaceae

28.	Indian gooseberry	Nelli	<i>Emblica officinalis</i>	Phyllanthaceae
29.	Henna	Marudaani	<i>Lawsonia inermis</i>	Lythraceae
30.	Black Siris	Karuvagai	<i>Albizia odoratissima</i>	Mimosaceae
31.	Madras thorn	Kudukapuli	<i>Pithecellobium dulce</i>	Fabaceae
32.	-	Karukaya	<i>Ziziphus trinervia R</i>	Rhamnaceae
33.	Malayan Cherry	Ten Pazham	<i>Muntingia calabura</i>	Muntingiaceae
34.	Pomegranate	Mathulai	<i>Punica granatum</i>	Lythraceae
35.	Jamun Fruit Plant	Naval maram	<i>Syzygium cumini</i>	Myrtaceae
36.	Banyan tree	Alamaram	<i>Ficus benghalensis</i>	Moraceae
37.	Chinese chaste tree	Nochi	<i>Vitex negundo</i>	Verbenaceae
38.	Ceylon satinwood	Porasu	<i>Chloroxylon swietenia</i>	Rutaceae
39.	Indian Jujube	Ilanthai	<i>Ziziphus jujuba</i>	Rhamnaceae
40.	Millettia pinnata	Pongam oiltree	<i>Pongamia pinnata</i>	Fabaceae
41.	Coconut	Thennai maram	<i>Cocos nucifera</i>	Arecaceae
42.	Guava	Koyya	<i>Psidium guajava</i>	Myrtaceae
43.	Notched Leaf Soapnut	Poovankottai	<i>Sapindus emarginata</i>	Sapindaceae
44.	Pala indigo	Pala maram	<i>Wrightia tinctoria</i>	Apocynaceae
45.	River tamarind	Savundal maram	<i>Leucaena leucocephala</i>	Fabaceae
46.	Portia tree	Poovarasam	<i>Thespesia populnea</i>	Malvaceae
47.	Drumstick tree	Murunga maram	<i>Moringa oleifera</i>	Moringaceae
48.	Sacred Tree	Porasu	<i>Butea monosperma</i>	Fabaceae
49.	Mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
50.	Papaya	Pappali maram	<i>Carica papaya L</i>	Caricaceae
51.	Bamboo	Moonghil	<i>Bambusa bambo</i>	Poaceae
Shrubs				
1.	Tanner's cassia	Avaram	<i>Senna auriculata</i>	Fabaceae
2.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
3.	Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
4.	Triangular spruge	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
5.	Night shade plan	Sundaika	<i>Solanum torvum</i>	Solanaceae
6.	-	Odankodi	<i>Hippocratea indica</i>	Odankodi
7.	Broom creeper	Kattukodi	<i>Cocculus hirsutus</i>	Menispermaceae

8.	Solanum pubescens	Malaisundai	<i>Solanum pubescens Willd</i>	Solanaceae
9.	Indian Oleander	Arali	<i>Nerium indicum</i>	Apocynaceae
10.	Shoe flower	Chemparuthi	<i>Hibiscu rosa-sinensis</i>	Malvaceae
11.	Puriging nut	Kattamanakku	<i>Jatropha curcas</i>	Euphorbiaceae
12.	Jackal jujube	Suraimullu	<i>Ziziphus oenoplia</i>	Rhamnaceae
13.	Touch-me-not	Thottalchinungi	<i>Mimosa pudica</i>	Mimosaceae
14.	Chinese chastetree	Nalla nochi	<i>Vitex negundo L</i>	Verbinaceae
15.	Prickly pear	Nagathali	<i>Opuntia dillenii</i>	Cactaceae
16.	Triangular spruge	Chaturakalli	<i>Euphorbia antiquorum</i>	Euphorbiaceae
17.	Thorn apple	Oomathai	<i>Datura stramonium</i>	Solanaceae
18.	Malabar catmint	Pei veratti	<i>Anisomeles malabarica</i>	Lamiaceae
19.	Indian mallow	Thuthi	<i>Abutilon indicum</i>	Meliaceae
20.	Bush Morning Glory	Neiveli Kattamani	<i>Ipomoea carnea</i>	Convolvulaceae
21.	Carray Cheddle	Kaarai	<i>Canthiumparviflorum</i>	Rubiaceae
22.	Castor oil plant	Amanakku	<i>Ricinus communis</i>	Euphorbiaceae
23.	Flame of the Woods	Idlipoo	<i>Xoracoc cinea</i>	Rubiaceae
Herbs				
1.	Eggplant	Kathrikkai	<i>Solanum melongena</i>	Solanaceae
2.	Aloe barbadensis	Katrzhai	<i>Aloe vera</i>	Asphodelaceae
3.	Mountain knotgrass	Thengaipoo kirai	<i>Aerva lanata</i>	Amaranthaceae
4.	Ash Fleabane	Puvangkuruntal	<i>Vernonia cinerea</i>	Asteraceae
5.	Bindii	Nerunchi	<i>Tribulus terrestris</i>	Zygophyllaceae
6.	Fish poison	Kolinchi	<i>Tephrosia purpurea</i>	Fabaceae
7.	Bara Gokhru	Yanainerunjil	<i>Pedaliium murex</i>	Pedaliaceae
8.	Commelina benghalensis	Kanavazha	<i>Commelina benghalensis</i>	Commelinaceae
9.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
10.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
11.	Chay root	Chaaya ver	<i>Oldenlandia umbellata</i>	Rubiaceae
12.	Slender dwarf morning-glory	Vittunu-k-kiranti	<i>Evolvulus alsinoides</i>	Convolvulaceae
13.	Spiny amaranth	Mullu keerai	<i>Amaranthus spinosus</i>	Amaranthaceae
14.	Cracker plant	Tapas kaaya	<i>Ruellia tuberosa</i>	Acanthaceae
15.	Chilli	Milakai	<i>Capsicum annum</i>	Solanaceae

16.	Indian Copperleaf	Kuppaimeni	<i>Acalypha indica</i>	Euphorbiaceae
17.	Madagascar Periwinkle	Nithyakalyani Podi	<i>Catharanthus roseus</i>	Apocynaceae
18.	Asian spiderflower	Naaikaduku	<i>Cleome viscosa L</i>	Cleomaceae
19.	<i>Digeria muricata</i>	Thoiya keera	<i>Digeria muricata</i>	Amaranthaceae
20.	Asthma-plant	Amman pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae
21.	Tomato	Thakkali	<i>Solanum lycopersicum</i>	Solanaceae
22.	White dammar	Mookutipoondu	<i>Vicoa indica</i>	Asteraceae
23.	<i>Cleome viscosa</i>	Nai kadugu	<i>Celome viscosa</i>	Capparidaceae
24.	Bindii	Nerunji mullu	<i>Tribulus terrestris</i>	Zygophyllaceae
25.	Prickly chaff flower	Nayuruv	<i>Achyranthes aspera</i>	Amaranthaceae
26.	Field beans	Avarai	<i>Hyacinth Beans</i>	Fabaceae
27.	False daisy	Karisalankanni	<i>Eclipta alba</i>	Asteraceae
28.	Sessile Joyweed	Ponnakanni	<i>Alternanthera sessilis</i>	Amaranthaceae
29.	Chilli	Milakai	<i>Capsicum annum</i>	Solanaceae
30.	Red Spiderling	Mukirattai	<i>Boerhavia diffusa</i>	Nyctaginaceae
31.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
32.	Spiny amaranth	Mullu keera	<i>Amaranthus spinosus</i>	Amaranthaceae
33.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
34.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
35.	Indian mint	Karpura valli	<i>Coleus amboinicus</i>	Lamiaceae
36.	<i>Aloe barbadensis</i>	Katrashai	<i>Aloe vera</i>	Asphodelaceae
37.	Ban Tulsi	Melakai poondu	<i>Croton bonplandianus</i>	Euphorbiaceae
38.	Europeanblack nightshade	Manathakkali	<i>Solanumnigrum</i>	Solanaceae
39.	Ladies' fingers	Vendakkai	<i>Abelmoschus esculentus</i>	Malvaceae
40.	Majjigeberru gida	Purpannai	<i>Aerva monsoniae</i>	Amaranthaceae
41.	Vigna mungo	Ulunthu	<i>Vigna mungo</i>	Fabaceae
42.	chicken weed	Sirupasalai	<i>Portulaca quadrifida L</i>	Portulacaceae
43.	Bright eyes	Nithiyakalyani	<i>Catharanthus roseus</i>	Apocynaceae
44.	Carrot grass	Parttiniyam	<i>Parthenium hysterophorus</i>	Asteraceae
45.	Indian mint	Karpura valli	<i>Coleus amboinicus</i>	Lamiaceae
Climber/ Creeper				
1.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae

2.	Ivy gourd	Kovai	<i>Coccinia grandis</i>	Cucurbitaceae
3.	Balloon plant	Mudakrttan	<i>Cardiospermum halicacabum</i>	Sapindaceae
4.	Bitter apple	Peikkumatti	<i>Citrullus colocynthis</i>	Cucurbitaceae
5.	Butterfly pea	Sangu poo	<i>Clitoria ternatea</i>	Fabaceae
6.	Wild jasmine	Malli	<i>Jasminum augustifolium</i>	Oleaceae
7.	Betel	Vettilai	<i>Piper betle</i>	Piperaceae
8.	Pointed gourd	Kovakkai	<i>Trichosanthes dioica</i>	Cucurbitaceae
9.	Wild bitter	Pavarkai	<i>Momordica charantia</i>	Cucurbitaceae
10.	Bottle Guard	Sorakkai	<i>Lagenaria siceraria</i>	Cucurbitaceae
11.	White pumpkin	Poosanaikkaai	<i>Cucurbitaceae</i>	Cucurbitaceae
12.	Rosary Pea	Gundumani	<i>Abrus precatorius</i>	Fabaceae
13.	Nut grass	Korai	<i>Cyperus rotandus</i>	Poaceae
14.	Cucumis maderaspatanus	Musumusukkai	<i>Mukia maderaspatana</i>	Cucurbitaceae
Grass				
1.	Jungle rice	Kuthirai vaalKattu arusi	<i>Echinochloa colona</i>	Poaceae
2.	Mauritian Grass	Moongil pul	<i>Apluda mutica</i>	Amaranthaceae
3.	Swollen Windmill Grass	Kondai Pul	<i>Chloris barbata</i>	Poaceae
4.	Needle Grass	Thodappam	<i>Aristida adscensionis</i>	Poaceae
5.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
6.	Needle Grass	-	<i>Aristida funiculata</i>	Poaceae
7.	Windmill grass	Chevvarakupul	<i>Chloris barbata</i>	Poaceae

*E- Economical, M- Medicinal, EM- Both Economical and Medicinal, NE- Not evaluated.

(Sources: Species observation in the field study)

3.5.5.2. Economically important Flora of the study area

The major irrigated crops in the district are paddy, ragi, turmeric, sugarcane, banana, tomato, groundnut, cotton, coconut and flowers. The irrigated area under vegetables, fruit and flowers. Farmers have adopted to cultivation methods through judicious use of water with modern water management techniques and technology.

3.5.5.3. Major Crops in the District

Owing to the climate and soil conditions Krishnagiri District suits to diverse type of cultivation. There are about 26 type of crops grown in the District including medicinal plants. Important crops grown in the district are Paddy, Ragi, Cholam, Red gram, Black gram, Horse Gram, Mango, Coconut, Cabbage, Banana, Tomato, Califlower etc., and the major cash crops are groundnut, flowers and cotton.

Source: DDS – Krishnagiri, 2019

3.6. Flora Composition in the Buffer Zone

Similar habitats may be found in the buffer area as well, although there is a wider variety of plants there than in the core zone area. The buffer zone has some forests located away from the proposed project site and there are 140 species in the buffer zone study area in total, based on records. The floral (140) varieties among them Trees 51, herbs 45, shrubs 23, Climbers 12, and Grasses 7 were identified. The result of the buffer zone of flora studies shows that Fabaceae and Cucurbitaceous, Euphorbiaceae is the main dominating species in the study area mentioned in Table No.3.55. There are no impacts due to this mining activity. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. Apart from the proposed project area, there is agricultural land. Horticulture and agricultural land are untouched. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. A list of floral species has been prepared based on primary survey (site observations) and discussion with local people. The total number of different plant life forms under trees, shrubs, herbs, and climbers is shown in Table 3.26 and their % distribution is shown in Figure 3.28.

Table 3.26: Number of floral life forms in the Study Area

S. No	Plant Life Form	Number of Species
1	Trees	51
2	Shrubs	23
3	Herbs	45
4	Climber/Creepers	14
6	Grass	7
Total No. of Species		140

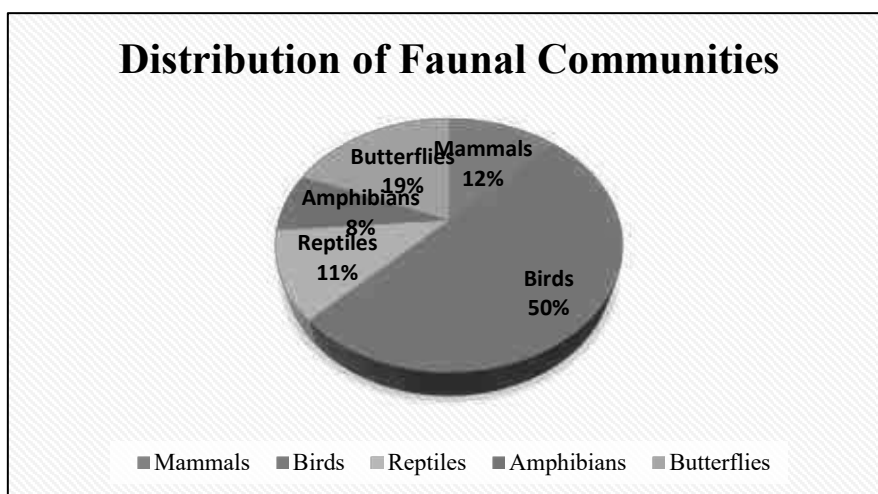


Fig No. 3.28: Diagram showing % distribution of floral life forms

Table No: 3.27. List of medicinal plants recorded from the nearby forest area

S.No	Botanical Name	Family	Local name(s)	Habit	Part(s) used	Uses
1.	<i>Abrus precatorius</i> L.	Fabaceae	Kundumani	CL	Leaves, Seeds	Skin diseases, Eye disease and tooth ache.
2.	<i>Abutilon indicum</i> (L.) Swee	Malvaceae	Thuthi	S	Seed, Root, Barks and Leaves	Urinary troubles, Nervous disorders, Leprosy and Leucorrhoea
3.	<i>Acacia catechu</i> (L.f.) Wild	Mimosaceae	Karungaali	T	Wood	Skin diseases, mouth ulcer, dysentery and Leprosy.
4.	<i>Acacia nilotica</i> (L.) Wild. ex Del. subsp. <i>indica</i> (Benth) Brenan	Mimosaceae	Karuvelam	T	Bark, heartwood, Leaves, Seeds and gum	Urino-genital diseases, wounds, haemorrhage, ulcers, cough and tooth ache.
5.	<i>Acalypha indica</i> L	Euphorbiaceae	Kuppaimeni	H	Whole plant	Eczema, skin diseases, cough and bronchitis, Wounds and ulcer
6.	<i>Erythrina variegata</i>	Papilionoide	Kalyana murungai	T	Whole plant	Laxative, diuretic, anthelmintic, galactagogue and emmenagogue, venereal buboes.
7.	<i>Achyranthes aspera</i> L	Amaranthaceae	Nayurivi	H	Whole plant	Diuretic, astringent, skin diseases and piles
8.	<i>Albizia lebeck</i> (L.) Wild	Mimosaceae	Vaagai	T	Seeds, Leaves, Bark, Flowers and Pod	Eczema, Ulcer, rheumatism, leprosy
9.	<i>Aloe vera</i> (L.) Burm.f.	Asphodelaceae	Chotthukathazhai	H	Leaf juice	Dysentery, leucorrhoea, amenorrhoea, menstrual problems, intestinal worms and skin tonics
10.	<i>Azadirachta indica</i> A. Juss	Meliaceae	Vembu	T	Bark, Leaves, Flower, Seeds and Oil	Antiviral, anthelmintic, insecticide, antiseptic, skin diseases, small pox and clean teeth.
11.	<i>Calotropis gigantea</i>	Asclepiadaceae	Erukku	S	Whole plant	Anthelmintic, skin diseases, leprosy, snake bite, ulcers, piles, cough and asthma
12.	<i>Cissus quadrangularis</i> L.	Vitaceae	Pirandai	CL	Stem	Rheumatoid arthritis, appetizer, bone fracture and nervine tonic.
13.	<i>Ormocarpum cochinchinense</i> (Lour.) Merr.	Fabaceae	Elumbotti	S	Bark	Fever, rheumatism and bone setting.
14.	<i>Phyllanthus urinaria</i> L	Euphorbiaceae	Malai Kizhanelli	H	Whole plant	Jaundice, gonorrhoea, urinary diseases, indigestion, bleeding piles and menstrual problems.

H-Herb; S-Shrub; CL- Climber; T-Tree

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

There are no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar sites, Tiger/Elephant Reserves/(existing as well as proposed) within 10 km of the mine lease area. There are few reserves forests are located in the study areas, Thattakkal R.F has located about 1.3 km on the Northeast followed by Thogarapalli RF located about 9.2 km on the Northeast. The company has obtained from the District Forest office (Refer Annexure No.VII in Mining plan). There are no protected forests within the project area. No Wildlife Sanctuary in the study area. In addition, No Biosphere Reserves, Wildlife corridors, or, Tiger / Elephant reserves within 10 km of the project area. No protected (PF) forests either in the mine lease area or in the buffer zone. Thus, no forest land is involved in any manner.

There are no protected or ecologically sensitive areas such as National parks or Important Bird Areas (IBAs), or Wetlands or migratory routes of fauna or water bodies or human settlements within the proposed mine lease area. There are no Biosphere reserves or wildlife sanctuaries or National parks or Important Bird Areas (IBAs), or migratory routes of fauna. Thus, the area under study (Mine lease area and the 10 Km buffer zone) is not ecologically sensitive.

Thus, no forest land is involved in any manner. There are no impacts due to this mining activity. There are neither forests nor forest dwellers nor forest-dependent communities in the mine lease area. There shall be no forest-impacted families (PF) or people (PP). Thus, the rights of Traditional Forest Dwellers will not be compromised on account of the project.

3.6. FAUNA

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

3.6.1. Fauna Composition in the Core Zone

A total of 24 varieties of species were observed in the Core zone of Nagojanahalli Village, Colour Granite quarry (Table No.3.57) among them numbers of Insects 7, Reptiles 4, Mammals 2, and Avian 11. A total of 24 species have been recorded from the core mining lease area. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and 11 species are under Schedule IV according to the Indian Wildlife Act 1972. A total of 11 species of bird were sighted in the mining lease area. There are no critically endangered, endangered, vulnerable, and endemic species were observed. Details of fauna in the core zone with the scientific name were mentioned in Table No. 3.28.

Table No: 3.28. Fauna in the Core zone of Nagojanahalli Village, Colour Granite Quarry, Krishnagiri District, Tamil Nadu

SI. No	Common name/English Name	Family Name	Scientific Name	Schedule list wildlife Protection act 1972	IUCN Red List data
Insects					
1.	Striped tiger	Nymphalidae	<i>Danaus plexippus</i>	Schedule IV	LC
2.	Grey pansy	Nymphalidae	<i>Junonia atlites</i>	Schedule IV	LC
3.	Common Tiger	Nymphalidae	<i>Danaus genutia</i>	Schedule IV	LC
4.	Grasshopper	Acrididae	<i>Hieroglyphus sp</i>	NL	LC
5.	Common Tiger	Nymphalidae	<i>Danaus genutia</i>	NL	NL
6.	Termite	Blattodea	<i>Hamitermes silvestri</i>	NE	LC
7.	Red-veined darter	Libellulidae	<i>Sympetrum fonscolombii</i>	NL	LC
Reptiles					
1.	Garden lizard	Agamidae	<i>Calotes versicolor</i>	NL	LC
2.	Common skink	Scincidae	<i>Mabuya carinatus</i>	NL	LC
3.	Rat snake	Colubridae	<i>Ptyas mucosa</i>	Sch II (Part II)	LC
4.	Green vine snake	Colubridae	<i>Ahaetulla nasuta</i>	Schedule IV	NL
Mammals					

1.	Indian Field Mouse	Muridae	<i>Mus booduga</i>	Schedule IV	NL
2.	Common rat	Muridae	<i>Rattus rattus</i>	Schedule IV	LC
Aves					
1.	Black drongo	Dicruridae	<i>Dicrurus macrocercus</i>	Schedule IV	LC
2.	Common myna	Sturnidae	<i>Acridotheres tristis</i>	NL	LC
3.	House crow	Corvidae	<i>Corvus splendens</i>	NL	LC
4.	Sunbird	Nectariniidae	<i>Cinnyris asiaticus</i>	Schedule IV	LC
5.	Shikra	Laniidae	<i>Lanius excubitor</i>	Schedule IV	LC
6.	Rose-ringed parakeet	Psittaculidae	<i>Psittacula krameri</i>	NL	LC
7.	Common quail	Phasianidae	<i>Coturnix coturnix</i>	Schedule IV	LC
8.	Koel	Cuculidae	<i>Eudynamis</i>	Schedule IV	LC
9.	Cattle egret	Ardeidae	<i>Bubulcus ibis</i>	NE	LC
10.	Rock pigeon	Columba livi	<i>Columbidae</i>	Schedule IV	LC
11.	Indian Robin	Turdinae	<i>Saxicoloides fulicata</i>	Schedule IV	LC

*NL- Not listed, LC- Least Concern

3.6.2. Fauna Composition in the Buffer Zone

Taxonomically a total of 80 species have been recorded from the buffer zone area. Based on habitat classification the majority of species were Birds 40 and the list of bird species recorded during the field survey and literature from the study area is given in Table 3.29, followed by Reptiles 9, Mammals 10 (*directly sighted animals & Secondary data), and amphibians 6 and Butterflies 15. There are no critically endangered, endangered, vulnerable, and endemic species were observed. There are no impacts on nearby fauna species. It is apparent from the list that none of the species either spotted or reported is included in Schedule I of the Wildlife Protection Act. Similarly, none of them comes under the REET category.

Table No: 3.29. Faunal Diversity in Buffer Zone of Nagojanahalli Village, Colour Granite Quarry, Krishnagiri District, Tamil Nadu.

S.No	Scientific Name	English Name	Schedule of Wildlife Protection Act	Status as per IUCN Red Data List	Method
Mammals					
1.	<i>Herpestes edwardsi</i>	Indian Grey Mongoose	II	Least Concern	DS
2.	<i>Mus booduga</i>	Little Indian field mouse	IV	Least Concern	DS
3.	<i>Bandicota bengalensis</i>	Indian mole-rat	IV	Least Concern	DS
4.	<i>Mus musculus</i>	House mouse	IV	Least Concern	DS
5.	<i>Funambulus palmarum</i>	Common Palm Squirrel	IV	Least Concern	DS
6.	<i>Rattus rattus</i>	Black rat	IV	Least Concern	DS
7.	<i>Bandicota indica</i>	Rat	IV	Least Concern	DS
8.	<i>Lepus nigricollis</i>	Indian Hare	IV	Least Concern	DS
9.	<i>Cynopterus sphinx</i>	Short nosed fruit bat	IV	Least Concern	DS
10.	<i>Macaca radiata</i>	Bonnet Macaque	II	Least Concern	DS
Birds					
1.	<i>Dicrurus adsimilis</i>	Fork-tailed drongo	IV	Least Concern	DS
2.	<i>Alcedo atthis</i>	Common Kingfisher	IV	Least Concern	DS
3.	<i>Copsychus fulicatus</i>	Indian robin	IV	Least Concern	DS
4.	<i>Dicrurus paradiseus</i>	Racket tailed drongo	IV	Least Concern	DS
5.	<i>Corvus splendens</i>	House crow	V	Least Concern	DS
6.	<i>Dicrurus macrocercus</i>	Black Drongo	IV	Least Concern	DS
7.	<i>Halcyon smyrnensis</i>	White-breasted kingfisher	IV	Least Concern	DS
8.	<i>Bubulcus ibis</i>	Cattle Egret	IV	Least Concern	DS
9.	<i>Pelargopsis capensis</i>	Storkbilled kingfisher	IV	Least Concern	DS
10.	<i>Hypsipetes madagascariensis</i>	Black bulbul	IV	Least Concern	DS
11.	<i>Columba livia</i>	Rock pigeon	IV	Least Concern	DS
12.	<i>Turdoides caudatus</i>	Common Babbler	IV	Least Concern	DS
13.	<i>Acridotheres tristis</i>	Common myna	IV	Least Concern	DS
14.	<i>Psittacula krameri</i>	Rose ringed parakeet	IV	Least Concern	DS
15.	<i>Coturnix coturnix</i>	Grey quail	IV	Least Concern	DS
16.	<i>Passer domesticus</i>	House Sparrow	IV	Least Concern	DS
17.	<i>Pycnonotus cafer</i>	Red vented Bulbul	IV	Least Concern	DS

18.	<i>Accipiter badius</i>	Shikra	IV	Least Concern	DS
19.	<i>Megalaima viridis</i>	Small green barbet	IV	Least Concern	DS
20.	<i>Cuculus canorus</i>	Cuckoo	IV	Least Concern	DS
21.	<i>Calidris minuta</i>	Little stint	IV	Least Concern	DS
22.	<i>Merops orientalis</i>	Small green bee eater	IV	Least Concern	DS
23.	<i>Nectarinia minima</i>	Small sunbird	IV	Least Concern	DS
24.	<i>Ardeola grayii</i>	Pond Heron	IV	Least Concern	DS
25.	<i>Spilopelia chinensis</i>	Spotted dove	IV	Least Concern	DS
26.	<i>Milvus migrans</i>	Common Kite	IV	Least Concern	DS
27.	<i>Phalacrocorax niger</i>	Little cormorant	IV	Least Concern	DS
28.	<i>Egretta garzetta</i>	Little Egret	IV	Least Concern	DS
29.	<i>Anthus hodgsoni</i>	Tree pipit	IV	Least Concern	DS
30.	<i>Apus apus</i>	Common swift	IV	Least Concern	DS
31.	<i>Ardea cinerea</i>	Grey heron	IV	Least Concern	DS
32.	<i>Egretta intermedia</i>	Intermediate egret	IV	Least Concern	DS
33.	<i>Megalaima zeylanica</i>	Brown-headed barbet	IV	Least Concern	DS
34.	<i>Eudynamys scolopacea</i>	Koel	IV	Least Concern	DS
35.	<i>Nectarinia zeylonica</i>	Indian Purple rumped sunbird	IV	Least Concern	DS
36.	<i>Coracias benghalensis</i>	Indian roller	IV	Least Concern	DS
37.	<i>Turdoides striatus</i>	Jungle Babbler	IV	Least Concern	DS
38.	<i>Tringa hypoleucos</i>	Common sandpiper	IV	Least Concern	DS
39.	<i>Hydrophasianus chirurgus</i>	Pheasant-tailed Jacana	IV	Least Concern	DS
40.	<i>Haliastur indus</i>	Brahminy kite	IV	Least Concern	DS
Reptiles					
1.	<i>Calotes versicolor</i>	Oriental garden lizard	III	Least Concern	DS
2.	<i>Bungarus caeruleus</i>	Common krait	IV	Least Concern	DS
3.	<i>Hemidactylus flaviviridis</i>	House lizards	IV	Least Concern	DS
4.	<i>Ophisops leschenaultii</i>	Snake eyed lizard	NL	Least Concern	DS
5.	<i>Naja naja</i>	Indian cobra	II	Least Concern	DS
6.	<i>Bungarus caeruleus</i>	Common krait	IV	Least Concern	DS
7.	<i>Ahaetulla nasuta</i>	Green vine snake	IV	Least Concern	DS
8.	<i>Ptyas mucosa</i>	Rat snake	III	Least Concern	DS

9.	Mabuya carinatus	Common skink	NL	Least Concern	DS
Amphibians					
1.	Sphaerotheca breviceps	Indian Burrowing frog	IV	Least Concern	DS
2.	Euphyctis hexadactylus	Green pond frog	IV	Least Concern	DS
3.	Bufo melanostictus	Common Indian Toad	IV	Least Concern	DS
4.	Hoplobatrachus tigerinu	Indian bull Frog	IV	Least Concern	DS
5.	Microhyla ornata	Ornate Narrow-mouthed Frog	IV	Least Concern	DS
6.	Sphaerotheca rolandea	Southern Burrowing Frog	IV	Least Concern	DS
Butterflies					
1.	Papilio clytia	Common mime	-	Not assessed	DS
2.	Euploea core	Euploea core	-	Least Concern	DS
3.	Pachliopta aristolochiae	Common rose	-	Not assessed	DS
4.	Papilio polytes	Common mormon	-	Not assessed	DS
5.	Spialia galba	Indian Skipper	-	Not assessed	DS
6.	Danaus genutia	Common tiger	-	Not assessed	DS
7.	Pachliopta hector	Crimson rose	-	Not assessed	DS
8.	Eurema brigitta	Eurema brigitta	-	Not assessed	DS
9.	Hypolimnas bolina	Hypolimnas bolina	-	Not assessed	DS
10.	Castalius rosimon	Common Pierrot	-	Not assessed	DS
11.	Curetis thetis	Indian Sunbeam	-	Not assessed	DS
12.	Troides minos	Southern birdwing	-	Least Concern	DS
13.	Papilio demoleus	Lime Butterfly	-	Not assessed	DS
14.	Ariadne merione	Common Castor	-	Not assessed	DS
15.	Neptis hylas	Neptis hylas	-	Not assessed	DS

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

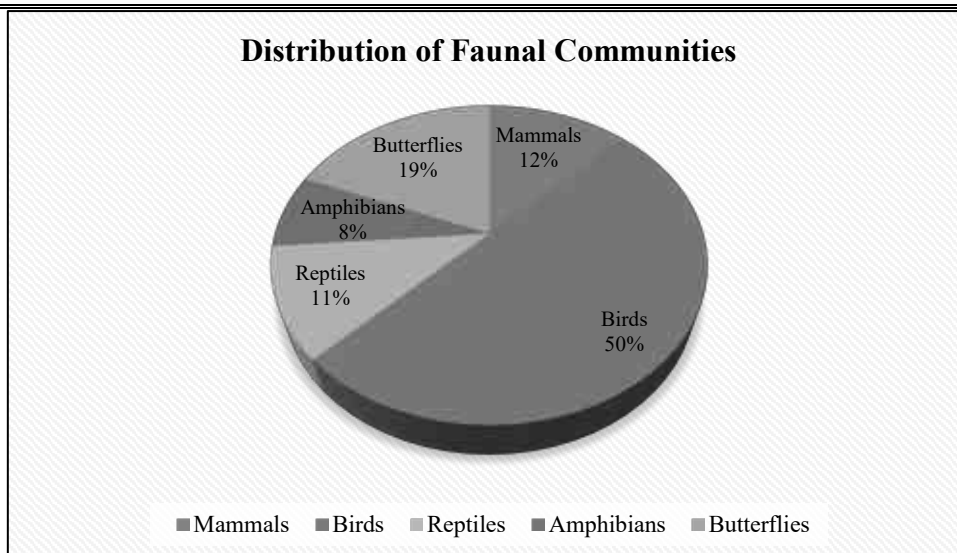


Fig No. 3.29: Diagram showing % distribution of faunal life forms

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

The study area is marked with moderate population of flora and fauna. With reference to the Wildlife Protection Act 1972 total number of wildlife tabulated in this study can be characterized as given in the Table 3.30.

Table No: 3.30 Characterization of Fauna in the Study Area (As Per W.P Act, 1972)

S.No	Schedule of Wildlife Protection Act 1972	No. of species	Remark
1.	Schedule I	0	-
2.	Schedule II	3	-
3.	Schedule III	2	-
4.	Schedule IV	56	-
5.	Schedule V	1	-
6.	Schedule VI	0	-

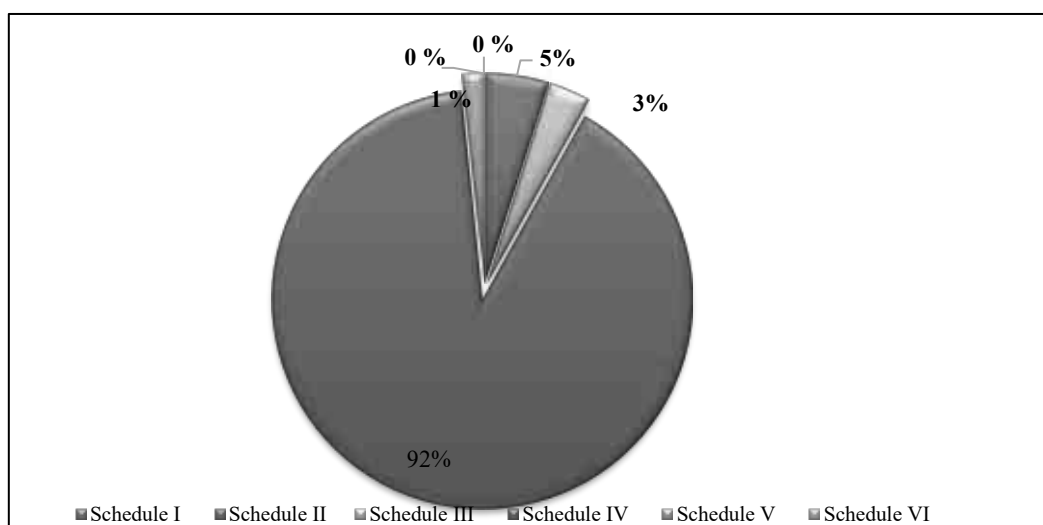


Fig No. 3.30: Schedule of Wildlife Protection Act 1972

Table 3.31: Description of Flora & Fauna

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

A comprehensive Central Legislation namely Wild Life (Protection) Act was enforced in 1972 to provide protection to wild animals. Schedule-I of this act contains the list of rare and endangered species, which are completely protected throughout the country. The list of wild animals and their conservation status as per Wild Life Act (1972) presented in Table 3.31 are the species recorded/reported from the study area, out of which 3 species belongs to schedule-II, 2 species belongs to schedule-III, 1 species belongs to schedule-V and rest of the species belongs to schedule-IV of Wildlife protection Act, 1972.

The study area intersected by few natural drainage and lakes. A number of samples were investigated for enumeration of aquatic fauna. In order to study aquatic flora and faunal life one time survey was conducted during the winter season. Major component of the aquatic life under the study area are listed below

- Phytoplankton
- Zooplankton
- Aquatic vertebrates like fish, amphibians etc.

To assess the planktonic profile of Phytoplankton and Zooplankton, few water samples from Barur Lake (6 Km - SE), Lake near Sendrayampatti (700m - NW) etc. of the project side were collected at sub-surface level. The aquatic ecological study was conducted in different water bodies of the study area and the flora and fauna was recorded.

3.6.3. Aquatic Flora

While considering assessment of aquatic pollution and its implications, it must be realized that, despite many changes in the physico-chemical properties of the water body and sediment, the ultimate consequences of pollutants may be reflected inevitably on the biological system. Hence, the investigations of an ecosystem and particularly of its communities constitute an integral part of any ecological assessment. This can be achieved by selecting a few reliable parameters from a complex community structure. The parameters considered have phytoplankton (cell count, and generic diversity), zooplankton (standing stock i.e., biomass and faunal groups), fishery and mammals as well as birds. The first two reflect the productivity of a water column at the primary and secondary levels, respectively. Benthic organisms being sedentary animals associated with the seabed, provide information regarding the integrated effects of stress, if any, and hence serve as good indicators of early warnings of potential damages.

3.6.3.1. Significance of Plankton

Planktons can be broadly grouped into two categories those with plant origin are called 'Phytoplankton' and those with animal origin are called 'Zooplankton'.

3.6.3.2. Significance of Phytoplankton:

In aquatic environments, phytoplanktons are the main primary producers of organic matter, particularly in seas where they account for 90% of the production. When taken as a whole, they either directly or indirectly sustain all animal populations. In the spring, phytoplanktons are exposed to more intense light from the upper sun when the water column becomes shallow. One of the main abiotic elements that promotes phytoplankton growth is light. The enormous accumulation of phytoplankton in the spring directly supplies fresh organic carbon to nourish the zooplankton, which supports fish, crabs, mollusks, and avian species—larger aquatic animals.

Phytoplankton group reported from the study area were Basillariophyceae, Chlorophyceae, Myxophyceae and Euglenophyceae members. About 10 species of phytoplankton were reported from all the locations. Dominance of Bacillariophyceae members followed by Myxophyceae was observed in studies samples.

Table No: 3.32. Phytoplankton species

S.No	Name of species	Name of Family
1.	Achnanthes affinis	Achnantheaceae
2.	Spirulina sp., Oscillatoria sp.	Myxophyceae
3.	Ankistrodesmus falcatus, Pediastrum boryanum, Scenedesmus bijuga	Chlorophyceae
4.	Synedra balthica	Fragilariaceae

3.6.3.3. Significance of Zooplankton:

Because they help move biological production from phytoplankton to larger species in the food web, zooplanktons are important. Numerous types of phytoplankton are fed on by tiny copepods, tunicates, protozoans, and other crustaceans. These then feed other animals, creating a further link in the food chain. As a result, fluctuations in plankton production would have an impact on the survival of juvenile fish that depend on them.

Table No: 3.33. Zooplankton Species

S.No	Name of species	Name of Family
1.	Mesocyclops leuckarti, Mesocyclops hyalinus	Cyclopidae
2.	Penilia avirostris, Evadna tergestina, Daphnia sp.	Cladocera
3.	Filinia sp., Asplanchna sp.	Rotifera
4.	Keratella monospina, Brachionus caudatus	Brachionidae

3.6.3.4. Aquatic Fish Fauna

Among all the aquatic life in the study area the fish fauna occupies an important place. The fish fauna of the area includes:

Major carps includes Catla, Rahu, Mirgal, Exotic carps includes Silver carp, Grass carp, Minor carps etc.

3.6.4. Aquatic Vegetation

Aquatic weeds are found to be growing everywhere in 10 km radius area, in every water bog, pond, etc. *Typha angustata* can be found growing all along the drains of villages, small water-logged depressions, and agricultural fields lacking water but containing enough moisture to support its growth. And where water is present, *Eichhornia crassipes* has taken its roots and covers the entire water surface by its sprawl and invasion. All the aquatic plant species listed in Table 3.36

Table No: 3.34. List of aquatic plants observed in the study area

S.No	Scientific Name	Common Name	Type
1.	<i>Typha angustifolia</i>	Lesser Bulrush	Emergent hydrophytes
2.	<i>Ipomea aquatica</i>	Water Morning Glory	Marshy amphibious hydrophytes
3.	<i>Hydrilla verticillata</i>	Hydrilla	Submerged hydrophytes
4.	<i>Pistia stratiotes</i>	Water lettuce	Free floating hydrophytes
5.	<i>Cyperus articulatus</i>	Jointed flatsedge	Emergent Hydrophytes
6.	<i>Eichhornia crassipes</i>	Common water hyacinth	Free floating hydrophytes

*LC- Least Concern, NA-Not yet assesse

3.7. Findings/Results

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

Records of threatened species in the area

No threatened species were observed

Endangered Species as per Wildlife (Protection) Act

No Endangered fauna was recorded in the project area.

Endemic Species of the Project areas

No endemic species were observed in the project area.

Migratory species of the Project areas

No migratory fauna observed in project area.

Migratory corridors and Flight paths

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

Breeding and spawning grounds

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

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

There are few reserve forest are located in the study areas, Thattakkal R.F has located about 1.3 km on the Northeast followed by Thogarapalli RF located about 9.2 km on the Northeast. The company has obtained from the District Forest office. There are no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar sites, Tiger/Elephant Reserves/(existing as well as proposed) within 10 km of the mine lease area. There are no protected forests within the project area. There are no endangered, endemic, and RET Species. There is no Schedule I species in study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] The proposed project is not going to have any direct or indirect adverse impact on the species mentioned above.

3.8. Conclusion

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

3.6 Socio Economic Environment

There is no habitation/ village within the radius of 1km from the project area. Socio-economic study is an essential part of environmental study. It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature like temples, historical monuments etc., at the baseline level. This will help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project.

It is expected that the Socio-Economic Status of the area will slightly improve because of this proposed project. As the proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area and, thus, improve their standard of living.

STRUCTURE STUDY IN 500m RADIUS

There are few structures within the radius of 500m from the project site, the details of the structures are given below:

TABLE 3.35: STRUCTURES IN 500m RADIUS

Distance	No of Structures	Structure belongs to owner	Structure not belongs to owner	Type of Structure
0 – 50m	Nil	-	-	-

50- 100m	1	-	Yes	1 – Temple
100-200m	Nil	-	-	-
200 – 300m	2	-	Yes	1 Mines Shed 2. Cattle Shed
300-500m	300m-NE 410m-House 380m-NE 430m-NE 370m-S	-	Yes	1.Farm House 2. House 3.Shed (cattle or Poultry) 4.Agriculture Shed 5.Shed (Pumset room /agriculture product room.

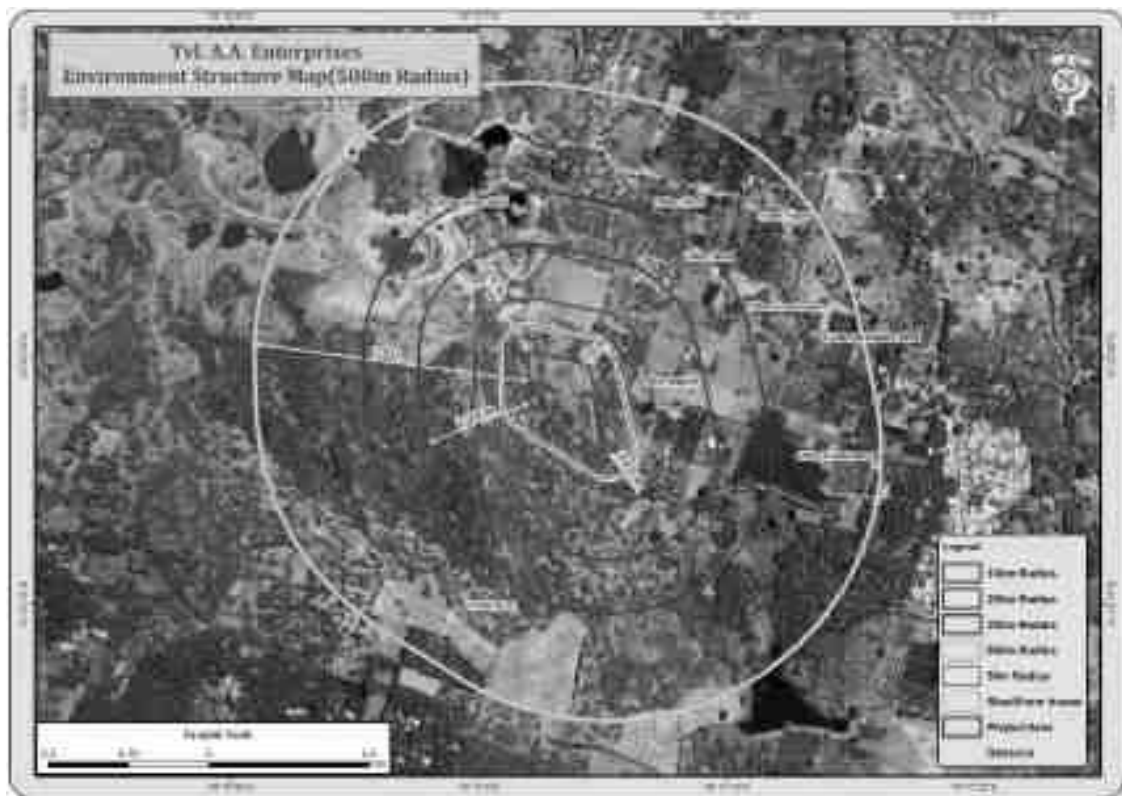


Fig No. 3.31: Environment Structure map around 500m Radius

3.8.1 Objectives of the Study

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

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

3.8.2 Scope of Work

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

3.8.3 Administrative Setup of Krishnagiri District

Krishnagiri district includes 2 Revenue Divisions, 8 Taluks, 7 Town Panchayats. There are 874 Revenue Villages, 352 Village panchayats in this district. In 2011, Krishnagiri district had population of 1,879,809 with a sex-ratio of 963 females for every 1,000 males.

3.8.4 Study area

Nagojanahalli is a Town Panchayat city in district of Krishnagiri, Tamil Nadu. The Nagojanahalli city is divided into 15 wards for which elections are held every 5 years. The Nagojanahalli Town Panchayat has population of 9,953 of which 5,189 are males while 4,764 are females as per report released by Census India 2011.

The sex-ratio of Nagojanahalli city is around 918 compared to 996 which is average of Tamil Nadu state. The literacy rate of Nagojanahalli city is 66.52% out of which 74.56% males are literate and 57.77% females are literate. There are 11.87% Scheduled Caste (SC) and 0.63% Scheduled Tribe (ST) of total population in Nagojanahalli city.

Table No.3.36 Nagojanahalli Population Facts

Number of Households	2483
Population	9953
Male Population	5189 (52.14%)
Female Population	4764 (47.86%)
Children Population	1086
Sex-ratio	918
Literacy	66.52%
Male Literacy	74.56%
Female Literacy	57.77%
Scheduled Tribes (ST) %	0.63%
Scheduled Caste (SC) %	11.87%

Source: <https://www.censusindia2011.com/tamil-nadu/krishnagiri/pochampalli/nagojanahalli-tp-population.html>

Nagojanahalli 2023 - 2024 Population

Current estimated population of Nagojanahalli Town Panchayat in 2024 is approximately 13,900. The schedule census of 2021 for Nagojanahalli city is postponed due to covid. We believe new population census for Nagojanahalli city will be conducted in 2024 and same will be updated once its done. The current data for Nagojanahalli town are estimated only but all 2011 figures are accurate.

Population Projection (2021-2031)

Table No.3.37. Nagojanahalli Population Projection

Nagojanahalli City	Population
2011	9,953
2021	12,900
2022	13,200
2023	13,500
2024	13,900
2025	14,300
2026	14,700
2027	15,100
2028	15,500

2029	15,900
2030	16,300
2031	16,700

Source: <https://www.census2011.co.in/data/town/803958-nagojanahalli-tamil-nadu.html>

3.8.5 Basic Amenities

A better network of physical infrastructure facilities (well-built roads, rail links, irrigation, power and telecommunication, information technology, market-network and social infrastructure support, viz. health and education, water and sanitation, veterinary services and co-operative) is essential for development of the rural economy.

A review of infrastructure facilities available in the area has been given on the basis of field survey. In this study the villages which fall within 10 km radius around the site has been covered. Infrastructure facilities available in the area are presented below.

All basic amenities Education (higher education, colleges, universities, medical college, Transport facilities, Railway station, Bus station area available in the district headquarters Krishnagiri at a distance of 54 km –East)

Table No. 3.38 Population Characteristics of 10km Radius

Sno	Village Name	Total/Rural/Urban	No. of Households	Total population	Total Male	Total Female	SC population	SC population	Literate population	Male Literate	Female Literate	Illiterate population	Male Illiterate	Female Illiterate
1	Mahadevagollahalli	Rural	1395	5855	3015	2840	204	48	3477	2028	1449	2378	987	1391
2	Kannandahalli	Rural	2055	8562	4485	4077	638	0	5690	3273	2417	2872	1212	1660
3	Bommepalli	Rural	870	3324	1673	1651	484	0	2188	1217	971	1136	456	680
4	Sevvampatti	Rural	1064	4346	2234	2112	1268	0	2800	1601	1199	1546	633	913
5	Nagampatti	Rural	1112	4688	2420	2268	540	0	3033	1758	1275	1655	662	993
6	Pichugoundanhalli	Rural	90	371	170	201	6	0	222	128	94	149	42	107
7	Kadappasandampatti	Rural	1392	5816	3029	2787	689	20	3457	1991	1466	2359	1038	1321
8	Kattagaram	Rural	2039	8377	4253	4124	460	5	5379	3052	2327	2998	1201	1797
9	Veppalampatti	Rural	1095	4511	2279	2232	441	34	2758	1554	1204	1753	725	1028
10	Pedappanpatti	Rural	341	1424	745	679	41	0	790	460	330	634	285	349
11	Alerahalli	Rural	286	1113	574	539	0	0	542	322	220	571	252	319
12	Mathinayakkampatti	Rural	128	572	299	273	0	0	321	194	127	251	105	146
13	Batrahalli	Rural	1623	6729	3455	3274	1024	127	4711	2635	2076	2018	820	1198
14	Sonarahalli	Rural	1324	5457	2785	2672	1152	0	3387	1930	1457	2070	855	1215
15	Rengampatti	Rural	1468	5554	2823	2731	586	0	3218	1869	1349	2336	954	1382
16	Kondareddipatti	Rural	973	3948	2062	1886	79	3	2719	1565	1154	1229	497	732
17	Gendigampatti	Rural	1520	6212	3176	3036	1230	9	3779	2148	1631	2433	1028	1405
18	Vadamalampatti	Rural	1766	7063	3558	3505	274	1	4611	2545	2066	2452	1013	1439
19	Thimminaikampatti	Rural	744	2902	1510	1392	294	0	1859	1081	778	1043	429	614
20	Veeramalai	Rural	1117	4257	2196	2061	503	0	2761	1615	1146	1496	581	915
21	Maruderi	Rural	1059	4112	2039	2073	796	0	2898	1620	1278	1214	419	795
22	Kudimenahalli	Rural	1623	6105	3095	3010	1339	0	4291	2461	1830	1814	634	1180
23	Vilangamudi	Rural	1248	5009	2584	2425	528	0	3406	1986	1420	1603	598	1005
24	Jambukuttapatti	Rural	2212	8999	4556	4443	1260	110	6182	3434	2748	2817	1122	1695
25	Belethottam	Rural	1148	4606	2430	2176	783	0	2863	1704	1159	1743	726	1017
26	Mukkampatti	Rural	966	3916	1949	1967	501	0	2111	1206	905	1805	743	1062
27	Marappanayakkampatti	Rural	1000	3967	2022	1945	485	0	2591	1453	1138	1376	569	807
28	Parandapalli	Rural	988	3896	2058	1838	741	6	2431	1438	993	1465	620	845
29	Thadampatti	Rural	630	2423	1263	1160	355	28	1621	906	715	802	357	445
30	Jinkalkadirampatti	Rural	807	3128	1641	1487	388	1	1891	1100	791	1237	541	696
31	Keelkuppam	Rural	672	2560	1326	1234	40	0	1803	1032	771	757	294	463
32	Barur	Rural	1069	4081	2039	2042	645	0	2811	1576	1235	1270	463	807
33	Chellakuttapatti	Rural	644	2694	1377	1317	52	0	1647	971	676	1047	406	641
34	Pannandur	Rural	1026	4066	2078	1988	905	0	2800	1587	1213	1266	491	775
35	Damodarhalli	Rural	1199	4722	2449	2273	40	0	2910	1749	1161	1812	700	1112
36	Puliyampatti	Rural	953	3972	2128	1844	499	0	2535	1546	989	1437	582	855

37	Vadamangalam	Rural	424	1703	888	815	439	0	1088	658	430	615	230	385
38	Bendarahalli	Rural	2029	7925	4017	3908	1773	167	5473	3020	2453	2452	997	1455
39	Kottapatti	Rural	831	3392	1733	1659	493	0	2109	1197	912	1283	536	747
40	Nagojanahalli (TP)	Urban	2483	9953	5189	4764	1181	63	6621	3869	2752	3332	1320	2012
41	Kaveripattinam (TP)	Urban	3721	15006	7402	7604	1957	1	12027	6263	5764	2979	1139	1840
	Total		49134	197316	101004	96312	25113	623	129811	73742	56069	67505	27262	40243

Table No.3.39 Workers Characteristics of 10km Radius

Sno	Name	Total workers	Main Workers	Main Cultivators	Main Agric Laborers	Main Other Workers	Non workers	Male Non Workers	Female Non Workers
1	Mahadevagollahalli	2899	2491	512	1106	825	2956	1205	1751
2	Kannandahalli	3877	2723	391	936	1360	4685	1886	2799
3	Bommpalli	1720	1190	258	314	533	1604	665	939
4	Sevvampatti	2143	1983	513	635	783	2203	950	1253
5	Nagampatti	2173	1411	200	193	974	2515	1035	1480
6	Pichugoundanhalli	198	186	47	33	92	173	70	103
7	Kadappasandampatti	3023	2570	916	1107	526	2793	1238	1555
8	Kattagaram	4153	3742	781	1587	1356	4224	1707	2517
9	Veppalampatti	2124	1935	354	947	598	2387	947	1440
10	Pedappanpatti	509	389	209	4	169	915	326	589
11	Alerahalli	654	639	170	358	110	459	222	237
12	Mathinayakkampatti	296	255	121	57	73	276	122	154
13	Batrahalli	2810	2376	205	346	1786	3919	1587	2332
14	Sonarahalli	2982	1882	586	660	586	2475	1149	1326
15	Rengampatti	3133	1624	479	508	438	2421	1145	1276
16	Kondareddipatti	2158	1413	555	227	593	1790	832	958
17	Gendigampatti	3174	2454	515	853	967	3038	1284	1754
18	Vadamalampatti	3290	2818	633	599	1548	3773	1543	2230
19	Thimminaikampatti	1488	1236	460	340	427	1414	634	780
20	Veeramalai	2316	1702	582	608	485	1941	875	1066
21	Maruderi	2271	829	293	211	323	1841	855	986
22	Kudimenahalli	2532	1590	495	360	702	3573	1397	2176
23	Vilangamudi	2621	2310	780	1170	355	2388	1095	1293
24	Jambukuttapatti	4116	3557	591	1495	1437	4883	1975	2908
25	Belehottam	2479	2390	654	1101	577	2127	970	1157

26	Mukkampatti	2049	1958	545	497	893	1867	751	1116
27	Marappanayakkampatti	1972	1690	461	477	709	1995	789	1206
28	Parandapalli	2085	1832	740	505	577	1811	802	1009
29	Thadampatti	1170	1127	434	397	289	1253	526	727
30	Jinkalkadirampatti	1622	1476	310	838	323	1506	624	882
31	Keelkuppam	1065	736	168	467	89	1495	599	896
32	Barur	1685	1562	163	757	617	2396	887	1509
33	Chellakuttapatti	1419	1238	267	578	341	1275	572	703
34	Pannandur	1611	1120	290	304	495	2455	1016	1439
35	Damodarhalli	2586	1785	575	539	631	2136	996	1140
36	Puliyampatti	2063	1491	652	334	487	1909	895	1014
37	Vadamangalam	878	517	97	252	166	825	385	440
38	Bendarahalli	3572	2892	390	1112	1316	4353	1721	2632
39	Kottapatti	1511	1260	191	685	374	1881	680	1201
40	Nagojanahalli (TP)	4507	4042	1161	1423	1333	5446	2325	3121
41	Kaveripattinam (TP)	5610	5315	82	85	4993	9396	3180	6216
	Total	94544	75736	17826	25005	31256	102772	42462	60310

Source: <https://censusindia.gov.in/census.website/data/census-tables>

4. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.0 General

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

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

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

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

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

4.1 Land Environment

4.1.1 Anticipated Impact

The main anticipated impact on the Land Environment due to quarrying operation is change in Landscape, change in Land – use Pattern. The total area applied for quarry lease is 1.54.0 Ha, the total extent of the cluster is 11.09.35Ha (Cluster area is calculated as per MoEF & CC Notification – S.O. 2269 (E) Dated: 01.07.2016) including existing and proposed quarries. The proposed project area is Government Land, no forest land involved in this lease applied area. The ultimate depth of the proposed project is quarrying is varying from 24m below the ground level and will not intersect the ground water table. The project is site specific.

4.1.2 Mitigation measures

Due to the quarrying activities in the project the land use pattern will be altered. In order to minimize the adverse effects, the following control measures will be implemented:

- In the Opencast Method of Mining the degradation of land is insignificant, after completion of the quarrying operation the land, the land will be partially backfilled with dumped material and part of the area will be allowed to collect rainwater which will act as temporary reservoir, this Granite waste, overburden not produce any toxic effluents in the form of solid, liquid or gas
- Top Soil will be removed and utilized for greenbelt development in the safety barrier
- The periphery of the mining lease area will be converted to a greenbelt to prevent Noise and sound propagation to the nearby lands
- Construction of garland drains all around the quarry pit and construction of check dam at strategic location in lower elevations to prevent soil erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area
- Barbed wire fencing will be re constructed at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle.

4.1.1.2 Soil Environment

4.1.1.3 Impact on Soil Environment

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

4.1.1.4 Mitigation measures for Soil Conservation

- The top soil will be preserved in the safety barrier and kept in moisture condition. The preserved top soil will be utilized for greenbelt development in the safety barrier and utilized for plantation on the top bench
- Garland drains will be constructed around the project area to arrest any soil from the quarry area being carried away by the rainwater. This will also avoid the soil erosion and siltation in the mining pits and maintaining the stability of the benches.

4.1.1.5 Waste Dump Management

4.1.1.6 Anticipated Impact

Solid waste is in the form of Granite waste which does not produce any toxic effluent during dumping. Garland drains will be constructed around the waste dump to prevent the rainwater entering into the quarrying pit besides this garland drain will also help in facilitating the rainwater to the natural gradient.

There is generation of topsoil is about 4,040m³ during the mining plan period. The excavated topsoil will be spread out all along the boundary barrier and utilized for green belt development purpose. The total waste to be produced during the first five years is around 43,876m³ (Granite Waste @70% 20,608m³ + Weathered rock 23,268m³) the same will be proposed to dump on the Southern side with dimension of (L)83m x (W)38m x (H)13.91m.

4.1.1.7 Mitigation measures

- Retaining wall with weep hole, Garland drain will be provided around the dump areas
- Proper angle of repose to be maintained
- Grasses to be done over the dump areas for stability.
- Soil erosion may also be accelerated on areas where the overburden from the ore excavation operation will be dumped. As there is neither a toxic effluent nor solid waste from the mine, quality of soil is not expected to be adversely affected.

4.2 Water Environment (Impact & Mitigation Measures)

4.2.1 Anticipated Impact on Surface and ground water

The impact due to mining on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during quarrying process. For the quarrying activity water will be utilized for wire saw cutting (which will be recycled), water sprinkling on haul roads and greenbelt development. The quarrying activity will not intersect ground water table as ultimate depth of the quarry is 24m and water table is found at a depth of 62m summer and 57m rainy season BGL.

4.2.2 Mitigation measures

The following mitigation measures are suggested for water management

The quarrying operation will be carried out well above the water table. There is no intersection of surface water bodies (Streams, Canal, Odai etc.,) in the proposed project area. During rainy season rain water will be collected in the quarry pit and later used for greenbelt development and for the water sprinkling in the haul roads. There is no proposal for discharging of quarry pit water outside the project area.

There is no proposal Granite processing or workshop within the project area thus there is no effluent anticipated in the mine.

Detail of water requirements in KLD as given below:

Table 4.1 Water Requirement for the Project

Purpose	Quantity	Source
Domestic & Drinking purpose	0.3KLD	From Existing, bore wells and drinking water will be sourced from Approved Water vendors.
Dust Suppression	0.5KLD	From nearby tank
Green Belt	0.4KLD	From nearby tank
Total	1.2KLD	

Source: Prefeasibility report

- With respect to Turbidity, Total Iron and Silica, Pre-treatment methods like settling or filtration, Water Softening (Ion Exchange) shall be adopted to make it fit for drinking purposes. But it can be used for other domestic purposes
- Rainwater will be collected in sump in the mining pit and will be allowed to store and pumped out to surface setting tank of 15 m x 10m x 3m to remove suspended solids if any. This collected water will be judiciously used for dust suppression onwards and such sites where dust likely to be generated and for developing green belt. The proponent will collect and judiciously utilize the rainwater as part of rainwater harvesting
- Construction of garland drains to divert surface run-off into the quarrying area
- Retaining walls with weep hole will be constructed around the dump to arrest silt wash off
- Periodic analysis of quarry pit water and ground water quality in nearby villages
- Domestic sewage from site office & urinals/latrines provided in ML is discharged in septic tank followed by soak pits
- Wastewater discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes
- De-silting will be carried out before and immediately after the monsoon season
- Regular monitoring and analysing the quality of water in open well, bore wells and surface water

4.3 Air Environment (Impact & Mitigation Measures)

The air borne particulate matter is the main air pollutant in this opencast mining. The mining operation will be carried out by Diamond wire saw cutting, jackhammer drilling (35mm dia) and Hydraulic Excavators will be utilized for handling of Granite waste.

4.3.1. Anticipated Impact

The air borne particulate matter generated by quarrying operation, and transportation. The emissions of Sulphur dioxide (SO₂), Oxides of Nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are marginal. Loading - unloading and transportation of Granite and overburden, wind erosion of the exposed area and movement of light vehicles will be the main polluting source in the mining activities releasing Particulate Matter (PM₁₀) affecting Ambient Air of the area. Prediction of impacts on air environment has been carried out taking into consideration proposed production of 29,440 cbm (ROM) on air environment and net increase in emissions by Open pit source modelling in AERMOD Software.

4.3.2 AERMOD Frame work of Computation & details

By using the above-mentioned inputs, ground level concentrations due to the quarrying activities have been estimated to know the incremental concentration in ambient air quality and impact in the study area. The effect of air pollutants upon receptors are influenced by concentration of pollutants and their dispersion in the atmosphere. Air quality modelling is an important tool for prediction, planning and evaluation of air pollution control activities besides identifying the requirements for emission control to meet the regulatory standards and to apply mitigation measures to reduce impact caused by quarrying activities. PM₁₀ was the major pollutant occurred during quarrying activities. The prediction included the impact of Excavation, Drilling, Blasting (Occasionally), loading and movement of vehicles during transportation and meteorological parameters such as wind speed, wind direction, temperature, rainfall, humidity and Cloud cover.

Impact was predicted over the distance of 10 km around the source to assess the impact at each receptor separately at the various locations and maximum incremental GLC value at the project site. Maximum impact of PM₁₀ was observed close to the source due to low to moderate wind speeds. Incremental value of PM₁₀ was

superimposed on the base line data monitored at the proposed site to predict total GLC of PM₁₀ due to combined impacts.

4.3.2.1 Emission Rate

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

The general equation for emissions estimation is:

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

Where:

E = Emissions;

A = Activity rate;

EF = Emission factor, and

ER = Overall emission reduction efficiency, %

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

Table 4.2: Estimated Emission Rate for PM₁₀

Activity	Source type	Value	Unit
Drilling	Point Source	0.044594169	g/s
Blasting	Point Source	0.000042658	g/s
Mineral Loading	Point Source	0.033542159	g/s
Haul Road	Line Source	0.002483102	g/s/m
Overall Mine	Area Source	0.045380092	g/s

Table 4.3: Estimated Emission Rate for So₂

Activity	Source type	Value	Unit
Drilling	Point Source	6.54663E-05	g/s

Table 4.4: Estimated Emission Rate for No_x

Activity	Source type	Value	Unit
Overall Mine	Area Source	0.000002303	g/s

4.3.2 Frame work of Computation & Model details

By using the above-mentioned inputs, ground level concentrations due to the quarrying activities have been estimated to know the incremental concentration in ambient air quality and impact in the study area. The effect of air pollutants upon receptors are influenced by concentration of pollutants and their dispersion in the atmosphere. Air quality modelling is an important tool for prediction, planning and evaluation of air pollution control activities besides identifying the requirements for emission control to meet the regulatory standards and to apply mitigation measures to reduce impact caused by quarrying activities. PM₁₀ was the major pollutant occurred during quarrying activities. The prediction included the impact of Excavation, Drilling, Blasting, loading and movement of vehicles during transportation and meteorological parameters such as wind speed, wind direction, temperature, rainfall, humidity and Cloud cover.

Impact was predicted over the distance of 10 km around the source to assess the impact at each receptor separately at the various locations and maximum incremental GLC value at the project site. Maximum impact of PM₁₀ was observed close to the source due to low to moderate wind speeds. Incremental value of PM₁₀ was superimposed on the base line data monitored at the proposed site to predict total GLC of PM₁₀ due to combined impacts.

Figure 4.1: AERMOD Terrain Map

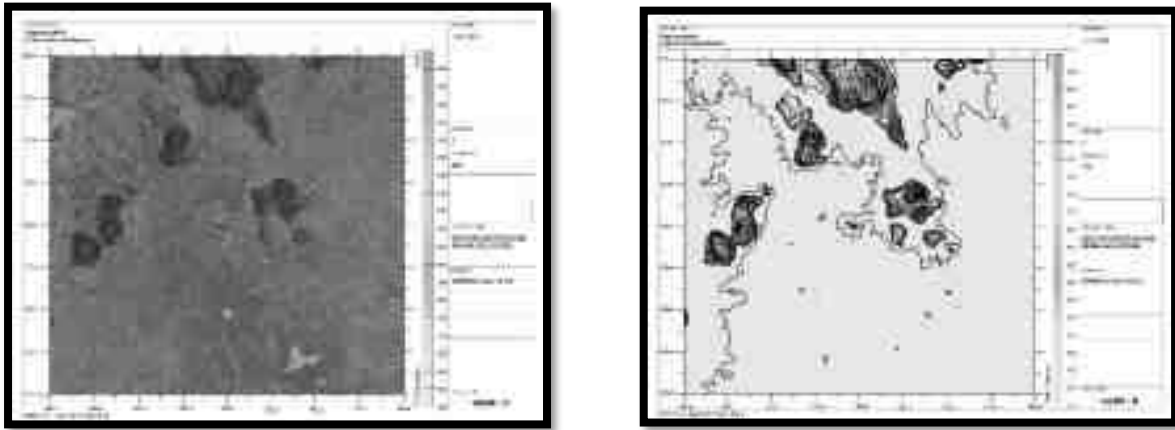


Figure 4.2: Predicted Incremental Concentration of Fugitive Dust

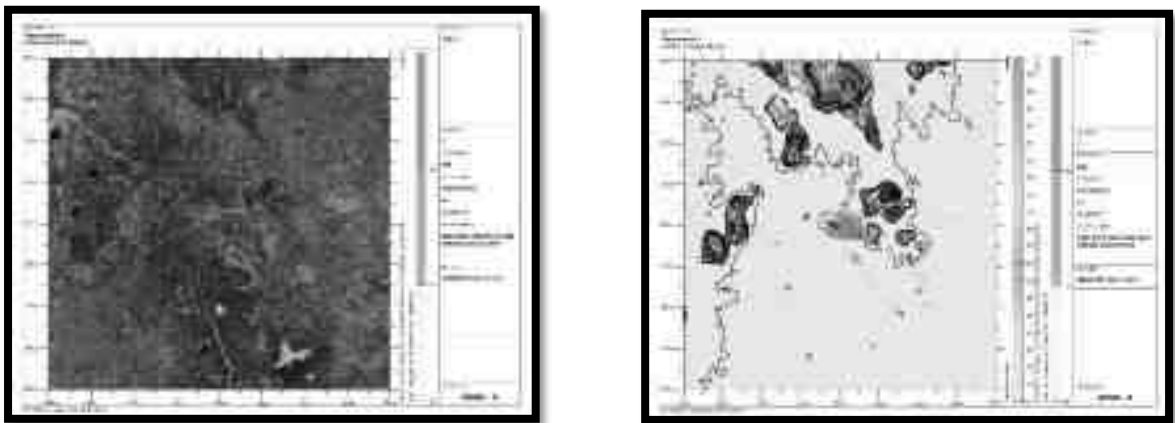


Figure 4.3: Predicted Incremental Concentration of PM₁₀

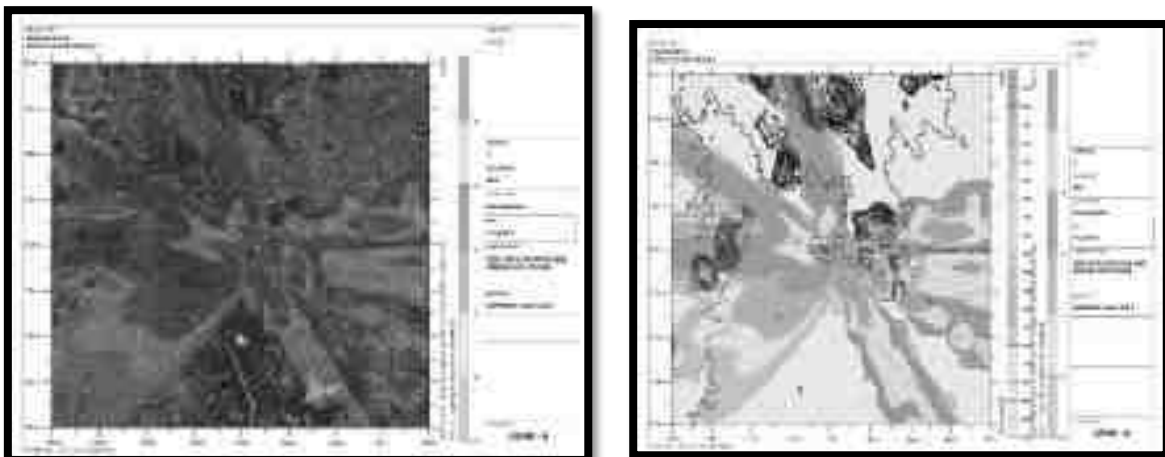


Figure No 4.4: Predicted Incremental Concentration of PM_{2.5}

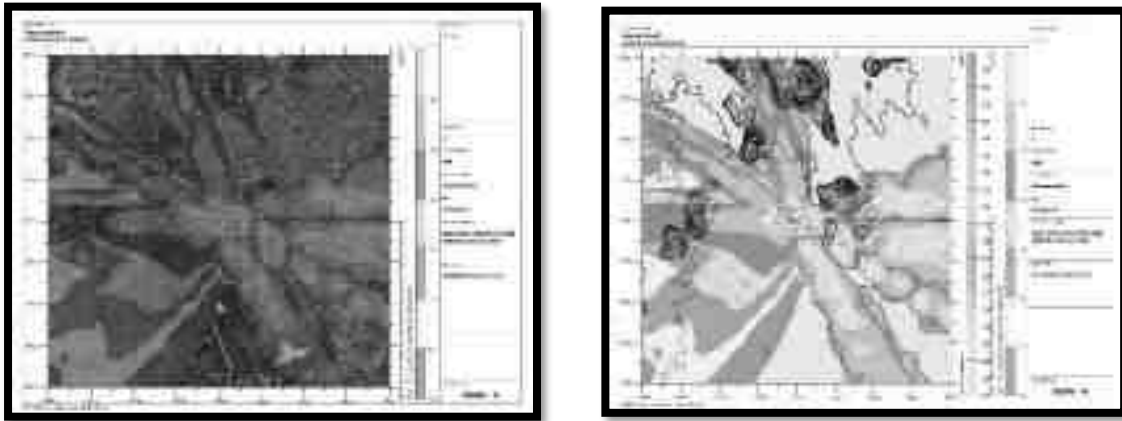


Figure No 4.5: Predicted Incremental Concentration Of So₂

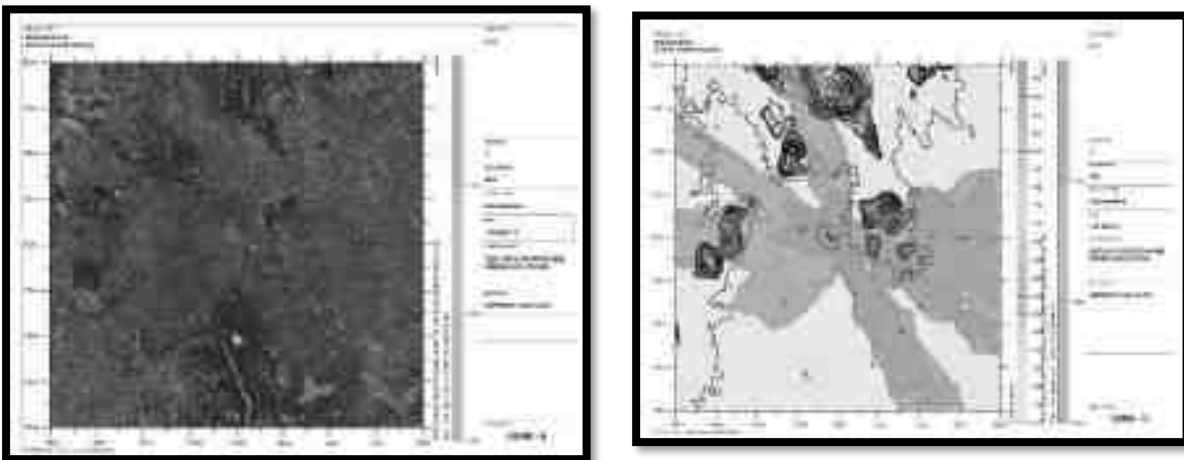
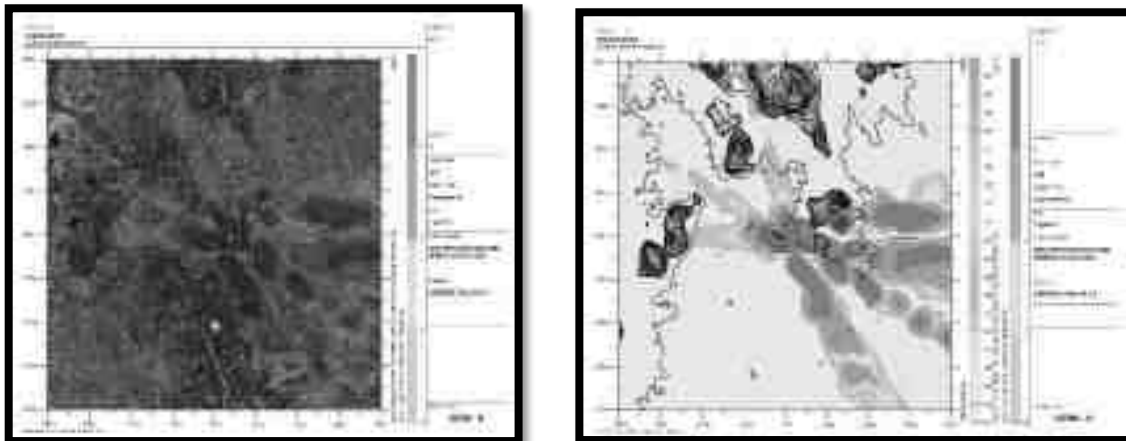


Figure No 4.6: Predicted Incremental Concentration of No_x



4.3.2.1 Model Results

The post project Resultant Concentrations of Fugitive Dust emission, PM₁₀, PM_{2.5}, SO₂ & NO_x (GLC) is given in Table below:

Table 4.5: Incremental & Resultant GLC of Fugitive Dust

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline Fugitive ($\mu\text{g}/\text{m}^3$)	Incremental value of Fugitive due to mining ($\mu\text{g}/\text{m}^3$)	Total Fugitive ($\mu\text{g}/\text{m}^3$) (5+6)
AAQ1	12°22'29.71"N 78°17'3.64"E	-49	51	65.22	24.85	90.1
AAQ2	12°22'38.41"N 78°16'57.80"E	-227	321	62.78	0	62.8
AAQ3	12°22'13.18"N 78°17'29.94"E	757	-461	65.35	24	89.4
AAQ4	12°20'31.05"N 78°16'2.65"E	-1907	-3625	63.89	0	63.9
AAQ5	12°25'5.04"N 78°16'34.32"E	-941	4873	65.20	0	65.2
AAQ6	12°20'24.16"N 78°19'33.22"E	4516	-3841	68.20	0	68.2
AAQ7	12°23'29.24"N 78°14'18.39"E	-5089	1906	66.82	0	66.8

Table 4.6: Incremental & Resultant GLC OF PM₁₀

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM ₁₀ ($\mu\text{g}/\text{m}^3$)	Incremental value of PM ₁₀ due to mining ($\mu\text{g}/\text{m}^3$)	Total PM ₁₀ ($\mu\text{g}/\text{m}^3$) (5+6)
AAQ1	12°22'29.71"N 78°17'3.64"E	-49	51	42.5	11.8	54.3
AAQ2	12°22'38.41"N 78°16'57.80"E	-227	321	41.4	10.5	51.9
AAQ3	12°22'13.18"N 78°17'29.94"E	757	-461	40.9	11.21	52.1
AAQ4	12°20'31.05"N 78°16'2.65"E	-1907	-3625	40.6	4.49	45.0
AAQ5	12°25'5.04"N 78°16'34.32"E	-941	4873	40.0	7	47.0
AAQ6	12°20'24.16"N 78°19'33.22"E	4516	-3841	40.0	0	40.0
AAQ7	12°23'29.24"N 78°14'18.39"E	-5089	1906	38.6	3.18	41.8

Table 4.7: Incremental & Resultant GLC OF PM_{2.5}

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM _{2.5} ($\mu\text{g}/\text{m}^3$)	Incremental value of PM _{2.5} due to mining ($\mu\text{g}/\text{m}^3$)	Total PM _{2.5} ($\mu\text{g}/\text{m}^3$) (5+6)
AAQ1	12°22'29.71"N 78°17'3.64"E	-49	51	21.8	4.92	26.8
AAQ2	12°22'38.41"N 78°16'57.80"E	-227	321	21.0	3.86	24.9
AAQ3	12°22'13.18"N 78°17'29.94"E	757	-461	20.3	4.3	24.6
AAQ4	12°20'31.05"N 78°16'2.65"E	-1907	-3625	20.0	1.72	21.8
AAQ5	12°25'5.04"N 78°16'34.32"E	-941	4873	40.0	2.81	42.8
AAQ6	12°20'24.16"N 78°19'33.22"E	4516	-3841	39.5	0	39.5
AAQ7	12°23'29.24"N 78°14'18.39"E	-5089	1906	18.4	1.39	19.8

Table 4.8: Incremental & Resultant GLC OF SO₂

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline So ₂ (µg/m ³)	Incremental value of So ₂ due to mining (µg/m ³)	Total So ₂ (µg/m ³) (5+6)
AAQ1	12°22'29.71"N 78°17'3.64"E	-49	51	5.4	1.39	6.8
AAQ2	12°22'38.41"N 78°16'57.80"E	-227	321	5.4	1.3	6.7
AAQ3	12°22'13.18"N 78°17'29.94"E	757	-461	6.1	1.35	7.5
AAQ4	12°20'31.05"N 78°16'2.65"E	-1907	-3625	5.5	0.23	5.7
AAQ5	12°25'5.04"N 78°16'34.32"E	-941	4873	5.6	1	6.6
AAQ6	12°20'24.16"N 78°19'33.22"E	4516	-3841	5.9	0	5.9
AAQ7	12°23'29.24"N 78°14'18.39"E	-5089	1906	5.5	0	5.5

Table 4.9: Incremental & Resultant GLC OF NO_x

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline No _x (µg/m ³)	Incremental value of No _x due to mining (µg/m ³)	Total No _x (µg/m ³) (5+6)
AAQ1	12°22'29.71"N 78°17'3.64"E	-49	51	20.84	7.79	28.6
AAQ2	12°22'38.41"N 78°16'57.80"E	-227	321	21.29	3.76	25.0
AAQ3	12°22'13.18"N 78°17'29.94"E	757	-461	20.40	7.2	27.6
AAQ4	12°20'31.05"N 78°16'2.65"E	-1907	-3625	21.11	0	21.1
AAQ5	12°25'5.04"N 78°16'34.32"E	-941	4873	21.16	0	21.2
AAQ6	12°20'24.16"N 78°19'33.22"E	4516	-3841	20.97	0	21.0
AAQ7	12°23'29.24"N 78°14'18.39"E	-5089	1906	20.91	0	20.9

From the resultant of cumulative concentration i.e., Background + Incremental Concentration of pollutant in all the receptor locations without effective mitigation measures are still within the prescribed NAAQ limits of 100, 60, 80 & 80 µg/m³ for PM₁₀, PM_{2.5}, SO₂ & NO_x respectively. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be further being controlled.

4.3.3. 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.

Advantages of Wet Drilling:-

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

Blasting –

- Blasting will be carried out only to remove the overburden and weathered portion
- Establish time of blasting to suit the local conditions and water sprinkling on blasting face
- Controlled blasting includes Adoption of suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone and restricting blasting to a particular time of the day i.e. at the time lunch hours, controlled charge per hole as well as charge per round of hole

Haul Road & Transportation –

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

Green Belt –

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

Occupational Health –

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

4.4 Noise Environment

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

Predictions have been carried out to compute the noise level at various distances around the working pit due to these major noise-generating sources.

Noise at a point generates spherical waves, which are propagated outwards from the source through the air at a speed of 1,100 ft/sec, with the first wave making an ever-increasing sphere with time. As the wave spreads the intensity of noise diminishes as the fixed amount of energy is spread over an increasing surface area of the sphere. The assumption of the model is based on point source relationship i.e., for every doubling of the distance the noise levels are decreased by 6 dB (A).

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

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

Where:

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

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

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

4.4.1 Anticipated Impact

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

- Source data
- Receptor data
- Attenuation factor

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

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

Table 4.10: Predicted Noise Incremental Values

Location ID	N1	N2	N3	N4	N5	N6	N7
Maximum Monitored Value (Day) dB(A)	54.5	58.1	54.9	56.9	54.1	56.3	54.7
Incremental Value dB(A)	60.1	50.6	42.6	28.1	26.5	24.8	26.8
Total Predicted Noise level dB(A)	61.2	58.8	55.1	56.9	54.1	56.3	54.7
NAAQ Standards	Industrial Day Time- 75 dB (A) & Night Time- 70 dB (A) Residential Day Time- 55 dB (A) & Night Time- 45 dB (A)						

The incremental noise level is found within the range of 60.1 dB (A) in Core Zone and 24.8 to 50.6dB (A) in Buffer zone. The noise level at different receptors in buffer zone is lower due to the distance 33.3 involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations are within permissible limits of Industrial area (core zone) & Residential area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 (The Principal Rules were published in the Gazette of India, vide S.O. 123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986.).

4.4.2 Mitigation measures for Control of Noise

The following noise mitigation measures are proposed for control of Noise

- Usage of sharp drill bits while drilling which will help in reducing noise;
- Secondary blasting will be totally avoided and hydraulic rock breaker are utilized for breaking boulders;
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will reduce noise;
- The blasting will be carried out during favourable atmospheric condition and less human activity timings by using nonelectrical initiation system;
- 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 will be developed around the project areas 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.

4.4.3 Ground Vibrations

Ground vibrations due to mining activities in the project area are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc. However, the major source of ground vibration from the proposed mine is moving of Heavy Earth Moving Machineries vibration due to blasting is very minimal since the blasting will not carried out frequently in this type of Granite quarry operation. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements.

Another impact due to blasting activities is fly rocks. These may fall on the houses or agricultural fields nearby the mining lease area and may cause injury to persons or damage to the structures. Nearest habitation from the project area is located 350 m South East. The ground vibrations due to the blasting in proposed mine are calculated using the empirical equation.

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

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

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

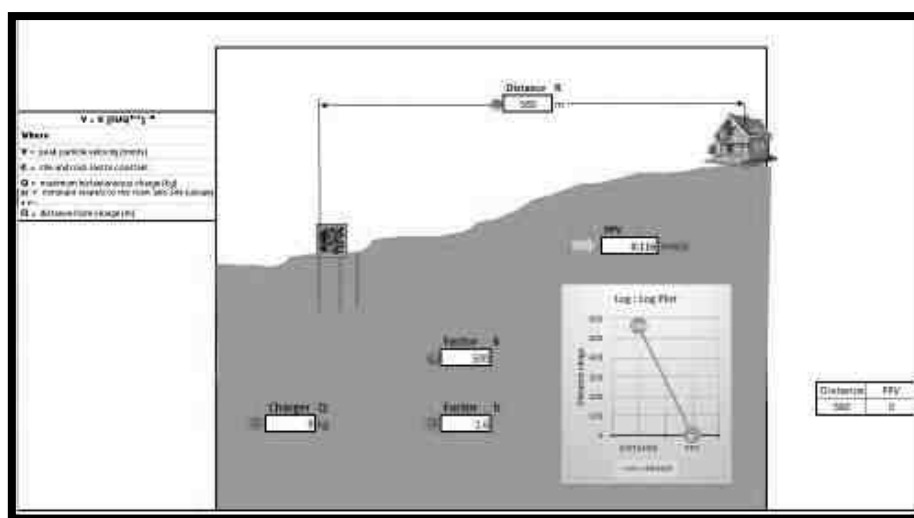
B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

TABLE 4.11: PREDICTED PPV VALUES DUE TO BLASTING

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	9	560-E	0.116

Figure No 4.7: Ground Vibration Prediction



From the above graph, the charge per blast of 9 kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. It should be ensured that the explosives used for blasting at one blast should not exceed more than 100kg at any point of time. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

4.4.3.1 Mitigation measures for Control of Vibration

- The blasting operations in the mine are proposed to be carried out by jackhammer drilling and blasting using delay detonators, which reduces the ground vibrations;
- Proper quantity of explosive, suitable stemming materials and appropriate delay system should be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting should 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 shall 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, 2nd Class Mines Manager/ 1st Class Mines Manager) will be appointed.

4.5 Ecology and Biodiversity

There is a requirement to establish a stable ecosystem with both ecological and economic returns. Minimization of soil erosion and dust pollution enhances the beauty of the core and the buffer zone. To achieve this, it is planned to increase plantation activities. The basic objectives of plantations are as follows:-

- Improvement of Soil quality
- Quick vegetative cover to check soil erosion
- Improvement in mining site stability
- Conservation of biological diversity
- As dust receptor which likely to produce during mining.

4.5.2 Mitigation Measures

4.5.2.1. General Guidelines for Green Belt Development

Green belt is plantation of trees for reducing the air pollution as they absorb both gaseous and particulate pollutant, thus removing them from atmosphere. Green plants form a surface capable of absorbing air pollutants and forming sinks for pollutants. It improves the aesthetic value of local environment. Under present project, green belts have been planned with emphasis on creating biodiversity; enhance natural surroundings and mitigating pollution. Regional tree saplings in eco-friendly bags like *Pterocarpus marsupium*, *Pongamia pinnata*, *Limonia acidissima*, and *Cassia roxburghii* will be planted along the Lease boundary and avenues as well as over Non-active dumps with intervals 3m in between with the GPS Coordinates. The greenbelt development plan aims to overall improvement in the environmental conditions of the region.

- Plants that grow fast will be preferred.
- Preference for high canopy covers plants with local varieties.
- Perennial and evergreen plants will be preferred.
- The development of the Green Belt is an important aspect for any plant because:
 - It improves the ambient air quality by controlling Suspended Particulate Matter (SPM) in the air.
 - It helps in noise abatement for the surrounding area.
 - It helps in the settlement of new birds and insects within itself.
 - It maintains the ecological balance.
 - It increases the aesthetic value of the site.

4.5.2.2. Species Recommendation for Plantation granted in the District.

Following points have been considered while recommending the species for plantation

- The natural growth of existing species and the survival rate of various species.
- Suitability of a particular plant species for a particular type of area.
- Creating biodiversity.
- Fast-growing, thick canopy copy, perennial, and evergreen large leaf area.
- Efficient in absorbing pollutants without major effects on natural growth.
- The following species may be considered primary for plantations best suited for the prevailing climate condition in the area.

Table No 4.12. List of plant species proposed for Greenbelt development

S. No	Name of the plant (Botanical)	Family Name	Common Name	Habit
1.	<i>Cassia roxburghii</i>	Fabaceae	Sengondrai	T
2.	<i>Syrygium cumini</i>	Myrtaceae	Naval	T
3.	<i>Morinda pubescens</i>	Rubiaceae	Nuna	T
4.	<i>Thespesia Populnea</i>	Malvaceae	Puvarasu	T
5.	<i>Borassus flabellifer</i>	Arecaceae	Panai	T

6.	<i>Saraca asoca</i>	Fabaceae	Asoca	T
7.	<i>Limonia acidissima</i>	Rutaceae	Odham	T
8.	<i>Lannea coromandelica</i>	Anacardiaceae	Vila maram	T
9.	<i>Pongamia pinnata</i>	Fabaceae	Pungam	T
10.	<i>Pterocarpus marsupium</i>	Fabaceae	Vengai	T

4.5.3. Anticipated Impact on Fauna

- No rare, endemic & endangered species are reported in the buffer zone. However, during the course of mining, the management will practice the scientific method of mining with a proper Environmental Management Plan including pollution control measures especially for air and noise, to avoid any adverse impact on the surrounding wildlife.
- Fencing around the mine lease area to restrict the entry of stray animals.
- Green belt development will be carried out which will help in minimizing adverse impact on the flora found in the area.

4.5.3.1. Measures for protection and conservation of wildlife species

- Topsoil has a large number of seeds of native plant species in the mining area. Topsoil will be used for restoration and suitable surfaces for planted seedlings.
- Checks and controls the movement of vehicles in and out of the mine.
- Undertaking mitigative measures for a conducive environment for the flora and fauna in consultation with Forest Department.
- A dust suppression system will be installed within the mine and periphery of the mine.
- Plantation around the mine area will help in creating habitats for small faunal species and create a better environment for various fauna. Creating and developing awareness for nature and wildlife in the adjoining villages.

4.5.3.2. Mitigation Measures

- A suitable plan for the conservation of Schedule-I Species have been prepared and the necessary fund for implementation for the same will be made.
- All the preventive measures will be taken for the growth & development of fauna.
- Creating and developing awareness for nature and wildlife in the adjoining villages.
- The workers shall be trained to not harm any wildlife, should it come near the project site. No work shall be carried out after 6.00 pm.

4.5.4. Impact on Aquatic Biodiversity

Mining activities will not disturb the aquatic ecology as there is no effluent discharge proposed from the Colour granite quarry. There is no natural perennial surface water body within the mine lease area, like wetlands, rivers streams, lakes, and farmer sites. There is no impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. Kindly refer the Chapter 3, clause No 3.6.3. Aquatic biodiversity is observed in the study area.

4.5.5. Impact Assessment on Biological Environment

This chapter highlights the various impacts on ecology and biodiversity due to mining activity. The major adverse impacts due to pre-mining and mining phases are loss of habitat, biodiversity, rare flora and fauna, fisheries and other aquatic life, migration of wildlife, and overall disruption of the ecology of the area. During the post-mining phase after land restoration, ecology may effectively improve. A detail of impact and assessments was mentioned in Table No.4.2.

4.5.2.2. Afforestation

More number of trees has been observed along the approach road to the lease area, the trees will be maintained in good condition. The 7.5m and 10m Safety distance along the boundary has been identified to be utilized for subsequent Afforestation. However, the afforestation should always be carried out in a systematic and

scientific manner. Regional trees like Neem, Pongamia, Pinnata, Mango, Casuarina will be planted along the Lease boundary and avenues as well as over non-active dumps at a rate of 50 trees per annum with interval 3m in between. A retaining wall will be constructed around the dumping yard. The rate of survival expected to be 80% in this area. Afforestation Plan is given in Table No.4.11 and preparation of green belt details are given in Table No.4.11.

Table 4.13: Greenbelt development plan

Year	No. of trees proposed to be planted	Survival %	Area to be covered sq.m	Name of the species	No. of trees expected to be grown
I	770	80%	Along 7.5m safety distance, panchayat road.	Neem, Pongamia Pinnata.	620

Table 4.14: Preparation of green belt details

ACTIVITY	YEAR					RATE	AMOUNT (Rs.)
	I	II	III	IV	V		
Plantation (In Nos.)	200					@100 Rs	20,000/-
Plantation and Maintenance Cost	4,000	4,000	4,000	4,000	4,000	Per sapling	
Barbed Wire Fencing (In Mtrs) 530 Mtrs	1,59,000	-	-	-	-	@300 Rs Per Meter	1,59,000/-
Garland drain (In Mtrs) 340 Mtrs	1,02,000	-	-	-	-	@300 Rs Per Meter	1,02,000/-
TOTAL							2,81,000/-

4.5.2.2.1. Species Recommendation for Plantation granted in the district

Following points have been considered while recommending the species for plantation:

- Natural growth of existing species and survival rate of various species.
- Suitability of a particular plant species for a particular type of area.
- Creating of biodiversity.
- Fast growing, thick canopy copy, perennial and evergreen large leaf area.
- Efficient in absorbing pollutants without major effects of natural growth.
- The following species may be considering primary for plantation best suited for the prevailing climate condition in the area.

Table 4.15: Recommended Species to Plant in the Greenbelt

Sl.No	Name of the plant (Botanical)	Family Name	Common Name	Habit
1	<i>Azadirachta indica</i>	Meliaceae	Neem, Vembu	Tree
2	<i>Albiziafalcatoria</i>	Fabaceae	Tamarind, Puliyamaram	Tree
3	<i>Polyalthialongifolia</i>	Annonaceae	Kattumaram	Tree
4	<i>Borassus Flabellifer</i>	Arecaceae	Palmyra Palm	Tree

Table No: 4.16 Anticipated impact of Ecology and Biodiversity in Karandapalli Village, Black Granite Quarry, Krishnagiri District, Tamil Nadu.

S. No	Aspect Description	Likely Impacts on Ecology and Biodiversity (EB)	Impact Consequence Probability Description Justification	Significance	Mitigation Measures
Pre-mining phase					
1	Uprooting of vegetation of lease area	Site specific loss of common floral diversity (Direct impact)	The site possesses Common floral (not tree) species. Clearance of these species will not result in loss of flora.	Less severe	No immediate action is required. However, a Greenbelt /plantation will be developed on the project site and on the periphery of the project boundary, which will improve the floral and faunal diversity of the project area.
		Site specific loss of associated faunal diversity (Partial impact)	The site supports only common species, which use a wide variety of habitats of the buffer zone reserve forest area. So, there is no threat of Faunal diversity		
		Loss of Habitat (Direct impact)	Site does not for unique / critical habitat structure for unique flora or fauna.		
Mining phase					
2	Excavation of mineral using machine and labours, transportation Activities will Generate noise.	Site-specific disturbance to normal faunal movements at the site due to noise. (Partial impact)	Site does not form unique / critical habitat structure for unique flora or fauna.	Less severe	-Mining activity should not be operated after 5PM. - Excavation of dump and transportation work should stop before 7PM.
3	Vehicular movement for transportation of materials will result in the generation of dust (Particulate matter) due to haul roads and emission of Sulphur Dioxide, Nitrogen Dioxide, Carbon monoxide, etc.	Impact on Surrounding agriculture and associated fauna due to deposition of dust and emission of CO. (Indirect impact)	Impact is less as the agricultural land is far from the core area.	Less severe	All vehicles will be certified for appropriate Emission levels. More plantations have been suggested Upgrade the vehicles with alternative fuels such biodiesel, methanol, and biofuel around the mining area.

Table 4.17: Ecological Impact Assessments

S.No	Attributes	Assessment
1.	Impact of mining activity on agricultural land nearby the proposed project site.	Agricultural land is located away from the proposed project site. There are no impacts on the agricultural land & Horticulture and livestock. Kindly refer to the conclusion.
2.	Impact on soil flora & vegetation around the project site.	'No '
3.	Activities of the project affect the breeding/nesting sites of birds and animals	No breeding and nesting site was identified in the mining lease site. The fauna sighted mostly migrated from the buffer area.
4.	Located near an area populated by rare or endangered species	No Endangered, Critically Endangered, or vulnerable species were sighted in the core mining lease area.
5.	Proximity to national park/wildlife sanctuary/reserve forest /mangroves/ coastline/estuary/sea	'No '
6.	The proposed project restricts access to waterholes for wildlife	'No '
7.	Proposed mining project impact surface water quality that also provides water to wildlife	'No 'scheduled or threatened wildlife animals are sighted regularly core in the core area.
8.	Proposed mining project increase siltation that would affect nearby biodiversity areas.	Surface runoff management such as drains is constructed properly so there will be no siltation effect in the nearby mining area.
9.	Risk of fall/slip or cause death to wild animals due to project activities.	'No'
10.	The project release effluents into a water body that also supplies water to a wildlife.	No water body near to core zone so the chances of water becoming polluted is low.
11.	Mining projects affect the forest-based livelihood/ any specific forest product on which local livelihood depended.	'No'
12.	The project likely to affect migration routes.	'No 'migration route observed during the monitoring period.
13.	The project is likely to affect the flora of an area, which have medicinal value	'No'
14.	Forestland is to be diverted, has carbon high sequestration.	'No 'There was no forest land diverted.
15.	The project is likely to affect wetlands, Fish breeding grounds, and marine ecology.	'No'. Wetland was not present in the near core Mining lease area. No breeding and nesting ground is present in the core mining area.

(*Source: EIA Guidance Manual-Mining and Minerals, 2010)

4.6 Socio Economic

The socio-economic impacts of mining are many. Impacts of a mine project may be positive or Negative. The adverse impacts attribute to physical displacement due to land acquisition, which is followed by loss of livelihood, mental agony, changes in social structure, and risk to food security etc., People are also directly affected due to pollution. Social Impact Assessment (SIA) is a process of analysis, monitoring and managing the social consequences of a project. Study on Socio-economic status has already been carried out using primary socio-economic survey for generating the baseline data of Socio-economic status.

4.6.1 Anticipated Impact

From the primary Socio-economic survey & through secondary data available from established literature and census data 2011, it is found that there would be positive impact on Socio-economic condition of the nearby area. There is no habitation within 300m of the proposed mining lease area. Therefore, no major impact is anticipated on the nearby habitation during the entire life of the mine.

4.6.2 Mitigation Measures

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

4.7 Occupational Health and Safety

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

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

4.7.1 Respiratory Hazards

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

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

4.7.2 Noise

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

- 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)
- 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
- Ear muffs provided will be capable of reducing sound levels at the ear to at least 85 dB(A)
- Periodic medical hearing checks will be performed on workers exposed to high noise levels

4.7.3 Physical Hazards

The following measures are proposed for control of physical hazards

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

4.7.4 Occupational Health Survey

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

- General physical tests
- Audiometric tests, Full chest, X-ray, Lung function tests, Spirometric tests
- Periodic medical examination – yearly, Lung function/ Silicosis 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.

4.7.5 Post COVID Health Management Plan for Workers

The following Health Management plan will be strictly implemented in the Mines, Mine officials like Mines Manager and Foreman will be Act as a Controller of Health Management of the workers.

- Temperature will be checked to all the workers while arriving to work on each day
- If any persons/employees have fever of 100.4 or higher, chills, shortness of breath will be sent to Hospital and the persons will be employed after fourteen days
- All the persons inside the mine area instructed to wear fabric or disposable pleated masks covering Nose and Mouth
- Social distancing of 6 feet will be maintained all the time
- Temporary Hand washing points will be installed near the working places, workers will be initiated to Wash hands frequently with soap and water for a minimum of 20 seconds and advised to avoid touching face. This is an essential contagion-control mechanism

4.7.6 Plastic Waste Management

As per the Tamil Nadu Government Order (Ms) No. 84 Environment and Forest (EC.2) Department Dated 25.06.2018 following kind of plastics will not be used in the mines area.

- Use and throw away plastics such as carry bags, plastic bags, plastic sheets used for food wrapping, spreading, plastic plates, plastic coated tea cups and plastic tumblers will not be used in the mines

Action Plan:

Action Plan	Responsibility
All the employees will be checked for plastics before entering the quarry.	Watchman
Every week or month a meeting of workers under the chairmanship of the mine manager will be held to explain the disadvantages of plastic use.	Mine Foreman & Mining Mate
They will be advised not to bring plastic materials into the mines and those who are involved in such activities will not be allowed to work on the day of the snow.	Mines Manager
The miners will be provided with areca nut plates and mugs to help reduce the use of plastics.	Mines owner

4.8 Mine Closure

Mine closure plan is the most important environmental requirement in mineral mining projects. 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.

Objective of Mine closure

- 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.

4.8.1 Mine Closure criteria

The criteria involved in mine closure are discussed below:

4.8.1.1 Physical Stability

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

4.8.1.2 Chemical Stability

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

4.8.1.3 Biological Stability

The stability of the surrounding environment is primarily dependent upon the physical and chemical characteristics of the site, whereas the biological stability of the mine site itself is closely related to rehabilitation and final land use. Nevertheless, biological stability can significantly influence physical or chemical stability by stabilizing soil cover, prevention of erosion/wash off, leaching, etc.,

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

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

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

5. ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.1 Introduction

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

The quarrying operation like drilling, blasting, excavation, loading & transportation are being carried out. The site has been selected based on geological investigation and exploration as below:

- Transportation facility for materials & manpower
- Overall impact on environment and mitigation feasibility
- Socio – economic background.

Enough infrastructures exists and lesser resources are required to be deployed. Since, any further construction for infrastructure is not required and hence does not affect the environment considerably. The mineral deposits are site specific in nature; hence question of seeking alternate site does not arise for this project.

6. 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 as well as the conditions set forth under the order issued by Tamil Nadu Pollution Control Board while granting CTO.

6.1 Methodology of Monitoring Mechanism

Implementation of EMP and periodic monitoring will be carried out by Project Proponent. 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 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 Mine Management.

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

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. The half-yearly reports are submitted to Ministry of Environment and Forest, Regional Office and SEIAA as well.

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

6.2 Implementation Schedule of Mitigation Measures

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

Table 6.1: Implementation Schedule

S.No.	Recommendations	Time Period	Schedule
1	Land Environment Control Measures	Before commissioning of the project	Immediate
2	Soil Quality Control Measures	Before commissioning of the project	Immediate
3	Water Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediate and as project progress
4	Air Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediate and as project progress
5	Noise Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediate and as project progress
6	Ecological Environment	Phase wise implementation every year along with mine operations	Immediate 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 monitoring is detailed in Table 6.2

Table 6.2: Monitoring Schedule for the Project Area

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 bgl
5	Noise	2 Locations (1 Core & 1 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting Operation	Peak Particle Velocity
7	Soil	2 Locations (1 Core & 1 Buffer)	–	Once in six months	Physical and Chemical Characteristics
8	Greenbelt	Within the Project Area	Daily	Monthly	Maintenance

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

6.4 Budgetary Provision for EMP

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

The proposed capital cost for Environmental Monitoring Programme for Tvl. A.A. Enterprises Colour Granite Quarry is Rs. 3,80,000 for conducting Air Quality, Meteorology, Water Quality, Hydrology, Soil Quality, Noise Quality Vibration Study, Greenbelt.

Table 6.3: Environmental Monitoring Programme Budget

PROPOSAL			
Sl.No.	Parameter	Capital Cost	Recurring Cost per annum
1	Air Quality	Rs. 76,000/-	Rs. 76,000/-
2	Meteorology		
3	Water Quality		
4	Hydrology		
5	Soil Quality		
6	Noise Quality		
7	Vibration Study		
Total		Rs 76,000/-	Rs 76,000/-

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 Mine Management level and 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 will submit the periodical reports to

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

CHAPTER – 7: ADDITIONAL STUDIES

7.0 General

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

- Public Consultation
- Risk Assessment
- Disaster Management Plan

7.1 Public Consultation:

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

7.2 Risk Assessment

The methodology for the risk assessment has been based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad, vide Circular No.13 of 2002, dated 31st 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. Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening.

Factors of risks involved due to human induced activities in connection with mining & allied activities with detailed analysis of causes and control measures for the mine is given in below Table 7.4.

Table 7.1 Risk Assessment

S. No	Risk factors	Causes of risk	Control measures
1	Accidents due to explosives and heavy mining machineries	Improper handling and unsafe working practice	<ul style="list-style-type: none"> ▪ All safety precautions and provisions of Mine Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations; ▪ Entry of unauthorized persons will be prohibited; ▪ Firefighting and first-aid provisions in the mine office complex and mining area; ▪ Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use ▪ Working of quarry, as per approved plans and regularly updating the mine plans; ▪ Cleaning of mine faces shall be daily done in order to avoid any overhang or undercut; ▪ Handling of explosives, charging and firing shall be carried out by competent persons only under the supervision of a Mine Manager;

			<ul style="list-style-type: none"> ▪ Maintenance and testing of all mining equipment as per manufacturer guidelines.
2	OB / Waste Dump	Sliding of benches Height and slope of the benches Drainage facilities	<ul style="list-style-type: none"> ▪ Dumps benches are maintained with proper 3 m height and 37° slope to prevent slope failure and terraced. ▪ Dumping in the waste dump in layers and dozing daily. ▪ Vegetation of the top and slopes of the dump to prevent erosion and providing water drainage channels ▪ Providing proper drainage facilities in mine and dump area. ▪ Construction of retaining wall around dump area to stop sliding of material. ▪ Garland drain to be made around OB dump area
3	Drilling & Wire Saw Cutting	Due to improper and unsafe practices Due to high pressure of compressed air, hoses may burst Drill Rod may break	<ul style="list-style-type: none"> ▪ Safe operating procedure established for drilling (SOP) will be strictly followed. ▪ Only trained operators will be deployed. ▪ 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, ▪ Drill & Wire saw operator shall examine the drilling and wire saw equipment and satisfy himself ▪ Drilling & cutting operations shall not be carried on simultaneously on the benches at places directly one above the other. ▪ Periodical preventive maintenance and replacement of worn-out accessories in the compressor and drill equipment and wire saw equipment as per operator manual. ▪ All drills and wire saw unit shall be provided with wet drilling and cutting arrangement and it shall be maintained in efficient working in condition. ▪ Operator shall regularly use all the personal protective equipment.
4	Blasting	Fly rock, ground vibration, Noise and dust. Improper charging, stemming & Blasting/fining of blast holes Vibration due to movement of vehicles	<ul style="list-style-type: none"> ▪ The maximum charge per delay and by optimum blast hole pattern, vibrations will be controlled within the permissible limit and blast can be conducted safely. ▪ SOP for Charging, Stemming & Blasting/Firing of Blast Holes will be followed by blasting crew during initial stage of operation ▪ Shots are fired during daytime only. ▪ All holes charged on any one day shall be fired on the same day. ▪ The danger zone is and will be distinctly demarcated (by means of red flags)
5	Transportation	Potential hazards and unsafe workings contributing to accident and injuries Overloading of material While reversal & overtaking of vehicle	<ul style="list-style-type: none"> ▪ Before commencing work, drivers personally check the dumper/truck/tipper for oil(s), fuel and water levels, tyre inflation, general cleanliness and inspect the brakes, steering system, warning devices including automatically operated audio-visual reversing alarm, rear view mirrors, side indicator lights etc., are in good condition.

		Operator of truck leaving his cabin when it is loaded.	<ul style="list-style-type: none"> ▪ Not allow any unauthorized person to ride on the vehicle nor allow any unauthorized person 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	<ul style="list-style-type: none"> ▪ Escape Routes will be provided to prevent inundation of storm water ▪ Garland drains will be provided at the toe of dump ▪ 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.

7.3 Disaster Management Plan

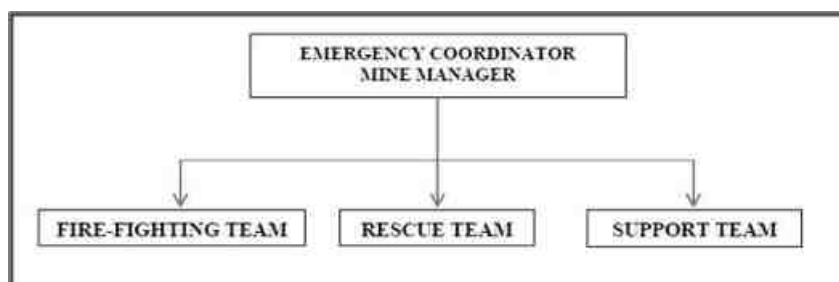
The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

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:

- Effect the 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

It is to optimize operational efficiency to rescue rehabilitation and render medical help and to restore normalcy. To tackle the consequences of a major emergency inside the mines or immediate vicinity of the mines, a Disaster Management Plan must be formulated, and this planned emergency document is called “Disaster Management Plan”.

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



The emergency organization shall be headed by emergency coordinator who will be qualified competent mine manager. In his absence senior most people available at the mine shall be emergency coordinator till arrival of mine manager. There would be three teams for taking care of emergency situations – Fire-Fighting Team, Rescue Team and Support Team. The proposed composition of the teams is given in Table 7.5.

Table 7.2: Proposed Teams to Deal with Emergency Situation

Designation	Qualification
Fire-Fighting Team	
Team Leader	Mines Manager
Team Member	Mines Foreman
Team Member	Mining Mate
Rescue Team	
Team Leader	Mines Manager
Team Member	Environment Officer
Team Member	Mining Foreman
Support Team	
Team Leader	Mines Manager
Assistant Team Leader	Environment Officer
Team Member	Mining Mate
Security Team	Mines Foreman

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

Roles and responsibilities of emergency team –

(a) Emergency coordinator (EC)

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

(b) Incident controller (IC)

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

(c) Communication and advisory team

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

(d) Roll call coordinator

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

(e) Search and rescue team

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

(f) Emergency security controller

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

Emergency control procedure –

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

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

- He will receive information continuously from incident controller and give decisions and directions to:
 - Incident controller
 - Mine control rooms
 - Emergency security controller

Proposed fire extinguishers at different locations –

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

Table 7.3: Proposed Type of Fire Extinguishers

Location	Type of Fire Extinguishers
Electrical Equipment's	CO ₂ type, foam type, dry chemical powder type
Fuel Storage Area	CO ₂ type, foam type, dry chemical powder type, Sand bucket
Office Area	Dry chemical type, foam type
Location	Type of Fire Extinguishers

Alarm system to be followed during disaster –

On receiving the message of disaster from Site Controller, fire-fighting team, the mine control room attendant will sound siren wailing for 5 minutes. Incident controller will arrange to broadcast disaster message through public address system.

On receiving the message of "Emergency Over" from Incident Controller the emergency control room attendant will give "All Clear Signal", by sounding alarm straight for 2 minutes.

The features of alarm system will be explained to one and all to avoid panic or misunderstanding during disaster.

In order to prevent or take care of hazard / disasters if any the following control measures have been adopted.

- All safety precautions and provisions of Metalliferous Mines Regulations (MMR), 1961 is strictly followed during all mining operations.
- Observance of all safety precautions for blasting and storage of explosives as per MMR 1961.
- Entry of unauthorized persons into mine & allied areas is completely prohibited.
- Firefighting and first-aid provisions in the mines office complex and mining area are provided.
- Provisions of all the safety appliances such as safety boot, helmets, goggles, dust masks, ear plugs and ear muffs etc. are made available to the employees and the use of same is strictly adhered to through regular monitoring.
- Training and refresher courses for all the employees working in hazardous premises.
- Working of mine, as per approved plans and regularly updating the mine plans.
- Cleaning of mine faces is regularly done.
- Handling of explosives, charging and blasting are carried out only by qualified persons following SOP.
- Checking and regular maintenance of garland drains and earthen bunds to avoid any inflow of surface water in the mine pit.
- Provision of high-capacity standby pumps with generator sets with enough quantity of diesel for emergency pumping especially during monsoon.
- A blasting SIREN is used at the time of blasting for audio signal.
- Before blasting and after blasting, red and green flags are displayed as visual signals.
- Checking of blasting area for any un-blasted hole or material.
- Warning notice boards indicating the time of blasting and NOT TO TRESPASS are displayed at prominent places.
- Regular maintenance and testing of all mining equipment were carried out as per manufacturer's guidelines.

7.4 Cumulative Impact Study

There are 4 Proposed and 2 existing quarries within a radius of 500 meters from the proposed project area. The list of quarries is as below –

Table 7.4: List of Quarries within 500 Meter Radius from this Proposal

PROPOSED QUARRIES				
CODE	Name of the Owner	S.F.Nos & Village	Extent	Status
P1	Tvl.A.A Enterprises Managing Partner Thiru.S.Ramasubramaniam	609A(P) Bit-5 Nagojanahalli Village	1.54.0	ToR Letter No. SEIAA-TN/F.No. 10161/ToR- 1525/2023 Dated :07/08/2023
P2	KMB Granites and Marble company.	609A(P) Bit-2 Nagojanahalli Village	4.10.0	Mining Plan forwarded to CGM for approval
P3	Mr.D.M.Loganathan	609A(P) Bit-4 Nagojanahalli Village	1.80.0	Mining Plan forwarded to CGM for approval
TOTAL			7.44.0 Ha	
EXISTING QUARRIES				
CODE	Name of the Owner	S.F. Nos & Village	Extent	Period of Lease
E1	Thiru.P.Gandhi	745/1A,2,770/1B2,77 1/2 Nagojanahalli Village	1.97.35	EC granted SEIAA-TN/F.No. 7375/1(a)/EC- 4349/2020 Dated :12/09/2020
E2	Thiru.D.Dhanapal	741/8B,742/2,743/2 Nagojanahalli Village	1.68.0	13.05.2015 - 12.05.2035
E3	Thiru.A.Anbarivu	774(P) Nagojanahalli Village	2.02.50	16.05.1995 - 15.05.2005
E4	Thiru.G.Krishnappa Gounder	609A(P) Nagojanahalli Village	2.02.50	09.05.1995- 08.05.2005
E5	Thiru.A.Latha	609A(P) Nagojanahalli Village	0.81.0	16.05.1995 - 15.05.2005
E6	Thiru.B.Venkatesh	609A(P) Nagojanahalli Village	0.81.0	19.05.1995-18.05- 2005
TOTAL			3.65.35 Ha	
ABANDONED/OLD QUARRIES				
CODE	Name of the Owner	S.F. Nos & Village	Extent	Status
-				
Total Cluster Quarries Extent			11.09.35Ha	

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

Table 7.5: Salient Features of Proposed Project

Name of the Quarry	Tvl. A.A. Enterprises
Lease period	20 years
Mining Lease area	1.54.0 Ha
Location	609A(P) Bit-5 Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamilnadu.
Mining Plan Period	5 Years
Life of the Mine	20 years
Existing Depth	NIL
Previous lease particulars	It is a government land
Proposed Depth for five years plan period	24m
Ultimate Depth	98m(L) x 108m (W) x 24m (D) (15m Agl +9m Bgl)
Toposheet No	57 L/03 & 57L/07
Latitude between	12°22'24.13"N to 12°22'30.18"N

Longitude between		78°17'02.95"E to 77°17'07.81"E
Topography		The area is situated in an elevated terrain Altitude – 465m – 480m above from MSL. Slope – towards Eastern side
Water table		62-57m
Machinery proposed	Jackhammer	6
	Compressor	2
	Hydraulic/Crawler crane	1
	Excavator	1
	Tipper	2
	Diesel Generator	1
	Diamond wire saw	1
Proposed manpower deployment		34
A. Project cost		Rs.3,46,11,000/-
B.EMP Cost		Rs. 3,80,800/-
Total Project cost		Rs.3,49,91,000/-
CER cost		Rs. 5,00,000/-
Nearest Habitation		560m-E
Nearest R.F		Thattakal R.F-1.44km-NE
Nearest Wildlife sanctuary		Around 34 km – W (Cauvery North Wildlife Sanctuary) Around 35.5km –S.West (Cauvery South Wildlife Sanctuary)

Table 7.6: Salient Features of Existing Quarry "E1"

SALIENT FEATURES OF PROPOSAL "E1"			
Name of the Mine	Thiru.P.Gandhi Grey Granite Quarry		
EC granted	SEIAA-TN/F.No. 7375/1(a)/EC-4349/2020 Dated :12/09/2020		
Survey Nos	745/1A,745/2,770/1B2,771/2		
Land Type	It is a Patta land (Patta No 2770)		
Extent	1.97.35Ha		
Mining Plan Period / Lease Period	20 years		
Ultimate Pit Dimension	Length in m	Width in m	Depth in m
	214m (max)	136m (max)	23 m
Latitude between	12°22'44.58"N To 12°22'50.55"N		
Longitude between	78°16'48.34"E To 78°16'56.28"E		
Toposheet No	57 L/07		
Highest Elevation	463m Amsl		
Year wise production for five years	ROM 34295m ³		
Machinery Proposed	Jack Hammer	6	
	Compressor	2	
	Hydraulic drilling machine	2	
	Tipper	2	
	Hydraulic Crane	2	
	Mobile Crane	1	
	Excavator	2	
	Generator	1	
	Wiresaw	2	
	Water Pump	2	
	Water tanker	1	
Proposed Blasting Method	Controlled blasting		
Manpower Proposed	32		
Total Project Cost	Rs.2,61,43,900		

Table 7.7: Salient features of existing quarry "E2"

SALIENT FEATURES OF PROPOSAL "E2"	
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Name of the Mine	Thiru.D.Dhanapal Grey colour Granite Quarry	
Survey Nos	741/8B,742/2,743/2	
Land Type	Patta land	
Extent	1.68.0 Ha	
Period of scheme	2015-16 to 2019-2020	
Depth of Mining	30m	
Mining Plan Period / Lease Period	20 years	
Latitude between	12°22'33.99"N to 12°22'38.92"N	
Longitude between	78°16'55.36"E to 78°16'53.54"E	
Toposheet No	57 L/07	
Highest Elevation	490m Amsl	
Year wise production for five years (Scheme of mining)	ROM 1,08,810m ³	
Machinery Proposed	Jack Hammer	6
	Compressor	2
	Hydraulic Crane	1
	Excavator	1
	Tippers	2
Proposed Blasting Method	Controlled blasting	
Manpower Proposed	37	
Total Project Cost	Rs.2,51,42,400	

Source: Scheme of mining Plan

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

Air Environment –

Calculating the Cumulative Load of Mining within the cluster is as shown in table 7.4.

Table 7.8: Cumulative Production Load of Granite

Quarry	Mineable Reserves ROM in m ³	Mineable Reserves of Granite in m ³	Proposed production of ROM for five-year period in m ³	Production of ROM Per Day in m ³	Production of Granite Per day in m ³	Number of Lorry loads of Granite per day
P1	1,18,020	35,406	29,440	20	6	1
E1	1,16,895	40,913	34,295	23	8	1
E2	2,41,800	72,540	1,08,810	73	22	4
Total	4,76,715	1,48,859	1,72,545	116	36	6

Source: Approved Mining plan of Respective mines

On a cumulative basis considering all the 3 quarries (2 Existing and 1 Proposed) it can be seen that the overall production of Granite ROM per day is 116m³ and overall production of Granite is 36m³ per day (recovery percentage is vary from one quarry to another), No of Lorry loads per day is 6.

Based on the above production quantities the emissions due to various activities in all the 3 mines includes various activities like ground preparation, excavation, handling and transport of ore. These activities have been analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 7.9.

Table 7.9: Emission Estimation from Quarries within 500 Meter Radius

Emission Estimation for quarry P1				
Estimated Emission Rate for PM ₁₀	Activity	Source type	Value	Unit
	Drilling	Point Source	0.044594169	g/s
	Blasting	Point Source	0.000042658	g/s

	Mineral Loading	Point Source	0.033542159	g/s
	Haul Road	Line Source	0.002483102	g/s/m
	Overall Mine	Area Source	0.045380092	g/s
Estimated Emission rate for SO ₂	Overall Mine	Area Source	6.54663E-05	g/s
Estimated Emission rate for NO _x	Overall Mine	Area Source	0.000002303	g/s
Emission Estimation for quarry E1				
Estimated Emission Rate for PM ₁₀	Activity	Source type	Value	Unit
	Drilling	Point Source	0.046391045	g/s
	Blasting	Point Source	0.000051974	g/s
	Mineral Loading	Point Source	0.033986756	g/s
	Haul Road	Line Source	0.002483235	g/s/m
	Overall Mine	Area Source	0.050139855	g/s
Estimated Emission rate for SO ₂	Overall Mine	Area Source	7.65291E-05	g/s
Estimated Emission rate for NO _x	Overall Mine	Area Source	0.000003367	g/s
Emission Estimation for quarry E2				
Estimated Emission Rate for PM ₁₀	Activity	Source type	Value	Unit
	Drilling	Point Source	0.041577437	g/s
	Blasting	Point Source	0.000030054	g/s
	Mineral Loading	Point Source	0.032768072	g/s
	Haul Road	Line Source	0.002482906	g/s/m
	Overall Mine	Area Source	0.046950324	g/s
Estimated Emission rate for SO ₂	Overall Mine	Area Source	5.23139E-05	g/s
Estimated Emission rate for NO _x	Overall Mine	Area Source	0.000001989	g/s

Source: Emission Calculations

Table 7.10: Incremental & Resultant GLC within Cluster

PM ₁₀ in µg/m ³	
Location	CORE
Background	42.5
Highest Incremental	12.97
Resultant	55.4
NAAQ standard	100 µg/m ³
PM _{2.5} in µg/m ³	
Location	CORE
Background	21.8
Highest Incremental	5.89
Resultant	27.7
NAAQ standard	60 µg/m ³
SO ₂ in µg/m ³	
Location	CORE
Background	5.4
Highest Incremental	1.49
Resultant	6.9
NAAQ standard	80 µg/m ³
NO _x in µg/m ³	
Location	CORE
Background	20.84

Incremental	6.94
Resultant	27.8
NAAQ standard	80 µg/m ³

Noise Environment –

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks & HEMM. Cumulative Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities. Predictions have been carried out to compute the noise level at various distances around the different quarries within the 500 m radius.

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

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

Where:

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

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

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

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

Source data has been computed considering of all the machinery and activities used in the mining process.

Table 7.11: Predicted Noise Incremental Values from Mines

Location ID	N1	N2	N3	N4	N5	N6	N7
Maximum Monitored Value (Day) dB(A)	54.5	58.1	54.9	56.9	54.1	56.3	54.7
Incremental Value dB(A)	60.1	50.6	42.6	28.1	26.5	24.8	26.8
Total Predicted Noise level dB(A)	61.2	58.8	55.1	56.9	54.1	56.3	54.7
NAAQ Standards	Industrial Day Time- 75 dB (A) & Night Time- 70 dB (A) Residential Day Time- 55 dB (A) & Night Time- 45 dB (A)						

The incremental noise level is found within the range of 60.1 dB (A) in Core Zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations near habitations are within permissible limits of Residential Area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 (The Principal Rules were published in the Gazette of India, vide S.O. 123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986.).

Socio Economic Environment –

The 3 mines shall create employment to 100peoples and revenue will be created to government

Table 7.12: Socio Economic Benefits from 3Quarries

Location code	Employment	Project Cost	CER
P1	34	Rs.3,46,11,000/-	Rs.5,00,000/-
E1	32	Rs. 2,61,43,900-	Rs.5,00,000/-
E2	34	Rs.2,51,42,400/-	Rs.5,00,000/-
Total	100	Rs. 8,58,97,300/-	Rs.15,00,000

A total of 100 people getting and will get employment from these cluster quarries. Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018 by all the mines

As per para 6 (II) of the office memorandum, all the mines being a green field project & Capital Investment is ≤ 100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC and the total CER amount from the 3 mines is Rs 15,00,000/-

CHAPTER – 8: PROJECT BENEFITS

8.0 General

Tvl. A.A. Enterprises Colour Granite Quarry of 35,406 m³ of Granite @ 30% recovery (ROM 1,18,020 m³ for the entire period- Life of the mine) for Life of Mine of 20 Years. This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits

- Increase in Employment Potential
- Improvement in Socio-Economic Welfare
- Improvement in Physical Infrastructure
- Improvement in Social infrastructure
- To meet out the demand supply gap of Granite and enhance the foreign exports

8.1 Employment Potential

It is proposed to provide employment to about 34 persons for carrying out mining operations and give preference to the local people in providing employment. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc., the economic status of the local people will be enhanced due to mining project.

8.2 Socio-Economic Welfare Measures Proposed

The impact of mining activity in the area will be more positive than negative 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 mine is located in Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District of Tamil Nadu and the area have communications, roads and other facilities already well established. The following physical infrastructure facilities will further improve due to proposed mine.

- Road Transport facilities
- Communications
- Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine.

8.4 Improvement in Social Infrastructure

Employment is expected during civil construction period, in trade, garbage lifting, sanitation and other ancillary services, Employment in these sectors will be primarily temporary or contractual and involvement of unskilled labour will be more. A major part of the labour force will be mainly from local villagers who are expected to engage themselves both in agriculture and mining activities. This will enhance their income and lead to overall economic growth of the area.

8.5 Other Tangible Benefits

The proposed mine is likely to have other tangible benefits as given below.

- Indirect employment opportunities to local people in contractual works like construction of infrastructural facilities, transportation, sanitation, for supply of goods and services to the mine and other community services.
- Additional housing demand for rental accommodation will increase
- Cultural, recreation and aesthetic facilities will also improve
- Improvement in communication, transport, education, community development and medical facilities and overall change in employment and income opportunity
- The State Government will also benefit directly from the proposed mine, through increased revenue from royalties, cess, DMF, GST etc.,

8.5.1 Corporate Social Responsibility

The project proponent Tvl. A.A. Enterprises 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 proponent will take-up following programmes for social and economic development of villages within 10 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

8.5.2 CSR Cost Estimation

CSR activities will be taken up in the Nagojanahalli village mainly contributing to education, health, training of women self-help groups and contribution to infrastructure etc., CSR budget is allocated as 2.5% of the profit.

8.5.3 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 ≤ 100 crores, Tvl. A.A. Enterprises shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC. Capital cost is Rs.3,46,11,000/-and 2% of the same works out to Rs.6,92,220/-

Table 8.1: CER – Action Plan

Activity	Beneficiaries	Total in Rs
Water Management – Construction of rainwater harvesting structures	Nagojanahalli village	5,00,000
Sanitation – Maintenance & repairs of toilets in nearby schools	One school in Nagojanahalli village	
Solar Power – Installation of Solar Street Lamps	Nagojanahalli village roads	
Total		5,00,000

Source: Field survey conducted by FAE, consultation with project proponent

CHAPTER – 9: ENVIRONMENTAL COST BENEFIT ANALYSIS

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

CHAPTER - 10: 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 of ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

10.1 Environmental Policy

The Project Proponent committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent will –

- Allocate necessary resources to ensure the implementation of the environmental policy
- 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
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts
- Implement monitoring programmes to provide early warning of any deficiency or unanticipated performance in environmental safeguards
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement

10.1.1 Description of the Administration and Technical Setup –

The Environment Monitoring Cell discussed under Chapter 6 will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level of the proposed quarry.

The said team will be responsible for:

- Analysis of the water and air samples collected through external laboratory
- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.,
- Co-ordination of the environment related activities within the project as well as with outside agencies
- Collection of health statistics of the workers and population of the surrounding villages
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme
- Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

10.2 Land Environment Management –

Landscape of the area will be changed due to the quarrying operation, restoration of the land by converting the quarry pit into temporary reservoir and the remaining part of the area (un utilized areas, infrastructure, haul Roads) will be utilized for greenbelt development. Aesthetic of the Environment will not be affected. There is no major vegetation in the project area during the course of quarrying operation and after completion of the quarrying operation thick plantation will be developed under greenbelt development programme.

Table 10.1: Proposed Controls for Land Environment

Control	Responsibility
Designing vehicle wash-down system so that all washed water is captured and passed through grease and oil separators.	Mines Manager
Refueling will be carried out in a safe location, away from vehicle movement pathways	Mine Foreman & Mining Mate
No external dumping i.e., outside the project area	Mine Foreman
Greenbelt on dumps and its maintenance	Environment Officer
Garland drains with catch pits to be provided all around the project area to prevent run off affecting the surrounding lands.	Environment Officer
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager
Thick plantation using native flora species will be carried out on the backfilled area.	Mines Manager
There will be formation of a small surface water body in the mined-out area, which can be used for watering the greenbelt at the conceptual stages.	Environment Officer

10.3 Soil Management

10.3.1 Top Soil Management –

It is anticipated to remove 7,840m³ of topsoil and preserve it to facilitate greenbelt development on the backfilled area during mine closure.

10.3.2 Overburden / Waste and Side Burden Management –

It is anticipating to remove 82,614 m³ of waste (Granite waste@ 70%) which will temporarily store at predetermined places as per mining plan and will be backfilled during mine closure.

Table 10.2: Proposed Controls for Soil Management

Control	Responsibility
backfilling process during mine closure as per mining plan	Mines Manager
The dump slopes will be planted with deep rooting shrubs, grasses and creepers for stabilizing them	Environment Officer
Garland drains are to be paved around the dump area to arrest possible wash off in the rainy seasons	Mines Manager
Surface run-off from the surface dumps via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
The backfilled area shall be covered with the soil for green belt development	Environment Officer
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Environment Officer
keeping records of mitigation of erosion events, to improve on management techniques	Environment Officer
The overall slope of the dump is maintained at angle of repose not exceeding 37° from horizontal	Mines Manager
The retaining wall has to be made to arrest the waste dump spills	Mines Manager
A monitoring map with information including their GPS coordinates, erosion type, intensity, and the extent of the affected area, as well as existing control measures and assessment of their performance	Environment Officer
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Environment Officer
Test soils for pH, EC, chloride, exchangeable cations, particle size and water holding capacity	Mines Manager

10.4 Water Management

Water is a key component in mining projects as it is required for, and affected by, mining activities. Effective water management is important for a variety of reasons including: uninterrupted operation of the mine, compliance with operational permissions and applicable legislation, and minimization of effects on the receiving environment.

This section focuses on actions for avoidance, mitigation, and control, as well as a water management monitoring program –

- To protect water-related resources, and avoid harmful impacts;
- To supply and retain water for mine operations;
- to Define water-related environmental control structures; and
- To manage water to ensure that any discharges are following the applicable water quality levels and guidelines.

Table 10.3: Proposed Controls for Water Environment

Control	Responsibility
To maximize the reuse of pit water for water supply	Mines Manager
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Environment Officer
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations Safety distance of 50m will be always maintained from the odai and oorani	Mines Manager
Mine pit water is used for dust suppression and greenbelt development utilization of mine pit water is optimal and effective ways	Environment Officer
Ensure there is no process effluent generation or discharge from the project area into water bodies	Environment Officer
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Manager
Fast growing grasses, small plants and bushes will be grown on the overburden dumps to control soil erosion and siltation	Mines Manager
Retention walls and garland drains will be constructed around toe of waste dumps to arrest silt wash off from dumps during monsoon	Environment Officer
Rainwater harvesting measures will be adopted in the project area and in nearby villages to maintain and enhance the ground water table of the area	Environment Officer
Regularly assess and modify Water Management Plan to adapt to changing work plans and site conditions	Environment Officer
Familiarize all site personnel with the purpose and content of the Water Management Plan, and their responsibilities in its implementation	Environment Officer
Water management and sediment control structures and facilities will be regularly inspected and maintained according to the monitoring schedules	Environment Officer
Monthly or after rainfall, inspection for performance of water management structures and systems	Environment Officer
Conduct ground water and surface water monitoring for parameters specified by State Pollution Control Board (SPCB)	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.5 Air Quality Management

The proposed mining activity would result in the increase of particulate matter concentrations due to fugitive dust. Daily water sprinkling on the haul roads, approach roads in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to truck mobility. It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements.

Table 10.4: Proposed Controls for Air Environment

Control	Responsibility
Generation of dust during excavation is minimized by water sprinkling on working face	Mines Manager
Develop thick Greenbelt with tall growing trees and thick foliage cover all along the boundary of the project (7.5 Meter Buffer Zone) to arrest dust spreading outside the project area and to be maintained. This plantation cover will also act as an acoustic barrier	Environment Officer
Daily maintenance of haul roads and daily water sprinkling to minimize the generation of fugitive dust due to movement of heavy earth moving machineries on it	Mines Manager
Handle the waste from the mine pit to respective dumps and backfilling during closure process, fugitive dust is anticipated. this fugitive emission can be controlled by well-maintained machineries, well maintained haul roads water sprinkling on haul roads twice a day. Besides it is also advised not to handle the waste during high windy periods	Mines Manager & Environment Officer
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself to be implemented	Environment Officer
Plantation will be carried out on surface dumps, backfilled area and top benches of the mined-out area	Environment Officer
Water reservoir will be developed in the left over mined out pit, which will serve as additional surface water resources for the nearby villages	Environment Officer
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution and noise generation	Mines Manager
Over loading of trucks should be avoided	Mines Manager
All the mining equipment and trucks has been controlled with emission norms	Environment Officer
The village roads used for mineral transport will be maintained weekly and monthly basis to avoid fugitive dust emissions	Mines Manager
Dust mask are provided to the workers working in high dust generating areas and continue to provide the same	Mines Manager
Weekly and Monthly maintenance of deployed machineries, to reduce gaseous emission	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Environment Officer
Monitor meteorological conditions (temperature, wind, rainfall)	Environment Office

Source: Proposed by FAE's & EIA Coordinator

10.6 Noise Management

There will be intermittent noise levels due to vehicular movement, trucks loading, drilling and blasting and cutting activities. No mining activities are planned during night time.

Table 10.5: Proposed Controls for Noise Environment

Control	Responsibility
A thick greenbelt to be developed all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained	Mines Manager
Plantation activities to be carried out on surface dumps and infrastructure facilities, these plantations will help in attenuating the noise levels	Environment Officer
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Manager
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Environment Officer
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Environment Officer
Provision of effective silencers for mining machinery and transport vehicles	Environment Officer
Provision of sound proof AC operator cabins to HEMM	Environment Officer
Sharp drill bits are used to minimize noise from drilling	Environment Officer
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring to be carried out in the project area and in surrounding villages to assess the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Environment Officer
Undertake noise or vibration monitoring in response to a complaint (from any sensitive receptor).	Mines Manager
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination during initial stage of operation	Mines Manager
If a noise or vibration complaint is received, follow the complaints and inquiries	Environment Officer
Undertake noise or vibration monitoring half yearly	Environment Officer

Source: Proposed by FAE's & EIA Coordinator

10.7 Ground Vibration and Fly Rock Control

Table 10.6: Proposed Controls for Ground vibration & Fly rocks

Control	Responsibility
Controlled blasting using delay detonators will be carried out to maintain the PPV value (below 8Hz) well within the prescribed standards of DGMS	Mines Manager
Drilling and blasting during initial stage will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Prior to blasting within 500 meters of the lease boundary, establish a fly rock exclusion zone within adjacent properties and check with landholders that the area is not occupied by humans, blast clearance zones are applied for all blasts.	Environment Officer
Undertake vibration monitoring	Environment Officer

Source: Proposed by FAE's & EIA Coordinator

10.8 Biological Environment Management

The mine management will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of mined out area, backfilled area, etc., the water reservoir will be developed in lower benches of the mined-out area at conceptual stage will be used for the maintenance of green belt after the closure of mine.

Following control measures are proposed for its management and will be the responsibility of the environment officer.

- Greenbelt development all along the safety barrier of the project area
- The main attributes that retard the survival of sapling is fugitive dust, this fugitive dust can be controlled by water sprinkling on the haul roads and constructing a sprinkler near the newly planted area.
- Year wise plantation should be recorded and monitored
 - Based on the area of plantation.
 - Period of plantation
 - Type of plantation
 - Spacing between the plants
 - Type of manuring and fertilizers and its periods
 - Lopping period, interval of watering
 - Survival rate
 - Density of plantation
- The ultimate reclamation planned leaves a congenial environment for development of flora & immigration of small fauna through green belt and water reservoir. The green belt and water reservoir developed within the Project at the end of mine life will attract the birds and animals towards the project area in the post mining period.

The objectives of the greenbelt development plan are –

- Provide a green belt around the periphery of the quarry area to combat the dispersal of dust in the adjoining areas,
- Protect the erosion of the soil, Conserve moisture for increasing ground water recharging,
- Restore the ecology of the area, restore aesthetic beauty of the locality and meet the requirement of fodder, fuel and timber of the local community.

A well-planned Green Belt with multi rows (three tiers) preferably with long canopy leaves shall be developed with dense plantations around the boundary and haul roads to prevent air, dust noise propagation to undesired places and efforts will be taken for the enhancement of survival rate.

10.8.1 Species Recommended for Plantation

Following points have been considered while recommending the species for plantation:

- Creating of bio-diversity.
- Fast growing, thick canopy cover, perennial and evergreen large leaf area,
- Efficient in absorbing pollutants without major effects on natural growth

Table 10.7: Recommended Species to Plant in the Greenbelt

<i>Sl.No</i>	<i>Name of the plant (Botanical)</i>	<i>Family Name</i>	<i>Common Name</i>	<i>Habit</i>
1	<i>Azadirachta indica</i>	Meliaceae	Neem, Vembu	Tree
2	<i>Albiziafalculatoria</i>	Fabaceae	Tamarind, Puliyamaram	Tree
3	<i>Polyalthialongifolia</i>	Annonaceae	Kattumaram	Tree
4	<i>Borassus Flabellifer</i>	Arecaceae	Palmyra Palm	Tree

Source: Proposed by FAE's & EIA Coordinator

10.9 Occupational Safety & Health Management

Occupational safety and health are very closely related to productivity and good employer-employee relationship. The main factors of occupational health in mines are fugitive dust and noise. Safety of employees during mining operation and maintenance of mining equipment will be taken care as per Mines Act 1952 and Rule 29 of Mines Rules 1955. To avoid any adverse effect on the health of workers due to dust, noise and vibration sufficient measures have been provided.

10.9.1 Medical Surveillance and Examinations –

- Identifying workers with conditions that may be aggravated by exposure to dust & noise and establishing baseline measures for determining changes in health.
- Evaluating the effect of noise on workers
- Enabling corrective actions to be taken when necessary
- Providing health education

The health status of workers in the mine shall be regularly monitored under an occupational surveillance program. Under this program, all the employees are subjected to a detail's medical examination at the time of employment. The medical examination covers the following tests under mines act 1952.

- General Physical Examination and Blood Pressure
- X-ray Chest and ECG
- Sputum test
- Detailed Routine Blood and Urine examination

The medical histories of all employees will be maintained in a standard format annually. Thereafter, the employees will be subject to medical examination annually. The above tests keep upgrading the database of medical history of the employees.

10.9.2 Proposed Occupational Health and Safety Measures –

- Providing a clean working environment that is conducive to safety & health annually
- Employee involvement and commitment in the implementation of health and safety guidelines
- Implementing safety and health management system and assessing the effectiveness through periodic audits
- Setting of safety and health objectives based on comprehensive strategic plans and measure performance against these plans
- Provision of necessary standard personal protective equipment's (PPE)
- Ensuring that all employees at all levels receive appropriate training and are competent to carry out their duties and responsibilities.
- Provision of rest shelters for mine workers with amenities like drinking water, fans, toilets urinals, canteen etc.,
- Rotation of workers exposed to noisy areas.
- Daily dust suppression on haul roads to prevent fugitive dust emission into the air.
- First-aid facility at the mine office.

10.9.3 Health and Safety Training Programme

The company shall provide special induction program along with machinery manufacturers for the operators and co-operators to run and maintain the machinery effectively and efficiently. The training program for the supervisors and office staffs will be arranged in the Group Vocational Training Centres in the State. And engage an Environmental Consultants to provide periodical training to all the employ to carry out the mining operation in and eco-friendly manner.

Table 10.8: List of Periodical Trainings Proposed for employees

Course	Personnel	Frequency	Duration	Instruction
New-hire Training	All new hires exposed to mine hazards	Once	One week	Employee rights, Supervisor responsibilities, Self-rescue Respiratory devices, Transportation controls, Communication systems, Escape and emergency evacuation, Ground control hazards, Occupational health hazards, Electrical hazards, First aid, Explosives
Task Training Like Drilling, Blasting, Stemming, safety, Slope stability, Dewatering, Haul road maintenance,	Employees assigned to new work tasks	Before new Assignments	Variable	Task-specific health & safety procedures and SOP for various mining activity. Supervised practice in assigned work tasks.
Refresher Training	All employees who received new-hire training	Yearly	One week	Required health and safety standards Transportation controls Communication systems Escape ways, emergency evacuations, Fire warning Ground control hazards First aid, Electrical hazards Accident prevention Explosives, Respirator devices
Hazard Training	All employees exposed to mine hazards	Once	Variable	Hazard recognition and avoidance Emergency evacuation procedures Health standards Safety rules, Respiratory devices

Source: Proposed by FAE's & EIA Coordinator as per DGMS Norms

10.9.4 Budgetary Provision for Environmental Management

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 10.11 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

TABLE 10.9: EMP BUDGET FOR PROPOSED PROJECT

	Mitigation Measure	Provision for Implementation	Capital	Recurring
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	15400	15400
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	800000	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance - 3 Units	150000	15000
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed - 2 Units	10000	500
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	30800
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0

	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Compentent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	90709
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Mine Closure	1. Progressive Closure Activity - Surface Runoff managent	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	15400	5000
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	308000	10000
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 770Trees - (250Inside Lease Area & 790 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)	50000	7500
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	237000	23700
	4. Implementation of Final Mine Closure Acty as per Approved Mining Plan on Last Year	Few activities already covered as progressive closure activities as greenbelt development, wire fencing, garland drain. *For Final Closure Activities 15% of the proposed closure cost will be spent during the final mine closure stage - Last Year	42150	0
5. Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 A	The Contribution towards Green Funds @ 10% of Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site	205839	0	
Implementation of EC, Mining Plan & DGMS Condition	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	50000

	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee) - 34Employees	136000	34000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	34000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	3080
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	77000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 st Class / 2 nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000
CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Detailed Description in following slides and Budget allocation is included as per MoeEF & CC OM	500000	0
TOTAL			2458800	1236688.8

In order to implement the environmental protection measures, an amount of Rs.24.58lakhs as capital cost and recurring cost as Rs. 12.36 lakhs as recurring cost is proposed considering present market price considering present market scenario for the proposed project.

Year Wise Break Up	
1st Year	₹36,95,488.8
2nd Year	₹12,98,523.2
3rd Year	₹13,63,449.4
4th Year	₹14,31,621.9

5th Year	₹15,45,353
Total	₹ 93 lakhs

10.11 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 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 – 11: SUMMARY AND CONCLUSIONS

Tvl. A.A. Enterprises Colour Granite Quarry (Extent 1.54.0 ha) falls under “B” category as per MoEF & CC Notification (S.O. 3977 (E)).

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B-1 and appraised by SEAC/ SEIAA as well as for cluster situation.

A detailed Draft EIA/ EMP Report is prepared for public and other stakeholders' suggestions and a Final EIA/ EMP Report will be prepared based on the outcome of Public Consultation.

Environmental monitoring and audit mechanism have been recommended before and after commencement of the project, where necessary, to verify the accuracy of the EIA predictions and the effectiveness of recommended mitigation measures.

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the month of Oct to Dec 2023 for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suitable mitigation measures for likely adverse impacts due to the proposed project is suggested individually for the respective proposed project under Chapter 10.

The project proponent ensures to obtain necessary clearances and quarrying will be carried out as per rules and regulations. The Mining Activity will be carried out in a phased manner as per the approved mining plan after obtaining EC, CTO from TNPCB, execution of lease deed and obtaining DGMS Permission and working will be carried out under the supervision of Competent Persons employed.

Overall, the EIA report has predicted that the project will comply with all environment standards and legislation after commencement of the project and operational stage mitigation measures are implemented.

Mining operations has positive impact on environment and socio economy such as landscape improvement, water as by-product, economy development and better public services, providing and supply of Rough Stone quarry & Gravel as per market demand.

Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for nearly 34 people directly in the cluster and indirectly around 100people.

As discussed, it is safe to say that the proposed quarries are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigate technique, as well as to serve as biological indicators for the pollutants released from the Tvl. A.A. Enterprises Colour Granite Quarry (total cluster Extent: 11.09.35ha).

12. DISCLOSURE OF CONSULTANTS

Tvl. A.A. Enterprises have engaged M/s Geo Exploration and Mining Solutions, an Accredited Organization under Quality Council of India – National Accreditation Board for Education & Training, New Delhi, for carrying out the EIA Study as per the ToR Issued.

Name and address of the consultancy:

GEO EXPLORATION AND MINING SOLUTIONS

No 17, Advaita Ashram Road,
Alagapuram, Salem – 636 004
Tamil Nadu, India
Email: infogeoexploration@gmail.com
Web: www.gemssalem.com
Phone: 0427 2431989.

The Accredited Experts and associated members who were engaged for this EIA study as given below

Sl.No.	Name of the expert	In house/ Empanelled	EIA Coordinator		FAE	
			Sector	Category	Sector	Category
1	Dr. M. Ifthikhar Ahmed	In-house	1	A	WP GEO SC	B A A
2	Dr. P. Thangaraju	In-house	-	-	HG GEO	A A
3	Mr. A. Jagannathan	In-house	-	-	AP NV SHW	B A B
4	Mr. N. Senthilkumar	Empanelled	38 28	B B	AQ WP RH	B B A
5	Mrs. Jisha parameswaran	In-house	-	-	SW	B
6	Mr. Govindasamy	In-house	-	-	WP	B
7	Mrs. K. Anitha	In-house	-	-	SE	A
8	Mrs. Amirtham	In-house	-	-	EB	B
9	Mr. Alagappa Moses	Empanelled	-	-	EB	A
10	Mr. A. Allimuthu	In-house	-	-	LU	B
11	Mr. S. Pavel	Empanelled	-	-	RH	B
12	Mr. J. R. Vikram Krishna	Empanelled	-	-	SHW RH	A A

Abbreviations	
EC	EIA Coordinator
AEC	Associate EIA Coordinator
FAE	Functional Area Expert
FAA	Functional Area Associates
TM	Team Member
GEO	Geology
WP	Water pollution monitoring, prevention and control
AP	Air pollution monitoring, prevention and control
LU	Land Use
AQ	Meteorology, air quality modeling, and prediction
EB	Ecology and bio-diversity
NV	Noise and vibration
SE	Socio economics
HG	Hydrology, ground water and water conservation
SC	Soil conservation
RH	Risk assessment and hazard management
SHW	Solid and hazardous wastes
MSW	Municipal Solid Wastes
ISW	Industrial Solid Wastes
HW	Hazardous Wastes

DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

Declaration by experts contributing to the EIA/EMP for Colour Granite Quarry Tvl. A.A. Enterprises over an Extent of 1.54.0 ha in Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District of Tamil Nadu. It is also certified that information furnished in the above EIA study are true and correct to the best of our knowledge.

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

Name: **Dr. M. Ifthikhar Ahmed**

Designation: **EIA Coordinator**

Date & Signature:




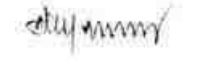
















Period of Involvement: **Dec 2022 to till date**

Associated Team Member with EIA Coordinator:

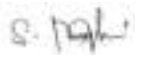



1. Mr.S.Nagamani
2. Mr. P.Viswanathan
3. Mr. Santhoshkumar
4. Mr. S. Ilavarasan





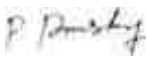
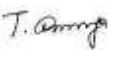
FUNCTIONAL AREA EXPERTS ENGAGED IN THE PROJECT

Sl. No.	Functional Area	Involvement	Name of the Expert/s	Signature
1	AP	<ul style="list-style-type: none"> ▪ Identification of different sources of air pollution due to the proposed mine activity ▪ Prediction of air pollution and propose mitigation measures / control measures 	Mr. A. Jagannathan	
2	WP	<ul style="list-style-type: none"> ▪ Suggesting water treatment systems, drainage facilities ▪ Evaluating probable impacts of effluent/waste water discharges into the receiving environment/water bodies and suggesting control measures. 	Dr. M. Ifthikhar Ahmed	
			Mr. N. Senthilkumar	
3	HG	<ul style="list-style-type: none"> ▪ Interpretation of ground water table and predict impact and propose mitigation measures. ▪ Analysis and description of aquifer Characteristics 	Dr. P. Thangaraju	
4	GEO	<ul style="list-style-type: none"> ▪ Field Survey for assessing the regional and local geology of the area. ▪ Preparation of mineral and geological maps. ▪ Geology and Geo morphological analysis/description and Stratigraphy/Lithology. 	Dr. M. Ifthikhar Ahmed	
			Dr. P. Thangaraju	
5	SE	<ul style="list-style-type: none"> ▪ Revision in secondary data as per Census of India, 2011. ▪ Impact Assessment & Preventive Management Plan ▪ Corporate Environment Responsibility. 	Mrs. K. Anitha	
6	EB	<ul style="list-style-type: none"> ▪ Collection of Baseline data of Flora and Fauna. ▪ Identification of species labelled as Rare, Endangered and threatened as per IUCN list. ▪ Impact of the project on flora and fauna. ▪ Suggesting species for greenbelt development. 	Mrs. Amirtham	
			Mr. Alagappa Moses	

7	RH	<ul style="list-style-type: none"> ▪ Identification of hazards and hazardous substances ▪ Risks and consequences analysis ▪ Vulnerability assessment ▪ Preparation of Emergency Preparedness Plan ▪ Management plan for safety. 	Mr. N. Senthilkumar	
			Mr. S. Pavel	
			Mr. J. R. Vikram Krishna	
8	LU	<ul style="list-style-type: none"> ▪ Construction of Land use Map ▪ Impact of project on surrounding land use ▪ Suggesting post closure sustainable land use and mitigative measures. 	Mr. A. Allimuthu	
9	NV	<ul style="list-style-type: none"> ▪ Identify impacts due to noise and vibrations ▪ Suggesting appropriate mitigation measures for EMP. 	Mr. A. Jagannathan	
10	AQ	<ul style="list-style-type: none"> ▪ Identifying different source of emissions and propose predictions of incremental GLC using AERMOD. ▪ Recommending mitigations measures for EMP 	Mr. N. Senthilkumar	
11	SC	<ul style="list-style-type: none"> ▪ Assessing the impact on soil environment and proposed mitigation measures for soil conservation 	Dr. M. Ifthikhar Ahmed	
12	SHW	<ul style="list-style-type: none"> ▪ Identify source of generation of non-hazardous solid waste and hazardous waste. ▪ Suggesting measures for minimization of generation of waste and how it can be reused or recycled. 	Mr. A. Jagannathan	
			Mr. J. R. Vikram Krishna	

LIST OF TEAM MEMBERS ENGAGED IN THIS PROJECT

Sl.No.	Name	Functional Area	Involvement	Signature
1	Mr. S. Nagamani	AP; GEO; AQ	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Provide inputs & Assisting FAE with sources of Air Pollution, its impact and suggest control measures ▪ Provide inputs on Geological Aspects ▪ Analyse & provide inputs and assist FAE with meteorological data, emission estimation, AERMOD modelling and suggesting control measures 	
2	Mr. Viswanathan	AP; WP; LU	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Provide inputs & Assisting FAE with sources of Air Pollution, its impact and suggest control measures ▪ Assisting FAE on sources of water pollution, its impacts and suggest control measures ▪ Assisting FAE in preparation of land use maps 	
3	Mr. Santhoshkumar	GEO; SC	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Provide inputs on Geological Aspects ▪ Assist in Resources & Reserve Calculation and preparation of Production Plan & Conceptual Plan ▪ Provide inputs & Assisting FAE with soil conservation methods and identifying impacts 	
4	Mr. Umamahesvaran	GEO	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Provide inputs on Geological Aspects 	

			<ul style="list-style-type: none"> ▪ Assist in Resources & Reserve Calculation and preparation of Production Plan & Conceptual Plan 	
5	Mr. A. Allimuthu	SE	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assist FAE with collection of data's ▪ Provide inputs by analysing primary and secondary data 	
6	Mr. S. Ilavarasan	LU; SC	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assisting FAE in preparation of land use maps ▪ Provide inputs & Assisting FAE with soil conservation methods and identifying impacts 	
7	Mr. E. Vadivel	HG	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assist FAE & provide inputs on aquifer characteristics, ground water level/table ▪ Assist with methods of ground water recharge and conduct pump test, flow rate 	
8	Mr. D. Dinesh	NV	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assist FAE and provide inputs on impacts due to proposed mine activity and suggest mitigation measures ▪ Assist FAE with prediction modelling 	
9	Mr. Panneer Selvam	EB	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assist FAE with collection of baseline data ▪ Provide inputs and assist with labelling of Flora and Fauna 	
10	Mrs. Nathiya	EB	<ul style="list-style-type: none"> ▪ Site Visit with FAE ▪ Assist FAE with collection of baseline data ▪ Provide inputs and assist with labelling of Flora and Fauna 	

DECLARATION BY THE HEAD OF THE ACCREDITED CONSULTANT ORGANIZATION

I, Dr. M. Ifthikhar Ahmed, Managing Partner, Geo Exploration and Mining Solutions, hereby, confirm that the above-mentioned Functional Area Experts and Team Members prepared the EIA/EMP for Colour Granite Quarry Tvl. A.A. Enterprises over an Extent of 1.54.0 ha in Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District of Tamil Nadu. It is also certified that information furnished in the EIA study are true and correct to the best of our knowledge.

Signature & Date:



Name:

Dr. M. Ifthikhar Ahmed

Designation:

Managing Partner

Name of the EIA Consultant Organization:

M/s. Geo Exploration and Mining Solutions

NABET Certificate No & Issue Date:

NABET/EIA/2225/RA0276 Dated: 20-02-2023

Validity:

Valid till 06.08.2025

ANNEXURE

Tvl. A.A. ENTERPRISES COLOUR GRANITE QUARRY

S.F.Nos. 609A(Part) (Bit-5),
Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District

EXTENT = 1.54.0 ha

ToR obtained

Letter No. SEIAA-TN/F.No. 10161/ToR-1525/2023 Dated :07/08/2023

Project Proponent

Tvl. A.A. Enterprises

(Managing Partner - S. Ramasubramaniam),

No. 93&94 Poombugar Nagar,

Valar Nagar, Uthangudi

Madurai District – 625 107

LIST OF ANNEXURES

ANNEXURES	DESCRIPTION	PAGE NOS
P1- Tvl. A.A. ENTERPRISES,	COPY OF TERMS OF REFERENCE	1A - 23A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	24A – 26A
	COPY OF MINING PLAN APPROVED LETTER	27A - 35A
	COPY OF APPROVED MINING PLAN WITH PLATES	36A - 112A
	COPY OF ADDITIONAL DOCUUMENT	113A - 126A
E1 – THIRU.P.GANDHI	COPY OF ENVIRONMENTAL CLEARANCE	127A – 143A
E2 – THIRU.D.DHANAPAL	COPY OF ENVIRONMENTAL CLEARANCE	144A – 162A
E3 – THIRU.A.ANBARIVU	COPY OF PRECIASE AREA COMMUNICATON LETTER	163A – 164A
E4 – THIRU.G.KRISHNAPPA GOUNDER	COPY OF MINING PLAN APPROVED LETTER	165A
	COPY OF BASE LINE MONITORING DATA	166A - 239A
	COPY OF NABET CERTIFICATE	240A



THIRU.DEEPAK S.BILGI, I.F.S.,
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY – TAMIL NADU

3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet,
Chennai-15.

Phone No. 044-24359973

Fax No. 044-24359975

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.10161/ToR-1525/2023 Dated:07.08.2023.

To

Tvl. A.A. Enterprises
D.No.93&94, Poombugar Nagar,
Valar Nagar, Uthangudi,
Madurai District-625107

Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with public Hearing (ToR) for the Proposed Colour Granite Quarry lease over an extent of 1.54.0Ha (Government Poromboke Land) at S.F.Nos.609A(Part) (Bit-5) Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu by Tvl. A.A. Enterprises - 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/434043/2023, dt:20/06/2023.
2. Your application submitted for Terms of Reference dated: 27.06.2023.
3. Minutes of the 394th meeting of SEAC held on 21.07.2023.
4. Minutes of the 644th Authority meeting held on 07.08.2023.

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

The proponent, Tvl. A.A. Enterprises has submitted application for Terms of Reference (ToR) with public Hearing, in Form-I, Pre- Feasibility report for the Proposed Colour Granite Quarry lease over


MEMBER SECRETARY
SEIAA-TN

an extent of 1.54.0Ha (Government Poromboke Land) at S.F.Nos.609A(Part) (Bit-5) Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu.

Discussion by SEAC and the Remarks:-

Proposed Colour Granite Quarry lease over an extent of 1.54.0Ha (Government Poromboke Land) at S.F.Nos.609A(Part) (Bit-5) Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu by Tvl. A.A. Enterprises - For Terms of Reference. (SIA/TN/MIN/434043/2023, dt:20/06/2023)

The proposal was placed in this 394th meeting of SEAC held on 21.07.2023. 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, Tvl. A.A. Enterprises has applied for Terms of Reference for the Colour Granite Quarry lease over an extent of 1.54.0Ha (Government Poromboke Land) at S.F.Nos.609A(Part) (Bit-5) Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu.
2. 500m Radius cluster from DD/Dept. of G&M Lr. RoC. No. 1054/2020/Mines Dt: 27.04.2023.(Cluster Area - 11.09:35 Ha).
3. The project/activity is covered under Category "B1" of Item 1(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, 2006.
4. As per the precise area communication the lease period is for 20 years. The scheme mining plan is for 5 Years. The production & development quantity for first five Years shall not exceed 29440m³ of RoM including 8832m³ of Colour Granite (Recovery- 30%) & 20608m³ of Granite Reject (Reject - 70%) and the depth of mining upto 24m (15mAGL & 9m BGL). the annual Peak production shall not exceed 6075 m³ of RoM.

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

1. The study on impact of the proposed quarrying operations on the surrounding environment which includes water bodies, etc.
2. The Proponent shall furnish a comprehensive plan for storing the waste blockage of granite produced from the proposed quarrying operation to ensure sustainable environment.


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SEIAA-TN


3. The proponent shall furnish a revised EMP budget for entire life of proposed mining.

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 proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.
4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.
5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.
7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches


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- to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.
8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.
 9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.
 10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
 11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
 12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
 13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
 14. Quantity of minerals mined out.
 - Highest production achieved in any one year
 - Detail of approved depth of mining.
 - Actual depth of the mining achieved earlier.
 - Name of the person already mined in that leases area.
 - If EC and CTO already obtained, the copy of the same shall be submitted.
 - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.


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15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,
17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.
19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.


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23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
28. Impact on local transport infrastructure due to the Project should be indicated.
29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc..) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.


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33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner
34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.
42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.


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

Appendix -I
List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	<i>Aegle marmelos</i>	Vilvam	வில்வம்
2	<i>Adenaanthera pavonina</i>	Manjadi	மஞ்சாடி, ஆனைக்குன்றிமணி
3	<i>Albizia lebeck</i>	Vaagai	வாளை
4	<i>Albizia amara</i>	Usil	உசில்
5	<i>Bauhinia purpurea</i>	Mantharai	மந்தாரை
6	<i>Bauhinia racemosa</i>	Aathu	ஆத்தி
7	<i>Bauhinia tomentosa</i>	Iruvathi	இருவாத்தி
8	<i>Buchanania axillaris</i>	Kattuma	காட்டுமா
9	<i>Borassus flabellifer</i>	Panai	பனை
10	<i>Butea monosperma</i>	Murukkamaram	முருக்கமரம்
11	<i>Bobax ceiba</i>	Ilavu, Sevvilavu	இலவு
12	<i>Calophyllum moperyllum</i>	Punnai	புன்னை
13	<i>Cassia fistula</i>	Sarakondrai	சரக்கொன்றை
14	<i>Cassia roxburghii</i>	Sengondrai	செங்கொன்றை
15	<i>Chloroxylon sweetenia</i>	Purasamaram	புரசு மரம்
16	<i>Cochlospermum religiosum</i>	Kongu, Manjallavu	கோங்கு, மஞ்சளி இலவு
17	<i>Cordia dichotoma</i>	Naruvuli	நருவூளி
18	<i>Creteva adansonii</i>	Mavaingum	மாலைங்கம்
19	<i>Dillema indica</i>	Uva, Uzha	உசா
20	<i>Dillema pentagyna</i>	SiruUva, Sitruzha	சிறு உசா
21	<i>Diospyro sebenum</i>	Karungali	கருங்காலி
22	<i>Diospyro schloroxylon</i>	Vaganai	வாகளை
23	<i>Ficus amplissima</i>	Kalltchi	கல் இச்சி
24	<i>Hibiscus tiliaceou</i>	Aatrupoovarasu	ஆற்றுப்புலரசு
25	<i>Hardwickia binata</i>	Aacha	ஆச்சா
26	<i>Holoptelia integrifolia</i>	Aayili	ஆயா மரம், ஆயிலி
27	<i>Lanea coromandelica</i>	Odhiam	ஒதியம்
28	<i>Lagerstroemia speciosa</i>	Poo Marudhu	பூ மருது
29	<i>Lepisanthus tetraphylla</i>	Neikottaimaram	நெய் கொட்டை மரம்
30	<i>Limonia acidissima</i>	Vila maram	வில்லா மரம்
31	<i>Litsea glutinos</i>	Pisinpattai	பிரம்பா பிசிண்டை
32	<i>Madhuca longifolia</i>	Iluppai	இலுப்பை
33	<i>Manilkara hexandra</i>	UlakkaiPaalai	உலக்கை பாலை
34	<i>Mimusops elengi</i>	Magizhamaram	மகிழ்மரம்
35	<i>Mitragyna parvifolia</i>	Kadambu	கடம்பு
36	<i>Morinda pubescens</i>	Nuna	நுணா
37	<i>Morinda citrifolia</i>	Vellai Nuna	வெள்ளை நுணா
38	<i>Phoenix sylvestre</i>	Eachai	எச்சமரம்
39	<i>Pongamia pinnat</i>	Pungam	பங்கம்

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40	<i>Premna mollissima</i>	Munnai	முன்னை
41	<i>Premna serratifolia</i>	Narumunnai	நறு முன்னை
42	<i>Premna tomentosa</i>	Malaipoovarasu	மலை பூவரசு
43	<i>Prosepis cinerea</i>	Vanni maram	வன்னி மரம்
44	<i>Pterocarpus marsupium</i>	Vengai	வேங்கை
45	<i>Pterospermum canescens</i>	Vennangu, Tada	வேண்ணாங்கு
46	<i>Pterospermum xylocarpum</i>	Polavu	புலவு
47	<i>Puthranjiva roxburghii</i>	Karipala	கரிபாலா
48	<i>Salvadora persica</i>	Ugaa Maram	ஊகா மரம்
49	<i>Sapindus emarginatus</i>	Marupungari, Soapukai	மணிப்புகள் சோப்புக்காய்
50	<i>Saraca asoca</i>	Asoca	அசோகா
51	<i>Streblus asper</i>	Piray maram	பிராய் மரம்
52	<i>Strychnos nuxvomica</i>	Yetti	எட்டி
53	<i>Strychnos potatorum</i>	Therthang Kottai	தேத்தான் கொட்டை
54	<i>Syzygium cumini</i>	Naval	நாவல்
55	<i>Terminalia belleric</i>	Thandri	தாண்டி
56	<i>Terminalia arjuna</i>	Ven marudhu	வேன் மருது
57	<i>Toona ciliata</i>	Sandhana vembu	சந்தன வேம்பு
58	<i>Thespesia populnea</i>	Puvarasu	பூவரசு
59	<i>Walsuratrifoliata</i>	valsura	வால்சுரா
60	<i>Wrightia tinctoria</i>	Veppalai	வேப்பாலை
61	<i>Pithocellobium dulce</i>	Kodukkapuli	கொடுக்காபுளி

**Appendix-II
Display Board
(Size 6' x5' with Blue Background and White Letters)**

-----கரங்கம்-----

ஏர்செய்வரின் குவார்டி செயல்பாடுகளுக்கான சுற்றுச்சூழல் அழகுநலி கீழ்க்கண்ட நிபந்தனைகளுக்கு உட்பட்டு வழங்கப்பட்டுள்ளது. தேதியிடவும். சுற்றுச்சூழல் அழகுநலி _____ தேதி வரை செயல்படுத்தக்கூடாது உடனடி.

பகலம் பத்தி வார்ப்பு மேம்பாட்டுக்கான ஏர்செத் திட்டம்	குவார்டியின் எம்ஸையம் சுற்றி வேலி அமைக்க வேண்டும் ஏர்செய்வரின் ஆரம்ப நாளாட்டத்திற்குத் திட்டமிட்டிருக்கிற யுகாஸ் இடுக்க வேண்டும் கார்டில் மாசு ஏற்படாதவாறு ஏர்செ பணிகளை மேற்கொள்ள வேண்டும். வாகனங்கள் செல்லும் பாதையில் மாசு ஏற்படாத அளவிற்கு தண்ணீரை முன்பாக தண்ணீர் வாரிகளில் மூலமாக அல்லப்போது தெளிக்க வேண்டும். இளஞ்சல் அமைப்பில் டூசி மாசுபட்டையம் குளறுபடுதற்கான குவார்டியின் எம்ஸையம் சுற்றி அடத்தியான பகலம் பத்தியை ஏற்படுத்த வேண்டும்.
நடப்பட்டு புறமறிக்கப்பட வேண்டிய மரங்கள் எண்ணிக்கை	ஏர்செத்தில் 0000 எவர்க்கும்பொழுது நிலத்திற்கான ஏற்படாதவாறும் மற்றும் ஏடுகள் டிக்காதவாறும் பாதுகாப்பு நடவடிக்கைகளை உண்டிப்பாக செயல்படுத்தப்பட வேண்டும்.
ஏர்செத்தில் இருந்து ஏற்படும் இளஞ்சல் அளவு 85 டெசிபெல் (dB) அளவிற்கு மேல் ஏற்படாதவாறு தகுந்த ஓட்டுப்பாடுகளை மேற்கொள்ள வேண்டும்.	ஏர்செ ஓட்ட வரிகள் 10000 கீழ் ஏர்செத்தில் உயர் பணியாளர்களுக்கு தகுந்த பாதுகாப்பு கருவிகள் வழங்குவதற்கு க்காதாரமுள்ள அபிப்பாறு யாதிக்கை செய்து தர வேண்டும்.
யுகாஸ் அல்லது பதினாய்தது வழியாக வாகனங்கள் செல்லும் எண்ணிய தெடர்ந்து தங்க புறமறிக்க வேண்டும்.	யுகாஸ் அல்லது உயர் விவசாயப் பணிகள் மற்றும் நிதிநிலைகள் பாதிக்கப்படக் கூடாது.
நிதிநிலைகள் பாதிக்கப்படாமல் இருப்பதை உறுதி செய்வதில் யுகாஸின் நிபந்தனை நிதி அலுவலர் தொடர்ந்து எண்ணிக்கை வேண்டும்.	ஏர்செத்திற்கு கணிசமான அளவு செல்லும் ஏர்செ கிராம மக்களுக்கு எந்த சிரமத்தினையும் ஏற்படுத்தாதவாறு பாதுகாப்போடும் மற்றும் சுற்றுச்சூழல் பாதிக்காத வண்ணம் வாகனங்களை இயக்க வேண்டும்.
ஏர்செய்வரின் முடிக்கப்பட்டவுடன் ஏர்செ மூடல் திட்டத்தில் உள்ளவாறு ஏர்செத்தினால் மூட வேண்டும்.	ஏர்செ நடவடிக்கைகளை முடித்தபின்னர் ஏர்செ பத்தி மற்றும் ஏர்செ நடவடிக்கைகளை இடைநிறு ஏற்படக்கூடிய வேறு ஏர்செ பத்தியையும் மறுகட்டுமானம் செய்து தரவார்ப்பின் விவரங்கள் ஆரியயற்றின் வார்ப்பிற்கு ஏற்ற வகையில் பகலம்பத்தியை உருவாக்க வேண்டும்.
முழுமையான நிபந்தனைகளை அறிய பாரிவேஷ (http://parivesh.nic.in) என்கிற இணையதளத்தை பார்க்கவும். மேலும் சந்தவிற சுற்றுச்சூழல் சந்தை யாளர்களுக்கு சென்சைஸில் உயர் சுற்றுச்சூழல் மற்றும் வள அமைச்சகத்தில் மருகுவீண்கு வட்டார அலுவலகம்: 044 - 2822235 (அல்லது) தமிழ்நாடு மாசு கட்டுப்பாடு வாரியத்தின் மாசுட்ட சுற்றுச்சூழல் மேற்பார்வை அலுவலர்	

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Discussion by SEIAA and the Remarks:-

The proposal was placed in the 644th Authority meeting held on 07.08.2023. The authority noted that this proposal was placed for appraisal in 394th SEAC meeting held on 21.07.2023. 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.
10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.


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11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.

Impact study of mining

12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following

- a) Soil health & soil biological, physical land chemical features.
- b) Climate change leading to Droughts, Floods etc.
- c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
- d) Possibilities of water contamination and impact on aquatic ecosystem health.
- e) Agriculture, Forestry & Traditional practices.
- f) Hydrothermal/Geothermal effect due to destruction in the Environment.
- g) Bio-geochemical processes and its foot prints including environmental stress.
- h) Sediment geochemistry in the surface streams.

Agriculture & Agro-Biodiversity

13. Impact on surrounding agricultural fields around the proposed mining Area.

14. Impact on soil flora & vegetation around the project site.

15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.

16. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem,

17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.

18. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.

Forests

19. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.

20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.


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21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.

Water Environment


23. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.
24. Erosion Control measures.
25. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.
26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.
28. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
30. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.

Energy

31. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.

Climate Change

32. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.


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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/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.

Others

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


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A. STANDARD TERMS OF REFERENCE

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


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



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Committee of National Board of Wildlife and copy furnished.

- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and


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- EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
 - 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
 - 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
 - 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
 - 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
 - 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
 - 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
 - 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
 - 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form


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


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time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

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


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existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

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

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

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

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


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

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

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.


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


MEMBER SECRETARY
SEIAA-TN

Copy to:

1. The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.

3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
4. The APCCF (C), Regional Office, MoEF & CC (SZ), 34, HEPC Building, 1st& 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai -34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan, CGO Complex, New Delhi 110003
6. The District Collector, Krishnagiri District.
7. Stock File.

From

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

To

Tvl. A.A.Enterprises,
No. 93&94, Poombugar nagar,
Valar nagar, Uthangudi,
Madurai District.

Roc.No. 1054/2020 /Mines dated: 27.04.2023.

Sir,

Sub: Mines and Minerals - Krishnagiri District - Grey Granite - Tender Cum Auction was conducted - Pochampalli Taluk - Nagojanahalli Village - S.F.Nos. 609 A (P) (Pit -5) over an extent of 1.54.00 hecets for quarrying Grey Granite quarry lease application prepared by Tvl. A.A.Enterprises - Mining plan forwarded to the Comminssioner of Geology and Mining - Details of quarries situated within 500 mts radial distance - Requested by the lessee - Details furnished - reg.

- Ref:**
1. G.O.(MS) No. 79, Industries Department dated: 06.04.2015.
 2. The Principal Secretary to Government, Industries (MME.2) Department, Secretariat, Chennai - 600009 Lr.No.903/ MME.2/2021-1, dated: 26.02.2021.
 3. Mining Plan forwarded to the Comminssioner of Geology and Mining vide Roc.No. 1054/2020/Mines dated: 23.03.2023.
 4. Tvl. A.A.Enterprises, representation letter dated: 24.04.2023.

kind attention is invited to the reference cited.

2) Tender Cum Auction was conducted in Krishnagiri District on 07.11.2020 for Colour granite quarry area situated over an extent of 1.54.00 hect of Government land in S.F.No. 609 A (P) (Bit-5) of Nagojanahalli village, Pochampalli Taluk, Krishnagiri District. Tvl. A.A.Enterprises, had offered a highest bid/tender amount of Rs.1,41,00,000/- as one time lease amount. Hence necessary proposals had been forwarded by the District Collector to the Government through the Commissioner of Geology and Mining, Chennai for grant of Colour granite quarry lease infavour of the highest bidder Tvl. A.A.Enterprises over the subject area for a period of 20 years vide letter dated: 03.12.2020.

3. The lessee has submitted Draft mining plan for the 1st five years which was forwarded to the Commissioner of Geology and Mining vide letter dated: 23.03.2023.

4. At this juncture, the details of quarries situated within 500mts for the subject quarry requested by the lessee vide letter dated: 24.04.2023 to furnish the same before SEIAA in orders to get Environmental Clearance.

5. As requested by the lessee the details of quarries situated within 500m radius is furnished as follows:

I. Details of Existing quarries.


Sl. No	Name of the Lessee and address	Mineral	GO No & Date	Taluk & Village	S.F.No & Extent	Period of lease
1.	Thiru P. Gandhi, S/o Paramasivam, No. 3/483, Jainoor Marichettihalli Post, Krishnagiri	Colour Granite	G.O (3D) No.15 Ind (MME-2) Dept. dated 03.10.2020.	Nagojanahalli Village, Pochampalli	745/ 1A 745/2 770/1B 2.771/2 1.97.35 hects	31.10.2020 to 30.10.2040
2.	Thiru D. Dhanapal, S/o Duraisamy Udayar, 7/395 Meibatchapet, Harur Post Taluk.	Colour Granite	G.O (3D) No.10 Ind (MME-2) Dept. dated 01.04.2015	Nagojanahalli Village, Pochampalli	741/8B, 742/2, 743/2 1.68.00 hects	13.05.2015 To 12.05.2035
3.	Thiru. A. Anbaruvi, No. 16A Chinniah street, T.Nagar, Chennai	Colour Granite	G.O (3D) No.94 Ind (MME-2) Dept. dated 02.05.1995	Nagojanahalli Village, Pochampalli	774(P) 2.02.50 hects	16.05.1995 to 15.05.2005 (Rule – 39 under court order)
4.	G.Krishnappa Gounder	Colour Granite	G.O (3D) No.115 Ind (MME-2) Dept. dated 02.05.1995	Nagojanahalli Village, Pochampalli	609A(P) 2.02.50 hects	09.05.1995 to 08.05.2005 (Rule – 39 under court order)
5.	A. Latha	Colour Granite	G.O (3D) No.9 Ind (MME-2) Dept. dated 02.04.1996	Nagojanahalli Village, Pochampalli	609A(P) 0.81.00 hects	16.05.1995 to 15.05.2005 (Rule – 39 under court order)
6.	B.Venkatesh, No. 49-A, Pennagaram, Kumarasami pet, Dharmapuri	Colour Granite	G.O (3D) No.88 Ind (MME-2) Dept. dated 24.04.1995	Nagojanahalli Village, Pochampalli	609A(P) 0.81.00 hects	19.05.1995 to 18.05.2005 (Rule – 39 under court order)

II. Details of abandoned/Old quarries.

Sl. No.	Name of the lessee	GO.No. & Dated	Village & Taluk	S.F No.	Extent in Hect	Lease period.
1.	----- Nil -----					

III. Details of other Proposed/applied quarries

Sl. No.	Name of the lessee	Mineral	GO.No. & Dated	Village & Taluk	S.F No.	Extent in Hect	Lease period
1	Tvl. A.A. Enterprises, Managing Partner Thiru. S. Ramasubramainam , No. 93&94, Poombugar nagar, Valarnagar, Uthangari, Madurai	Colour Granite	Rc.no. 1054/2020 / Mines	Nagojanahalli i Village, Pochampalli	609A(P) (Bit-5)	1.54.00 hects	Instant Proposal (Mining plan forwarded to CGM for approval).
2.	KMB Granites and Marble company, Swarnapuri, Salem	Colour Granite	Rc.no. 1051/2020 / Mines	Nagojanahalli i Village, Pochampalli	609A(P) (Bit-2)	4.10.00 hects	Mining plan forwarded to CGM for approval.
3.	D.M. Lokanathan, 22 nd Main road, Bangalore	Colour Granite	Rc.no. 1053/2020 / Mines	Nagojanahalli i Village, Pochampalli	609A(P) (Bit-4)	1.80.00 hects	Mining plan forwarded to CGM for approval.


 Deputy Director,
 Dept of Geology and Mining,
 Krishnagiri.


 27/7/23

Copy to :-

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

COMMISSIONERATE OF GEOLOGY AND MINING

From

Thiru J.Jayakanthan, I.A.S.,
Commissioner of Geology and Mining,
Industrial Estate,
Guindy,
Chennai - 600 032.

To

Tvl.A.A.Enterprises,
D.No.93 & 94, Poombugar
Nagar, Valar Nagar,
Uthangudi,
Madurai District- 625 107.

Rc.No. 6945/MM4/2021 Dated .04.2023

Sir,

Sub: Mines and Minerals - Minor Mineral - Granite -
Krishnagiri District - Tender Cum Auction for Granite
quarries conducted under the provisions of rule 8(A) of
TNMMCR 1959 on 07.11.2020 - Colour Granite quarry
area over an extent of 1.54.00 hecets of Government land
in S.F.No. 609 A (P) (Bit-5) in Nagojanahalli village,
Pochampalli Taluk, Krishnagiri District - Precise area
communicated to the highest bidder Tvl. A.A.Enterprises
- Draft Mining Plan submitted for approval - Forwarded
by the Deputy Director, Geology and Mining, Krishnagiri
for approval - Approval accorded.

- Ref: 1. Krishnagiri District Gazette Extraordinary issue in
English No.20, Tamil No.35 dated: 09.10.2020.
2. Application of the Tvl. A.A.Enterprises, Managing
Partner Thiru. S. Ramasubramainam, No. 93&94,
Poombugar nagar, Valar nagar, Uthangudi,
Madurai District dated: 07.11.2020 and six
others.
3. The District Collector, Krishnagiri, File Roc.
No.1054/2020/Mines, dated: 03.12.2020.
4. The Principal Secretary to Government, Industries
(MME.2) Department, Secretariat, Chennai -
600009 Lr.No.903/ MME.2/2021-1, dated:
26.02.2021.
5. Draft Mining Plan Submitted by Tvl.
A.A.Enterprises dated: 05.05.2021.
6. Writ Petition filed by Thiru A. Chellakumar before
Hon'ble High Court Madras in W.P.No.
16060/2020.

7. Writ Petition filed by Thiru R. Thamaraiselvan before Hon'ble High Court Madras in W.P.No. 13811/2020
8. The District Collector, Krishnagiri Rc.No.1054/2020/Mines dt.2.6.2021.
9. Representation of Tvl. A.A.Enterprises Letter. Dated: 18.06.2021.
10. District Collector, Krishnagiri Lr. Rc.No. 1054/2020/Mines dated: 02.07.2021.
11. The Commissioner of Geology and Mining, Chennai Lr.Rc.No.3256/MM4/2022 dated: 05.01.2023.
12. The Deputy Director, Geology and Mining, Krishnagiri Rc.No.1054/2020/Mines dt.23.3.2023.

-oOo-

Kind attention invited to the above references cited.

2) In the reference 9th cited, applicant company Tvl.A.A.Enterprises has submitted the mining plan for approval for the quarry lease applied for quarrying Colour Granite over an extent of 1.54.00 ha of Government land in S.F.No.609 A (part) (Bit-4) in Nagojanahalli village, Pochampalli Taluk, Krishnagiri District for a period of 20 years.

3) The Deputy Director (G&M), Krishnagiri district in the reference 12th cited has forwarded the mining plan for first five years period submitted by applicant company Tvl.A.A.Enterprises for approval stating the following.

- i. Tender Cum Auction was conducted in Krishnagiri District on 07.11.2020 for Colour granite quarry area situated over an extent of 1.54.00 hect of Government land in S.F.No. 609 A (P) (Bit-5) of Nagojanahalli village, Pochampalli Taluk, Krishnagiri District. Tvl. A.A.Enterprises, had offered a highest bid/tender amount of Rs.1,41,00,000/- as one time lease amount. Hence necessary proposals had been forwarded by the District Collector to the Government through the Commissioner of Geology and Mining, Chennai for grant of Colour granite quarry lease infavour of the highest bidder Tvl. A.A.Enterprises over the

subject area for a period of 20 years vide letter dated: 03.12.2020.

- ii. The Government after detailed examination has issued precise area vide letter dated 26.02.2021 for the proposed grant of Colour granite quarry lease infavour of the highest bidder over an extent of 1.54.00 hect in Government land in S.F.No. 609 A (P) (Bit-5) of Nagojanahalli village, Pochampalli Taluk, Krishnagiri District and directed the highest bidder Tvl. A.A.Enterprises to remit the balance amount of Rs. 1,16,00,000/- (Rupees One crore Sixteen lakhs only) within one month from the date of receipt of the communication after deducting the EMD of Rs. 25,00,000/- already remitted by the applicant and directed to submit the approved mining plan and Environment Clearance.
- iii. Tvl. A.A.Enterprises, have stated vide letter dated: 25.03.2021 that they had received the precise area communication letter from Government and had submitted the balance amount for Rs. 1,16,00,000/- through the Demand Draft no. 765095, 765094 dated: 24.03.2021 at the district office and the same had been remitted to the Govt. account on 31.03.2021.
- iv. In response to the Government letter, the applicant had submitted 6 copies of draft mining plan duly prepared by the qualified person for approval on 05.05.2021 and the same was returned by District office with direction to make correction. In representation dated 18.06.2021 the applicant company requested to grant additional time for the submission of mining plan due to covid-19 pandemic and lockdown in the entire country.
- v. The representation was forwarded by the District Collector, Krishnagiri vide letter dated: 02.07.2021

- vi. Further, the Commissioner of Geology and Mining, Chennai vide letter dated 05.01.2023 vide reference 11th cited has instructed to forward all the pending mining plans and scheme of mining plan to Commissioner immediately for taking further action.
- vii. The draft mining plan submitted by the applicant company have been verified by the Assistant Geologist (Mines) with reference to field conditions. The draft Mining Plan has been prepared by the Qualified person. The details such as Geological Reserves, Mineable Reserves, Year wise production and Development programme have been incorporated in the draft Mining Plan. The Special conditions imposed in the precise area communication are also incorporated in the draft mining plan.
- viii. The year wise production quantity mention in the mining plan is given as detailed below.

Year	Rom (m ³)	Recovery @ 30 % (m ³)	Granite Waste @ 70 % (m ³)	Weathered rock in (m ³)	Top Soil in (m ³)
1 st Year	5900	1770	4130	18224	4040
2 nd year	5900	1770	4130	5044	-
3 rd year	5690	1707	3983	-	-
4 th year	5875	1763	4112	-	-
5 th year	6075	1822	4253	-	-
Total	29440	8832	20608	23268	4040

- ix. Further, other quarries situated within 500 mts radial distance are furnished.
- x. The Mining Plan has been prepared by the Qualified Person. The details such as Geological Reserves, Mineable Reserves, Year wise production and Development programme have been incorporated in the Mining plan. The Special conditions imposed in the precise area communication are incorporated in the mining plan. There is no archeological monument within

300mts radius and no Wildlife Sanctuary within 1.00 km radius.

- xi. Hence, the Deputy Director, Geology and Mining, Krishnagiri has forwarded the Mining Plan submitted by the applicant company Tvl. A.A.Enterprises in respect of Govt land S.F.No. 609 A (P) (Bit-5) of Nagojanahalli village for approval, subject to the conditions that,

a. A safety distance of 10meters should be provided to the adjacent Government lands surrounding the quarry lease applied area.

b. The applicant should obey the final orders if any to be passed by the Hon'ble High Court of Madras in connection with the pending writ petitions filed against the Tender Cum Action conducted for the grant of quarry leases in Government land in respect of Granite.

- xii. Finally the Deputy Director, Geology and Mining, Krishnagiri has forwarded the mining plan submitted by the applicant Tvl. A.A.Enterprises for approval, by granting extension of time limit for the submission of approved mining plan in respect of Granite as contemplated under Rule 12 of Granite Conservation and Development Rules-1999.

5) The mining plan is in accordance with the precise area communicated for grant of lease to the subject area. Based on the report of the Deputy Director (G&M), Krishnagiri district, the Mining plan submitted by M/s. A.A.Enterprises is hereby approved subject to the following conditions in addition to the conditions stipulated in the precise area communication issued by the Government:

i. A safety distance of 10meters should be provided to the adjacent Government lands surrounding the quarry lease applied area.

ii. The applicant should obey the final orders if any to be passed by the Hon'ble High Court of Madras in connection with the pending writ petitions filed against the Tender Cum Action

conducted for the grant of quarry leases in Govt land in respect of Granite.

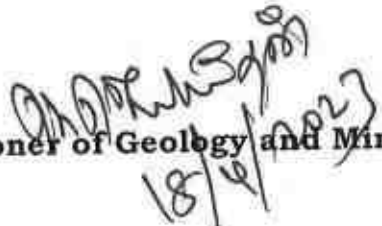
- iii. This mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such Laws are made by the Central Government, State Government or any other authority.
- iv. The approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980' Indian Explosives Act, 1884 (Central Act IV of 1884) and the rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- v. This mining plan including Progressive mine closure plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- vi. Provisions of the Mines Act, 1952 and the Rules and Regulations made there under including submission of notice of opening, appointment of manager and other statutory officials as required under Mines Act, 1952 shall be complied with.
- vii. Provisions made under Mines and Minerals (Development & Regulation) Act, 1957, MMDR Amendment Act, 2015 and Granite conservation and Development Rules, 1999 made there under shall be complied with.
- viii. The applicant company should provide 7.5 m safety distance to the adjacent patta lands in all the sides.
- ix. Granite waste materials should be dumped within the quarry lease area and should not be dumped outside the boundary of the lease area.

- x. No hindrance should be caused to the adjacent pattadhars and public while quarrying and transportation of minerals from the subject area.
- xi. Environmental Clearance should be obtained from the authority in respect of the subject area as per rule 42 of the Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the notification of the Ministry of Environment and Forest and any other clearances if any.
- xii. The four boundaries of the applied area are fixed and the quarrying activity should be restricted within the area granted on lease.
- xiii. The applicant company should fence the lease granted area with barbed wire before the execution of lease deed as follows: -
 - The pillar post shall be firmly grounded with concrete foundation of height not less than 2mts with a distance between two pillars shall not be more than 3mts.
 - The applicant company shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan.
 - A soft copy of the digitized map with DGPS readings should be submitted in the CD to the Deputy Director (G&M), Krishnagiri.
- xiv. Barbed wire fencing or Compound wall should be erected all along the boundary of the lease granted area.
- xv. The applicant company should use mild explosives during quarrying.
- xvi. The applicant company should ensure that while starting the quarry work, all the quarry workers working under their control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme.
- xvii. The conditions mentioned in G.O. (Ms) No.79, Industries (MMC.1) Department, dated 06.04.2015 should be complied with.

- xviii. The applicant company should comply with the conditions stipulated in the Government of India, Ministry of Mines order No.11/02/2020, dated 14.01.2020 issued as per the orders of the Hon'ble Supreme Court of India dated 08.01.2020 that, "the mining leaseholders shall after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to this mining activities and restore the land to a condition which is fit for growth of fodders, flora and fauna etc."
- xix. The applicant company shall submit scheme of mining, mine closure plan and other statutory requirements within the time stipulated for submission of the above, as per rules.
- xx. If any violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.
- xxi. As per rule 12 (v) of the Mineral (other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016, the applicant firm shall at his own expense, erect, maintain and keep in repair all boundary pillars.
- xxii. Quarrying activity should be carried out from 07.00 AM to 05.00 PM only.
- xxiii. A Green belt should be constructed to prevent sound and air pollution due to the proposed quarrying activity by planting at least 500 seedlings of Neem and Pungan all around the area.
- xxiv. The applicant company may use mild explosives during quarrying, and storing of explosives if required, by obtaining valid licence under Explosive Act and Rules.
- xxv. Child labour should not be engaged in the quarry works.

- xxvii. The applicant company should carry out DGPS survey and erection of RCC boundary pillars as per the norms stipulated in the EOI notification in Rc.No.2921/MM4/2019 dated.01.02.2018 and subsequent corrigendum dated 13.08.2019 through the empanelled agencies.
- xxviii. The applicant company should follow the mining method during the quarrying operation as mentioned in the mining plan.

Encl: Two copies of Approved Mining Plan


Commissioner of Geology and Mining

Copy Submitted to:

The Additional Chief Secretary
to Government,
Industries, Investment Promotion
and Commerce Department,
Secretariat, Chennai-600009.

Copy to:

1. The District Collector,
Krishnagiri District.



Tvl. A.A. Enterprises,
Managing Partner, S. Ramasubramaniam,
D. No. 93 & 94, Poombugar Nagar, Valar Nagar,
Uthangudi,
Madurai District,
Tamil Nadu - 625 107.

CONSENT LETTER FROM APPLICANT

The Mining Plan along with Progressive Quarry Closure Plan in respect of Nagojanahalli Colour Granite over an extent of 1.54.0Ha of Government Poramboke land in S.F.No. 609A (Part) (Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu State has been prepared by


Dr. M. IFTHIKHAR AHMED, M.Sc., M.B.A., F.G.S., Ph.D.,
Recognised Qualified Person
RQP/MAS/183/2004/A

I request the Commissioner, Department of Geology and Mining, Chennai to make further correspondence regarding the modification of the Mining Plan with the said Recognised Qualified Person at his following address.

Dr. M. IFTHIKHAR AHMED, M.Sc., M.B.A., F.G.S., Ph.D.,
No.17, Advaita Ashram Road,
Alagapuram,
Salem - 636 004.
+91 94422 78601 & 94433 56539.

I hereby undertake that all the modifications, if any made in the mining plan by the Recognised 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.

Signature of the applicant
Tvl. A.A. Enterprises


(S. Ramasubramaniam)
Managing Partner

Place: Madurai

Date: 01.03.2021



Tvl. A.A. Enterprises,
Managing Partner, S. Ramasubramaniam,
D. No. 93 & 94, Poombugar Nagar, Valar Nagar,
Uthangudi,
Madurai District,
Tamil Nadu - 625 107.


DECLARATION OF APPLICANT

The Mining Plan along with Progressive Quarry Closure Plan in respect of Nagojanahalli Colour Granite over an extent of 1.54.0Ha of Government Poramboke land in S.F.No. 609A (Part) (Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu State has been prepared in full consultation with me by

Dr. M. IFTHIKHAR AHMED, M.Sc., M.B.A., F.G.S., Ph.D.,
Recognised Qualified Person
RQP/MAS/183/2004/A

I have understood its contents and agree to implement the same in accordance with Laws applicable to Mines.

Signature of the applicant
Tvl. A.A. Enterprises


(S. Ramasubramaniam)
Managing Partner

Place: Madurai

Date: 01.03.2021



Dr. M. IFTHIKHAR AHMED, M.Sc., M.B.A., F.G.S., Ph.D.,
No.17, Advaita Ashram Road,
Alagapuram,
Salem - 636 004.
+91 94422 78601 & 94433 56539.

CERTIFICATE FROM THE RECOGNISED QUALIFIED PERSON

This is to certify that the Provisions of Granite Conservation and Development Rules, 1999 as amended in Tamil Nadu Minor Mineral Concession Rules, 1959 have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Nagojanahalli Colour Granite over an extent of 1.54.0Ha of Government Poramboke land in S.F.No. 609A (Part) (Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu State has been prepared for

Tvl. A.A. Enterprises,

Managing Partner, S. Ramasubramaniam,
D. No. 93 & 94, Poombugar Nagar, Valar Nagar,
Uthangudi,
Madurai District,
Tamil Nadu - 625 107.

Whenever specific permissions/exemptions/ relaxations and approvals are required, the applicant will approach the concerned authorities of Commissioner of Geology and Mining, Government of Tamil Nadu, Guindy, Chennai- 600 032 for such permissions/exemptions/ relaxations and approvals.

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

Signature of the RQP

Dr. M. IFTHIKHAR AHMED, M.Sc., M.B.A., F.G.S., Ph.D.,
RQP/MAS/183/2004/A

Place: Salem

Date: 05.03.2021



Dr. M. IFTHIKHAR AHMED, M.Sc., M.B.A., F.G.S., Ph.D.,
No.17, Advaita Ashram Road,
Alagapuram,
Salem - 636 004.
+91 94422 78601 & 94433 56539.

CERTIFICATE FROM THE RECOGNISED QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations made there under have been observed in the preparation of Mining Plan along with Progressive Quarry Closure Plan for Nagojanahalli Colour Granite over an extent of 1.54.0Ha of Government Poramboke land in S.F.No. 609A (Part) (Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu State has been prepared for

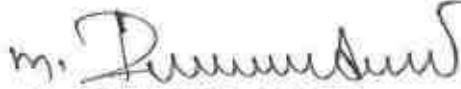
Tvl. A.A. Enterprises,

Managing Partner, S. Ramasubramaniam,
D. No. 93 & 94, Poombugar Nagar, Valar Nagar,
Uthangudi,
Madurai District,
Tamil Nadu - 625 107.

Whenever specific permissions/exemptions/ relaxations and approvals are required, the applicant will approach the concerned authorities of the Director of Mines Safety, No.#5, 17th Main, 100ft Road, 4th Block, Koramangala, Bengaluru, Karnataka - 560 034 for such permissions/ exemptions /relaxations and approvals.

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

Signature of the RQP


Dr. M. IFTHIKHAR AHMED, M.Sc., M.B.A., F.G.S., Ph.D.,
RQP/MAS/183/2004/A

Place: Salem

Date: 05.03.2021



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LIST OF ANNEXURES

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10.	Copy of ID & Address Proof of Authorized person of Firm	X
11.	Copy of RQP Certificate	XI



LIST OF PLATES

S. No.	DESCRIPTION	PLATE Nos.	SCALE
1.	LOCATION PLAN	I	Not to Scale
2.	KEY PLAN	IA	1:1,00,000
3.	ROUTE MAP	IB	Not to Scale
4.	ENVIRONMENTAL AND LAND USE PLAN FOR 1km RADIUS	IC	1:10,000
5.	500m RADIUS SATELLITE IMAGE	ID	1:5,000
6.	QUARRY LEASE PLAN	II	1:1,000
7.	SURFACE PLAN	III	1:1,000
8.	GEOLOGICAL PLAN AND SECTIONS	IV	1:1,000
9.	YEARWISE DEVELOPMENT AND PRODUCTION PLAN AND SECTIONS	V	1:1,000
10.	QUARRY LAYOUT AND AFFORESTATION PLAN	VI	1:1,000
11.	PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS	VII	1:1,000
12.	ENVIRONMENTAL PLAN	VIII	1:5,000
13.	CONCEPTUAL PLAN AND SECTIONS	IX	1:1,000



MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR NAGOJANAHALLI COLOUR GRANITE

(Under Rule 8-A of Tamil Nadu Minor Mineral Concession Rules, 1959 and Rule 12, 13 & 16 of Granite Conservation and Development Rules, 1999)

1.0 INTRODUCTION

The present Mining Plan is prepared for quarry Colour Granite belonging to **Tvl. A.A. Enterprises**, Managing Partner, S. Ramasubramaniam, having an office at D. No. 93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamil Nadu – 625 107.

The Colour Granite quarry lease applied area is a Government Poramboke land. The applicant has preferred the application under Rule 8-A of Tamil Nadu Minor Mineral Concession Rules, 1959 and the area was awarded to the successful bidder of **Tvl. A.A. Enterprises** through Tender Cum Auction for over an extent of **1.54.0Ha of Government Poramboke land in S.F.No. 609A (P) (Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District** (Refer Annexure Nos. I and II) under Rule 8-A of Tamil Nadu Minor Mineral Concession Rules, 1959. The application was processed by the Industries (MME.2) Department, Secretariat, Chennai and passed a precise area communication vide **Letter No.903/MME.2/2021-1, Dated: 26.02.2021** through the Commissioner, Department of Geology and Mining, Guindy, Chennai with the following conditions to provide (Refer Annexure No. I):-

- 1) A safety distance of 10 meters should be Provided to the Government lands surrounding the quarry lease applied area.
- 2) All conditions stipulated in the District Gazette Extra ordinary notification English No.20 and Tamil No.35 dated 09.10.2020 should be adhered by the Bidder applicant.
- 3) Environment Clearance should be obtained from the State Level Environmental Impact Assessment Authority before grant of quarry lease as per rule 42 of the Tamil Nadu Minor Mineral Concession Rules, 1959
- 4) The applicant firm should fence the lease granted area with Barbed wire before the execution of lease deed as follows:
 - The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters and the distance between two pillars shall not be more than 3 meters.



- The applicant firm shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan.
 - A soft copy of the digitalized map with DGPS readings should be submitted in the CD form to the Assistant Director (i/c), Krishnagiri.
- 5) The District Administration and Geology and Mining Department should ensure the conditions imposed in G.O. (Ms) No.79, Industries Department, dated 06.04.2015.
 - 6) As per rule 12(v) of Mineral (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016, the applicant firm shall at their own expenses erect, maintain and keep in repair all the boundary pillars.
 - 7) The applicant firm should use mild explosives during quarrying.
 - 8) Child labourers should not be engaged in quarry works.
 - 9) If any violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.
 - 10) The applicant firm should ensure that while starting the quarry work, all the quarry workers working under his control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme.
 - 11) The District Collector, Krishnagiri shall obtain a sworn-in-affidavit from the applicant firm containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No. 12789/MMB2/2002-7 Industries Department dated 9.1.2003 are complied with.
 - 12) The grant of quarry lease to the applicant firm in the applied area will be based on the Judgment of Hon'ble High Court of Madras in W.P.No.18317 of 2020 and W.P.No.16060/2020 and W.M.P.No.19999 of 2020.

(Please refer Annexure -I)

The Company ensures to comply all the condition stipulated by the Government before the execution of lease deed and during the course of quarrying operations.

This mining plan has been prepared by keeping and considering all the parameters stipulated by the Government of Tamil Nadu before and during the course of quarry operations.

The lease applied area is situated in Hilly terrain, the Colour granite is clearly visible right from the outcrops. The topsoil is very meager and found intermittent of the Colour granite exposure having an average thickness of 2m. The fresh colour granite is found after 4m thickness of weathered rock. Slender pegmatite veins, Joints, Cracks, segregation and



color variation are common in this formation.

Diamond wire saw cutting method is being proposed to liberate granite dimensional stones from the parent granite body. Cutting into required size, removal of defective portions are done manually using feather and wedges. The dressing of blocks in to the required rectangular shaped dimensional stones are done manually by chiseling with experienced chisel men for the maximum recovery of defect free salable material. Marketing of these stones blocks to customers is being ensured by strict quality control measures adopted by the Company's marketing personnel.

2.0 GENERAL

2.1 NAME OF THE APPLICANT WITH ADDRESS

Name : **Tvl. A.A. Enterprises,**
Managing Partner, S. Ramasubramaniam

Address : D.No. 93 & 94, Poombugar Nagar
Valar Nagar,
Uthangudi,

District : Madurai

State : Tamil Nadu

Pin code : 625 107

Phone : +91 96554 25859 and 96552 95859

E-mail ID : ramasubramaniam.1818@gmail.com.

Aadhaar No. : 9151 8455 6964 (Refer annexure No. X)

2.2 STATUS OF THE APPLICANT

Tvl. A.A. Enterprises is a Partnership firm. The partnership deed has executed on 02.08.2020 under the Indian Partnership act, 1932 with two partners. The details of partners is given below (Refer annexure No. VIII).

Table - 1

S.No.	Name	Designation
1.	Thiru. S. Ramasubramaniam, S/o. A. Subbiah Ambalam	Managing Partner
2.	Thiru. N. Raja Sundareswaran, S/o. M.V. Natesan	Partner

Thiru. S. Ramasubramaniam is the Managing Partner and he is an authorized person for signing all the documents on behalf of the company (Please refer annexure No. IX and X)

2.3 MINERAL WHICH THE APPLICANT INTENDS TO MINE

The Company intends to quarry **Colour Granite** dimensional stone.

**2.4 NAME, REGISTRATION NUMBER AND ADDRESS OF THE RECOGNISED QUALIFIED PERSON WHO PREPARED THE MINING PLAN**

Name : Dr. M. IFTHIKHAR AHMED, M.Sc., M.B.A., F.G.S., Ph.D.,
Recognised Qualified Person

Registration No. : RQP/MAS/183/2004/A

Valid Upto : 10.01.2024

Address : No.17, Advaita Ashram Road
Alagapuram, Salem District
Tamil Nadu - 636 004

Mobile : +91 94422 78601 and 94433 56539

Telephone : 0427- 2431989 (Office)

E-mail ID : infogeoexploration@gmail.com

(Refer Annexure No. XI)

2.5 NAME AND ADDRESS OF THE PROSPECTING AGENCY

State Geology and Mining Dept, Govt. of Tamil Nadu, has carried out the Regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed mapping of the commercial granite deposits of Tamil Nadu. Besides, the RQP and his team members made a detailed geological study of the area and demarcated clearly the Colour granite deposit with a mine surveyor. The granite formation is clearly visible right from the outcrops within the applied area. No detailed prospecting carried out by any agencies.

Address of the prospecting Agency:

- (i) STATE GEOLOGICAL DEPARTMENT
O/o The Commissioner of Geology and Mining
Thiru Ve Ka industrial Estate,
Guindy, Chennai - 32.

2.6 DETAILS OF THE AREA

- a. The area is marked in the Survey of India, Topo Sheet No. 57-L/07.
- b. The details of the land covered by the area is given below.

Table - 2

District and State	Taluk	Village	S.F.No.	Area in Ha.	Classification
Krishnagiri and Tamil Nadu	Pochampalli	Nagojanahalli	609A(P) (Bit-5)	1.54.0	Government Poramboke Land (Refer Annexure No. V - VI)

The area lies between the Latitudes of 12°22'24.13"N to 12°22'30.18"N and Longitudes of 78°17'02.95"E to 78°17'07.81"E on WGS datum-1984. (Plate No. I & II).



2.7 WHETHER THE AREA RECORDED TO BE IN FOREST DEPARTMENT:

The area does not falls under forest land of any category. It is a Government Poramboke land.

2.8 PERIOD FOR WHICH THE MINING AREA IS REQUIRED

Twenty years only.

2.9 INFRASTRUCTURE

The lease applied area is situated about 2km Southwest side of Nagojanahalli hamlet and 10km Northwest side of Pochampalli town. (Please refer plate No- 1 and IA).

The nearest town is Kaveripattinam which is located about 9km Northwest side of the area, where all basic facilities like Hospital, Communication centre, Schools, Police Station and Bus terminus are available. The District head quarters and District Administrative Office are available in Krishnagiri located at 18km on the Northwest side of the area.

The approach road will be constructed on the Northern side of the area, which is leads to Velampatti – Nagarasampatti village road located at 700m on the Eastern side of the area. There is no other patta lands are encountered for the haulage of Colour Granite (Please refer Plate No.I to ID).

Table - 3

Particulars	Location	Approximate aerial Distance and Direction from the lease applied area.
Nearest Post Office	Nagarasampatti	2km – SE
Nearest Dispencery	Nagojanahalli	2km – NE
Nearest School	Nagojanahalli	2km – NE
Nearest Police Station	Nagarasampatti	2km – SE
Nearest Hospital	Kaveripattinam	9km – NW
Nearest Town	Kaveripattinam	9km – NW
Nearest D.S.P.Office	Krishnagiri	18km – NW
Nearest State Highway	Tirupattur – Dharmapuri (SH-60)	10km – SE
Nearest National Highway	Kanniyakumari – Bengaluru(NH-7)	8km – West
Nearest Railway Line	Tirupattur – Salem	22km – SE
Nearest Railway Station	Kallavi	22km – SE
Nearest Airport	Salem	80km – SW
Nearest Seaport	Chennai	230km – NE
District Head Quarters	Krishnagiri	18km – NW

There is no National Monuments, Places of Worship, Places of Public Interest and Permanent structures situated around 300m radius from the lease applied area.

WATER:

Packaged drinking water is available from the nearby water vendors in Kaveripattinam located at 9km on the Northwest side of the area, the ground water is also potable without adverse any health effects. The water table is found 62m in summer and 57m in rainy season below from ground level this is observed from the nearby borewells.

RIVER HEAD:

There is no major water body like River, Reservoir and Canal located within 50m radius of the area.

3.0 GEOLOGY AND RESERVES**3.1 PHYSIOGRAPHY**

The area is situated in Hilly terrain. The gradient is 1 in 8.6 towards Eastern side and altitude of the area ranges from 465m to 480m above from MSL. The Colour granite is clearly visible right from the outcrops. The topsoil is very meager and found intermittent of the Colour granite exposure having an average thickness of 2m. The fresh colour granite is found after 4m thickness of weathered rock. The Colour Granite is fine to medium grained with quartz and feldspar as major constituents, Pyroxene, Mica, Garnet and other mafic minerals are accessories. This gneissic formation is having wavy pattern of alternate layer of light and dark colour minerals which adds the austhetic beauty for this rock.

Topographical view of the Nagojanahalli Colour Granite quarry lease applied area



The area receives average rainfall about 851mm per annum and the rainy season is mainly from Oct - Jan during North East monsoon. The summer is hot with maximum temperature of 42°C and winter records a minimum temperature of 23°C. The water level is found to occur at a depth of 62m in summer and 57m during rainy season below from the ground level.



3.2 REGIONAL GEOLOGY & GEOLOGICAL SUCCESSION

The Colour Granite is fine to medium grained in size. Orthoclase feldspar and quartz are major constituents and Pyroxene, Biotite, Garnets and other mafic minerals are accessories. The petrological settings of the area are simple and not a complicated phenomena. There are no major minerals observed in the vicinity of the proposed quarry. A brief description of the regional Geology is discussed below.

This Colour granite is commercially called as "**Paradiso**" and Petrologically called as "**Pink Migmatite**" which is widely used for slabs, Tiles and Mounments after cutting and polishing. The Krishnagiri district is underlain by hard Crystalline rocks of Archaean age comprising of various rock types such as Gneiss, Charnockite, etc.,. The Gneissic type of Crystalline formation is found in the North and Northeastern part of the District. Shoolagiri, Hosur, mattur and soolamalalai areas covered by Granitic Gneiss (Pink Migmatite).

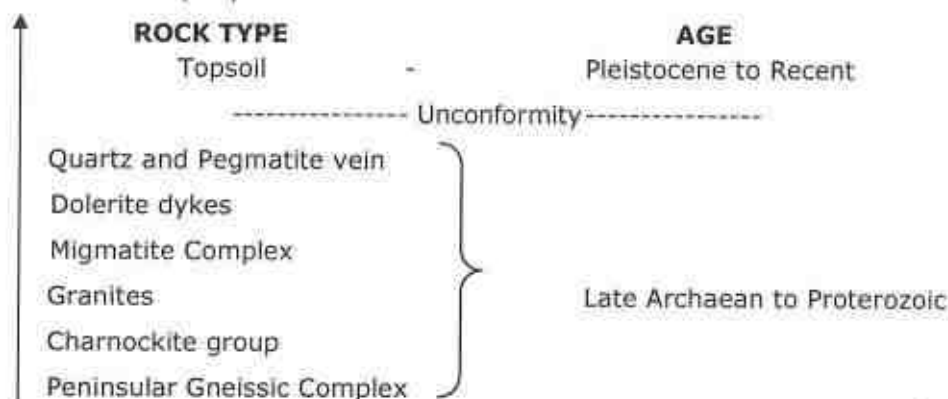
The Late Archean crust of Krishnagiri, Tamil Nadu, consists of tonalitic-trondhjemitic-granodioritic (TTG) gneisses with mafic and sedimentary enclaves, formed between 2.7 and 2.5 Ga and metamorphosed at amphibolite facies in the north to granulite facies in the south close to 2.5 Ga. Migmatization occurred at all grades, and numerous small granite bodies were emplaced near the amphibolite-to-granulite facies horizon. This nearly syn-accretion meta-morphism affected the entire crust and left a chemically differentiated section later exposed by uplift and erosion. Such rocks that were formed at great depths during the Archaean age are now exposed at the surface of the earth as a result of the combined actions of wind, air, water, weathering and denudation over the past several million years.

The Colour granite has the characteristic pink rythmatic banding by which it can be identified even from a distance. These are seen to the central part and SE part of the district, more specifically in Rayakottai, Kaveripattinam, Jagadevi and Velampatti. These dimensional blocks are quarried to make a polished stone, slabs, monuments etc.,

STRUCTURAL SETTINGS OF KRISHNAGIRI:

The general geological sequence of the rock types in the area is:-

Order of super position:-



**3.2.1. Geology of the lease applied area**

The Colour granite deposit is clearly visible right from the outcrops. The topsoil is very meager and found intermittent of the Colour granite exposure having an average thickness of 2m. The fresh colour granite is found after 4m thickness of weathered rock. The rock formation is popularly known as Granitic gneiss essentially made up of a supra crustal assemblages of Quartz and Orthoclase feldspar as major constituents, Pyroxene, Mica, Garnet and other mafic minerals are accessories. The lease applied area comprises Granitic gneiss and popularly termed as "**Paradiso**".

The Granite gneiss is leucocratic, euhedral, fine to medium grained, inequigranular and well developed gneissic banding of alternate layers of light and dark colour minerals are the specialty of this area which denotes the indicative of flow pattern of the rock mass in N20°E – S20°W (i.e., the cutting direction of the Colour granite) with dipping towards SE70°. The colour of the rock is pale pink - pale grey as observed on the surface level, the pink colour may decreased in deep seated condition. This pale pinkish grey colour which may find a good market for granite dimensional stones.

Some slender pegmatite veins are intruded in a crisscross fashion and well developed strike and dip joints and xenoliths observed at the surface level which is likely to decrease in deep seated condition. Taking in to consideration of the above geological factors, over burden, inter burden wastage during quarrying, other flaw and flower patches etc, an average recovery of 30% upto 24m (4m Topsoil and Weathered rock + 20m Colour granite) depth has been computed as economically safe and systematic quarrying. This mining plan is discussed based on 30% recovery factor. If there is any considerable increase or decrease in the recovery factor a modified mining plan will be prepared and will be submitted to relevant authorities for subsequent clearance and approval.

The Physical attitude of the Colour Granite deposit of this area is given below:-

Strike Direction	-	N20°E – S20°W
Dip amount and direction	-	SE70°.

3.3 DETAILS OF EXPLORATION**3.3.1. ALREADY CARRIED OUT**

As far as Colour Granite deposits are concerned, the only practical method is the systematic geological mapping and delineation of commercial Colour Granite bodies within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.

Such an exploration study has already been conducted regionally in this area by the Geological Survey of India (GSI) in the year 1966 and Department of Geology and Mining of Tamil Nadu in year 1992 to 1993.

Based on the valuable geological information and by the field experience. The estimation of geological resources, mineable reserve is arrived at considering to waste and market potential.

**3.3.2 PROPOSED STUDY TO BE CARRIED OUT**

Even though the depth persistence of the Colour Granite stone may be beyond 24m from the Petrogenetic character of the rock, only 24m (4m Topsoil and Weathered rock + 20m Colour Granite) depth persistent has been taken as economically viable (at present scenario considering for the entire lease Period) to calculate categories of proved, probable, and possible reserves.

The recovery of saleable Colour Granite stones has been taken as 30% and if the recovery percentage is good or bad, it may enhance or decrease respectively.

No definite programs for future exploration have been drawn. The quarrying activities for the next five years with deep cut as envisaged in the mining plan may render additional data as may be required for future planning. The total depth persistence and recovery percentage of commercial viable granite deposit will be discussed in the ensuing scheme period.

3.4 METHOD OF ESTIMATION OF RESERVES

The Geological plan demarcating the commercially marketable granite body has been prepared in 1:1000 Scale, totally three sections have been drawn, one section drawn along the horizontally as (X-Y) Length wise and other two cross sections are drawn Vertically as (A-B and C-D) width wise, which are suitably chosen to cover the maximum area, in the scale of 1:1000 (Refer Plate No. IV).

Estimation of reserves and resources as based upon the report furnished by the special committee appointed by the Department of Geology and Mining before tender cum action.

The cross sectional area for the proved depth persistence of 24m has been worked out for each section. The cross sectional area multiplied by its length x breadth x Depth gives the volume (Insitu) in the area wise. The sum total of the insitu reserves available within the block gives the geological resources of the quarry lease applied area.

From the total geological insitu resources, the quantity of saleable granite stones, quantity of rejects and waste generation are computed by applying recovery factor as 30% by its volume. High efficient technology machineries, quarry masters, Market demand significantly determine the recovery percentage of granite quarries. The estimated recovery is based on today market scenario and the same recovery has been considered as normative recovery. When the market demands, the applicant may take necessary steps to deploy a quarry masters with latest innovative machineries technology. So the recovery enhancement may raise to the peak production resulting in 80%. During the operation the method of quarry, deployment of men and machineries will not have any negative impact on the Environment. It is worthening the recovery anticipate the normative production has been scientifically converted into commercial production resulting in the decrease dump of waste inside the quarry. Due to the micro fractures, flaws, patches, xenoliths, required dimension, dressing, etc., the recovery in the granite could not be 100% of the R.O.M

As the sale of Colour Granite stone are in terms of cubic metres (Volume) only and not in terms of tonnage as in the case of major industrial mineral, the geological resources, Mineable reserves and quantum of waste generated etc are given only in terms of cubic meters (Volume).

The details of estimation of geological resources and mineable reserves with reference to the geological plan & cross sections and conceptual plan and sections as shown in Plate No. IV and IX respectively has been furnished.

**3.5 GEOLOGICAL RESOURCES AND GRADE:**

Maximum Length : 118m

Maximum Width : 130m

Maximum Depth : 24m (4m over burden + 20m Colour Granite)

Table - 4

Section	Bench	Length (m)	Width (m)	Depth (m)	ROM (m ³)	Recovery @ 30% (m ³)	Granite Waste @ 70% (m ³)	Weathered Rock (m ³)	Topsoil (m ³)
XY-AB	i	Area= 5840m ²		2	-	-	-	-	11680
		13	62	2	-	-	-	1612	-
	ii	40	107	2	-	-	-	8560	-
	iii	40	107	5	21400	6420	14980	-	-
	iv	40	107	5	21400	6420	14980	-	-
	v	40	107	5	21400	6420	14980	-	-
	vi	40	107	5	21400	6420	14980	-	-
Total=					85600	25680	59920	10172	11680
XY-CD	ii	78	130	4	-	-	-	40560	-
	iii	78	130	5	50700	15210	35490	-	-
	iv	78	130	5	50700	15210	35490	-	-
	v	78	130	5	50700	15210	35490	-	-
	vi	78	130	5	50700	15210	35490	-	-
Total=					202800	60840	141960	40560	-
Grand Total=					288400	86520	201880	50732	11680

Total Geological Resources in ROM	=	2,88,400m ³
Total Recoverable Resources @ 30%	=	86,520m ³
Granite waste @ 70%	=	2,01,880m ³
Weathered Rock	=	50,732m ³
Total Waste (Granite waste + Weathered)	=	2,52,612m ³
Topsoil	=	11,680m ³
Granite : waste ratio	=	1:2.9

The Geological resources computed based on the geological cross sections upto the economically workable depth of 24m below from the existing ground profile at the rate of 30% recovery yields 86,520m³ and 2,88,400m³ of ROM. The total geological resources are computed as 24m depth for economically viable at present market scenario.



3.6 MINEABLE RESERVES AND GRADE:

Maximum Length : 97m
 Maximum Width : 108m
 Maximum Depth : 24m

Table - 5

Section	Bench	Length (m)	Width (m)	Depth (m)	ROM (m ³)	Recovery @ 30% (m ³)	Granite Waste @70% (m ³)	Weathered Rock (m ³)	Topsoil (m ³)
XY-AB	i	Area= 3920m ²		2	-	-	-	-	7840
		13	52	2	-	-	-	1352	-
	ii	26	80	2	-	-	-	4160	-
	iii	24	74	5	8880	2664	6216	-	-
	iv	19	64	5	6080	1824	4256	-	-
	v	14	54	5	3780	1134	2646	-	-
	vi	9	44	5	1980	594	1386	-	-
Total=					20720	6216	14504	5512	7840
XY-CD	ii	68	108	4	-	-	-	29376	-
	iii	64	100	5	32000	9600	22400	-	-
	iv	59	90	5	26550	7965	18585	-	-
	v	54	80	5	21600	6480	15120	-	-
	vi	49	70	5	17150	5145	12005	-	-
Total=					97300	29190	68110	29376	-
Grand Total=					118020	35406	82614	34888	7840

Total Mineable Reserves ROM = 1,18,020m³
 Total Mineable Recoverable Reserves @ 30% = 35,406m³
 Granite waste @ 70% = 82,614m³
 Weathered Rock = 34,888m³
 Total Waste (Granite waste + Weathered) = 1,17,502m³
 Topsoil = 7,840m³
 Granite : waste ratio = 1:3.3

Mineable reserves have been computed as 35,406m³ at the rate of 30% recovery and 1,18,020m³ of ROM upto a depth of 24m below from the existing ground profile. The mineable reserves are calculated by deducting the mineral locked up area under safety distance and bench loss. Hence the remaining area is taken for calculation of mineable reserves upto 24m depth.

The Colour Granite body occurring in this area exhibits more or less uniform colour and texture. If any variation occurs during quarrying, such as cracks, joints, patches, colour variations etc, the defective area will be removed. The formation is uniform and no gradational change is noticed except some shears and cracks.



4.0 MINING

Open cast semi mechanized mining with 5.0 meter vertical bench with a bench width of 5.0 meter is being proposed.

Under the regulation 106 (2) (b) of the Metallurgical Mines Regulation 1961, in all open cast mining, the bench height should not exceed, 5.0 meter and bench width should not be less than bench height of the vertically cut face.

But as far as the mining of granite dimension stones are concerned, observance of the provisions of Regulation 106 (2) (b) as above is seldom possible due to various inherent Petrogenetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines safety, Bengaluru for which necessary provision is available with the Regulation 106 (2) (b).

The production of Colour Granite dimension stone in this quarry involves the following method which is typical for granite stone quarrying in contrast to other major mineral mining. Splitting of rock body of considerable volume from the parent rock formation by carefully avoiding visibly seen defects such as patches veins, etc., is done by adopting the method of "diamond wire cutting" along the horizontal as well as two vertical sides on the front face of the formation.

This liberation of huge volume of granite body from the parent sheet rock is called "primary cutting". This huge portion is further split in to several blocks of desirable dimensions. The blocks thus splitted are removed from the pit to the dressing yard, by using Crawler crane for further dressing. Removing the defective portions and dressing them in to the dimension blocks are done manually using feather and wedges and chiseling respectively by the experienced skilled labours or by innovative machineries.

The defect free, dimensional stone of different sizes as approved in the market are thus produced by the method as described above, and the process is continuously monitored by Company's experienced quality control personnel.

The waste material generated during quarrying activity includes rock fragments of different sizes, and also during dressing of the blocks. As and when there is accumulation of waste, the same is loaded into the tipper by loading machines and dumped in the respective places ear-marked for the purpose (Plate. No. VI). The quarried out topsoil will be preserved all along the safety zone and utilized for construction of bund and afforestation purpose.

**4.1 YEAR WISE DEVELOPMENT AND PRODUCTION FOR THE FIRST FIVE YEARS:**

Total Length = 97m

Maximum Width = 74m

Maximum Depth = 24m

Table - 6

Year	Section	Bench	Length (m)	Width (m)	Depth (m)	ROM (m ³)	Recovery @ 30% (m ³)	Granite Waste @ 70% (m ³)	Weathered Rock (m ³)	Topsoil (m ³)
I	XY-CD	ii	68	67	4	-	-	-	18224	-
		iii	20	59	5	5900	1770	4130	-	-
		Total				5900	1770	4130	18224	-
II	XY-AB	i	Area = 2020m ²		2	-	-	-	-	4040
			13	52	2	-	-	-	1352	-
		ii	26	71	2	-	-	-	3692	-
	XY-CD	iii	20	59	5	5900	1770	4130	-	-
	Total =				5900	1770	4130	5044	4040	
III	XY-CD	iii	6	59	5	1770	531	1239	-	-
		iv	16	49	5	3920	1176	2744	-	-
		Total =				5690	1707	3983	-	-
IV	XY-CD	iv	20	49	5	4900	1470	3430	-	-
		v	5	39	5	975	293	682	-	-
		Total =				5875	1763	4112	-	-
V	XY-CD	v	20	39	5	3900	1170	2730	-	-
		vi	15	29	5	2175	652	1523	-	-
		Total =				6075	1822	4253	-	-
Grand Total =						29440	8832	20608	23268	4040

Total Proposed Reserves ROM = 29,440m³Total Year wise Recoverable Reserves @ 30% = 8,832m³Granite waste @ 70% = 20,608m³Weathered Rock = 23,268m³Total Waste (Granite waste + Weathered) = 43,876m³Topsoil = 4,040m³

Granite : waste ratio = 1:5

Estimated Life of QuarryTotal Mineable Recoverable Reserves @ 30% = 35,406m³Average Production per Year @ 30% = 8,832m³/5 = 1,766m³Estimated Life of the Quarry = 35,406m³/1,766m³

= 20 Years.



The proposed year wise quantum of excavation and the details of estimation of production quantity and generation of waste are furnished with reference to the year wise development and production plan (Plate No.V). The quarrying block is shown in such a way to meet out the average annual production. The average annual production per year would be $1,766\text{m}^3$ and $8,832\text{m}^3$ for the first five year plan period considering at the rate of 30% recovery. More details of the year wise production parameters are explained with bench length, width and height in Plate No. V.

4.2 PROPOSED RATE OF PRODUCTION WHEN THE MINE IS FULLY DEVELOPED.

The proposed rate of production where the quarry is fully developed is $1,766\text{m}^3$ per annum @ 30% recovery. The production schedule in the subsequent five years are drawn mainly in consideration of reserves position, market demand and the cost of production.

4.3 MINEABLE RESERVES AND ANTICIPATED LIFE OF QUARRY

The depth persistence of the formation will be beyond the economically workable depth. The method of extraction from the sheet rock is highly expensive affair at greater depths.

An optimum depth of 24m depth has been proposed as economically viable depth. Eventually this depth is the optimum for safe and scientific quarrying.

The mineable reserves are calculated by excluding the quarry loss due to formation of benches with suitable height & width upto ultimate depth of quarry and the mineral reserve held up within the safety distance all along the area boundary.

The Mineable Reserves for this Colour Granite quarry is thus arrived as **$35,406\text{m}^3$ @ 30% recovery** and **$1,18,020\text{m}^3$ of ROM** for an assumed **depth of 24m** below from the existing ground profile. The details of estimation of five years development Production plan (Plate no.V) is furnished.

The average rate of production of Colour Granite from this quarry is **$1,766\text{m}^3$ per year** and Mineable Reserves **$35,406\text{m}^3$** considering 30% recovery for the entire life of the quarry.

Based on the above, and taking into consideration of the available Mineable reserves, **the life of quarry will be about 20 years** (considering all the safety factors) at 30% recovery, if the quarry is being worked continuously with an average annual production of $1,766\text{m}^3$. This calculation is based on the plan approved by Director of Mines Safety leaving Benches and Safety barriers. If the annual production increases considerably and consistently a modified mining plan will be prepared under Granite Conservation and Development Rules 1999 the same will be submitted to the relevant authorities for subsequent clearance and approval.

**4.3.1 CONCEPTUAL MINING PLAN**

Conceptual mining plan is prepared with an object of long term systematic development of benches; lay outs, selection of permanent ultimate pit limit, depth of quarrying and ultimate pit, selection of sites for construction of infrastructure, etc.,

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

The ultimate pit dimension of the quarry is given below.

ULTIMATE PIT DIMENSIONS**Table - 7**

Maximum Dimensions in meters		
Length	Width	Depth
98	108	24 (15m Above Ground Level + 9m Below Ground level)

However, during extraction of blocks each bench will be of 5m height with vertical slope for proper dimension cutting. The quantum of excavation is estimated to be $1,60,748\text{m}^3$ (Rom $1,18,020\text{m}^3$ + Topsoil $7,840\text{m}^3$ + Weathered $34,888\text{m}^3$) to a depth of 24m. The generation of total waste is estimated about $1,17,502\text{m}^3$ (Granite Waste $82,614\text{m}^3$ + Weathered rock $34,888\text{m}^3$) and marketable Colour Granite as $35,406\text{m}^3$.

The excavated waste ($43,876\text{m}^3$) will be proposed to dump on the Southern side with maximum dimension of (L)83m x (W)38m x (H)13.91m for the first five years. If permission is granted for removal of waste, the waste material will be supplied to needy crusher for building and road construction from concerned authorities after paying the seniorage fee and obtained necessary clearance and approval from concerned department for handling the waste. The applied area is a Government land, after end of the lease period, if the mineral reserves available and Market persist as to develop and conserve mineral reserves, there will be a chance for announcement of another quarry Tender by the State Government. After completion of quarry operation if permission not obtained for disposal of waste also if any direction given by the concerned authority for backfilling of waste, the quarried out waste will be backfilled nearly existing ground profile and preserved topsoil will be spread out over the backfilled area also tree sapling carried out in the backfilled area.

The quarry area will be fenced with barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle. (Please refer plate No. VI and IX).

4.4.0 METHOD OF MINING**4.4.1 OPEN CAST WORKING**

In accordance with the Regulation 106 (2) (b) of the Metalliferous Mines Regulations 1961, in all open cast working where the ore body forms hard rock, the working faces and sides should be adequately benched and sloped; a bench height not exceeding 5m and a bench width not less than the bench height has to be maintained. The slope angle of such benches and sides should not exceed 60° from horizontal. However, observance of these statutory provisions in granite dimensional stone quarrying is seldom possible due to the field difficulties and technical reasons as below:



1. Recovery of the granite mineral is to be as undamaged rectangular dimensional blocks. In the attempt to form the benches and sides with the above statutory parameters haphazard blasting may be involved. In which case the commercial granite body may get spoiled inevitably due to generation of blasting cracks.
2. In the exercise of forming the benches with 60° slope within the granite deposit, the portion confined within the 60° as well as its complimentary part in the extricated block will become as mineral waste while shaping them into rectangular blocks.
3. The granite industry need blocks as huge as a few cubic meter volumes with measurements up to 3m x 2m x 2m. Production of such huge blocks with a moving bench of 5.0m height is not possible. Production of such huge blocks in turn increases the recovery and reduces the mineral waste during dressing. Blocks of smaller size of certain varieties of granite are now marketable and have a good commercial value.
4. Formation of too many benches with more height and the width equal to the height may lead to mineral lock up.

Hence, in order to avoid granite waste and to facilitate economical mining operations, it is proposed to obtain relaxation to the provisions of Regulation 106 (2) (b) upto a bench parameter of 5m height & 5m width with vertical faces. Such a provision of relaxation of the Regulation has been provided within the regulation 106 (2) (b). Further, it is to be note worthy that open cast granite quarrying operations with the above proposed bench parameters may not be detrimental to mines safety, since the entire terrain is made up of hard rock, compact sheet and possess high stability on slope even at higher vertical angles.

4.4.2 EXTENT OF MECHANIZATION

The following machineries are utilized for the development and production work at this quarry.

Table - 8

I. DRILLING AND CUTTING MACHINE

S.No.	Type	Nos	Dia Hole mm	Size Capacity	Make	Motive power
1	Jack hammer	6	32	1.2m to 6m	Atlas Copco	Compressed air
2	compressor	2	-	400psi	Atlas Copco	Diesel drive
3	Diamond Wire saw	1	-	20m ³ /day	Optima	Diesel Generator
4	Diesel Generator	1	-	125kva	Kirloskar	Diesel

Table - 9

II. LOADING EQUIPMENT

S.No.	Type	Nos	Capacity	Make	Motive Power
1	Crawler Crane	1	855	Tata P&H	Diesel Drive
2	Excavator	1	300	Tata Hitachi	Diesel Drive

III. HAULAGE WITHIN THE QUARRY & TRANSPORT EQUIPMENT

Table - 10

S.No.	Type	Nos	Capacity	Make	Motive Power
1	Tipper	2	10 tons	Tata	Diesel Drive

IV. TRANSPORT FROM THE QUARRY HEAD TO DESTINATION

Transportation from quarry head to customer destination is done by truck or by trailers.

**V. MISCELLANEOUS:**

Apart from the above the following tools and tackles are required for quarry operation.

For operation

The operation of granite quarry requires the following loose tools material and have to be kept sufficiently in stock for non - interruption of the quarry work.

1. Drill rods - 0.3m, 0.5m, 0.75m, 1.65m, 2.25m, 3m, 3.6m, 5m upto 9m.
2. Steel Alloy chains of sufficient length of 10m, 12m, 16m, 18m etc., sizes.
3. 'D' shackles to link the chain lengths.
4. Rubber hose of required length.
5. Hose clamps to link the compressor delivery hoses.
6. Feather and wedges of 6" and 12" dia sizes utilize for splitting the block from the mother rock. This is an important tool in the operation of a quarry.
7. Crow bars.
8. Spades.
9. Sludge Hammer
10. Iron Pans
11. Pitcher Hammer
12. Chisels.
13. Consumables, such as diesel, Hydraulic oil, grease, abrasive wheels, welding machines etc.
14. Stock of essential spare parts of machinery.
15. Explosive as per the licensed quantity
16. Besides diamond wire saw equipment and new innovative machine specifically for granite with accessories are required to liberate the rock from to parent body to minimize damage and to obtain good recovery.

Splitting the sheet rock by Diamond wire sawing which increases substantial recovery potential. Hence it is proposed to adopt "Diamond wire saw cutting" for best recovery.

The above machineries are adequate to meet out the development and production schedule drawn out in this mining plan.

5.0 BLASTING

During future development of quarrying, removal of rock mass will be done by mild blasting with explosives in holes drilled by Jack hammer of 32mm dia especially. No deep hole blasting is proposed.

Portable magazine 'M' type has been proposed to install in the ear marked places, and the Company is advised to get necessary license for storing explosives in the above area after the grant of quarry lease.

The explosive that will be used are D-Cord and Gelatin sticks which are indicated below.

D Cord - 5mg
Gelatin Sticks,



6.0 MINE DRAINAGE

The water table in this area is about 62m as observed in nearby bore wells. Quarry operations are confined to well above the water table. If water is encountered at due to rain water and seepage, the same will be drained out by 10HP motor pumps and the drained out water will be utilized for afforestation.

7.0 STACKING OF MINERAL WASTE AND DISPOSAL OF WASTE

a) Topsoil:

There is generation of topsoil is about 4,040m³ during the mining plan period. The excavated topsoil will be spread out all along the boundary barrier and utilized for green belt development purpose.

b) Granite waste and Land chosen for disposal of waste:

The total waste to be produced during the first five years is around 43,876m³ (Granite Waste 20,608m³ + Weathered rock 23,268m³) the same will be proposed to dump on the Southern side with dimension of (L)83m x (W)38m x (H)13.91m.

c) Manner of disposal of waste:

As and when there is accumulation of waste, the same is loaded into the tipper by loading machines and dumped in the respective places ear-marked for the purpose.

The waste management plan with reference to the quantum of waste generated is shown in quarry layout and Afforestation plan (Plate No.VI).

There is no slurry anticipated in the quarry operation. Besides the granite waste does not produce any toxic effluent in the form of solid, liquid or gas.

8.0 USE OF THE GRANITE

The quarried Colour Granite blocks are either exported as rough blocks or processed as value added products such as slabs, tiles, fancy items and, precision surface plates for construction and engineering application.

The export markets for the rock under discussion are for European Countries, North America, Middle East & Far East besides catering domestic demand.

9.0 QUALITY CONTROL

The Colour Granite deposit occurring in this quarry shows uniform quality throughout and hence quarried and marketed as a single variety.

The exploited blocks are carefully examined for any natural defects such as joints, cracks, xenoliths, secondary Pegmatitic growth etc and such defects is removed manually using feather and wedges and the blocks are then shaped into perfect rectangular dimensional stone blocks by chiseling. Different price for each quality material have been fixed and the entire production quantity is marketed accordingly.

10. SURFACE TRANSPORT

The mode of transport of the granite blocks produced and marketed is by road to various customer destinations and granite processing units located at different parts of the country. The Colour Granite blocks approved for export market are shipped from Chennai Port to various countries and if required the blocks may be shifted from Thoothukudi Port which depend upon the exporter's destination from time to time.



11. SITE SERVICES

The simple methods adopted and the limited scale of activities involved in granite dimensional stone quarrying does not require High Tension Electric Power supply or huge workshop facilities. The quarrying work is restricted to one general shift during day time only. Major Machinery repair works are attended at Kaveripattinam town (9km-NW) and minor repairs are carried out by the Company's personnel at the quarry site itself. Packaged drinking water is available from the water vender in Kaveripattinam also from nearby Company's borewell can be transported to the work site in tippers if neccassary, it will be supply after treatment through the water purifier. Quarry office, store room, toilet, first-aid room and, magazine will be provided on semi - permanent structures within the lease applied area (Plate No VI).

12. EMPLOYMENT POTENTIAL

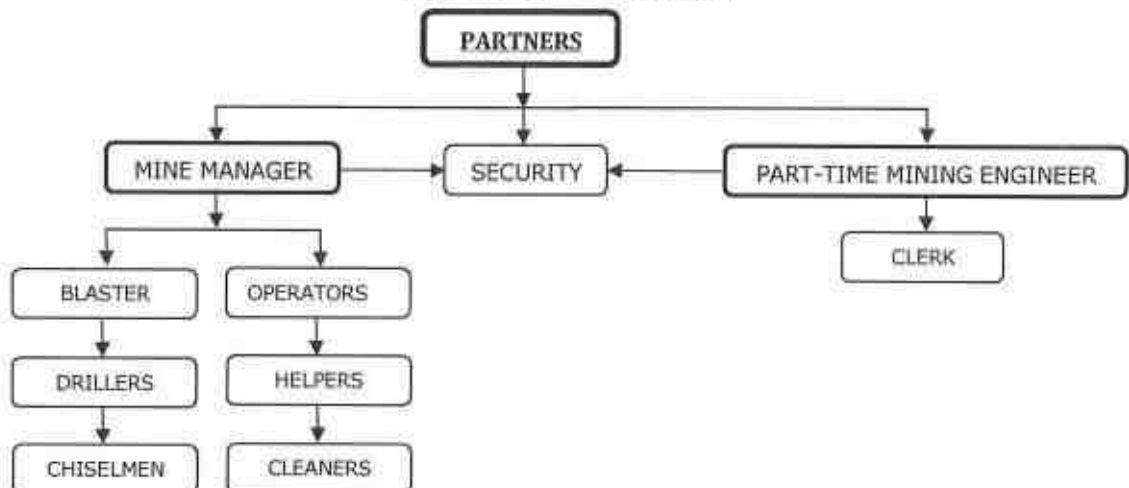
The following manpower for machineries as well as for operational activities are proposed to carry out the day-to-day quarrying activities aimed at the proposed production target and also to comply with the statutory provisions of the metalliferous mines regulations, 1961.

- 1. Mines manager (with valid statutory qualification) : 1
- 2. Mines foreman (with valid statutory qualification) : 1
- 3. Machinery operators (Certified) : 3

WORKERS:

- a. Skilled labour : 6
- b. Semi-skilled : 18
- c. Unskilled : 5
- Total : 34**

ORGANIZATION CHART



The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations.



13.0 ENVIRONMENTAL MANAGEMENT PLAN:

13.1 BASELINE INFORMATION

The following observations are made for environmental management plan.

I. EXISTING LAND USE PATTERNS:

The area is situated in Hilly terrain. The gradient is 1 in 8.6 towards Eastern side and altitude of the area ranges from 465m to 480m above from MSL. It is a Government Poramboke land. The area is a dry barren land and part of the area covered by rocky outcrops hence, previously did not utilize any specific purpose. The region experiences semi - humid climate and there is scanty growth of vegetation around the area (seasonal cultivation is mostly practiced).

Existing Land use pattern

Table - 11

Description	Area at present (ha)	Utilized (%)
Area under quarry	Nil	-
Waste dump	Nil	-
Infrastructure	Nil	-
Roads	Nil	-
Green Belt	Nil	-
Stocking blocks	1.54.0	100
Grand Total	1.54.0	100

II. WATER REGIME:

Ground water occurrence in this area is 62m depth below ground level. The quarry operation will be restricted to 24m below from the existing ground level, which is well above the water table; hence the quarry operation will not be affected by the ground water in any manner.

III. FLORA AND FAUNA:

The main floras are Paddy, Cassava(Maravalli), Maize, Neem, Palm, Cocos nucifera, Mango, Tamarind, Cactus, Calatropis, Shrub and thorny bushes are found around the area and Rat, rabbit, Squirrel, Cow, Goat and Crow faunas are found around the area. No plants of botanical interest or animals of zoological interest are recorded within 500m radius.

IV. CLIMATIC CONDITIONS:

The area receives an average rainfall of about 851mm/per annum and the rainy season is mainly from Oct - Jan during North East, monsoon. The summer is hot with maximum temperature of 42°C and winter encounters a minimum temperature of 23°C.



V. HUMAN SETTLEMENT:

There is no approved habitation / Village situated within 300m radius of the area.

There are few villages located within the 5km radius, approximate distance with direction & population are furnished below.

Table - 12

S.No.	Name of the Village	Direction	Approximate Distance	Approximate population
1.	Nagojanahalli	NE	2km	1850
2.	Maruderi	SW	4km	4200
3.	Velampatti	NE	2km	1400
4.	Nagarasampatti	SE	2km	1600

Basic human welfare amenities such as Health Center, Schools, Communication Facilities, and Commercial Centers etc are available at Kaveripattinam which is located at a distance of 9km Northwest side of the area.

VI. PUBLIC BUILDINGS, MONUMENTS AND PLACES OF WORSHIPS:

There is no Public Building, Historical or National Monument or Place of Worship situated within 300m radius of the area.

VII. WHEATHER THE AREA FALLS UNDER NOTIFIED AREA UNDER WATER ACT, 1974.:

The area falls under notified area under water Act, 1974.

13.2 ENVIRONMENT IMPACT ASSESSMENT STATEMENT

The mining plan is proposed for very small production of granite dimensional stone without involving deep hole drilling and heavy blasting. Such limited quarrying activity is not likely to cause any impact adversely on environment as far as pollution of air, water and noise is concerned.



Table - 13

S. No.	Salient Features at Presently bounded the quarry site	Prescribed safety distance	If any present within prescribed distance its actual distance and direction from the site																				
1.	Railways, Highways, Tank, Lake, Odai, Canal, Stream, River and Reservoir	50m	None of the above features located within 50m radius of the area.																				
2.	Village Road	10m	There is no village road located within 10m radius.																				
3.	Habitation / Village	300m	There is no approved habitation/village located within 300m radius.																				
4.	Adjacent Land Patta / Govt.	7.5m / 10m	<table border="1"> <thead> <tr> <th>Direction</th> <th>S.F.No.</th> <th>Classification</th> <th>Safety Distance</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>609A(P)</td> <td>Govt. land</td> <td>10m</td> </tr> <tr> <td>East</td> <td>609A(P)</td> <td>Govt. land</td> <td>10m</td> </tr> <tr> <td>South</td> <td>609A(P)</td> <td>Govt. land</td> <td>10m</td> </tr> <tr> <td>West</td> <td>609A(P)</td> <td>Govt. land</td> <td>10m</td> </tr> </tbody> </table> (Please refer Plate No. II).	Direction	S.F.No.	Classification	Safety Distance	North	609A(P)	Govt. land	10m	East	609A(P)	Govt. land	10m	South	609A(P)	Govt. land	10m	West	609A(P)	Govt. land	10m
Direction	S.F.No.	Classification	Safety Distance																				
North	609A(P)	Govt. land	10m																				
East	609A(P)	Govt. land	10m																				
South	609A(P)	Govt. land	10m																				
West	609A(P)	Govt. land	10m																				
5.	Housing area, EB line (HT & LT Line)	50m	There is no EB (LT/HT) line or Housing area located within 50m radius. (Please refer Plate No. II and III).																				
6.	Boundaries of the permitted area	7.5m	North - S.F.No. 609A(P). East - S.F.No. 609A(P). South - S.F.No. 609A(P). West - S.F.No. 609A(P). (Please refer Plate No. II).																				
7.	Reserve forest / protected area / ECO sensitive area/State or National border	10Km	The following Reserved forests are located within 10km radius. The Company has obtained NOC from the District Forest Office (Refer Annexure No. VII). 1. Thattakkal R.F. - 1.3km - NE 2. Thogarapalli R.F. - 9.2km - NE There is no protected area of Wildlife sanctuary/ ECO sensitive area/ State border/ HACA/ CRZ/ Critically polluted area situated within 10km radius of the applied area. (Please refer Plate No. IA).																				



Proposed Financial Estimate for Quarry and Environment Management (EMP)

Table - 14

A. Project Cost		
S.No.	Description	Approximate Cost (Rs.)
1.	Land Cost - It is a Government land, the tender cost is	1,41,00,000
2.	Labour Shed	2,00,000
3.	Sanitary Facility	80,000
4.	First aid Room and Accessories	50,000
5.	Excavator (1 No.)	56,00,000
6.	Crawler Crane (1 No.)	75,00,000
7.	Diesel Generator (1 No.)	7,50,000
8.	Tipper (2 Nos.)	30,00,000
9.	Wire Saw (1 No.)	4,00,000
10.	Compressor with loose tools (2 Nos.)	18,00,000
11.	Jack Hammer (6 Nos.)	6,00,000
12.	Drinking Water Facility	1,00,000
13.	Safety Kits	50,000
14.	Fencing Cost (530m length x Rs. 300/- per meter)	1,59,000
15.	Garland drain (340m length x Rs. 300/- per meter)	1,02,000
16.	Green belt development under safety zone during this scheme period (200m sapling x Rs. 100/- per sapling)	20,000
17.	Water sprinkling	1,00,000
Total Cost		3,46,11,000

B. Proposed financial estimate / budget for (EMP) Environmental Management Plan:

Budget Provision for the 5 year mining plan period

S. No.	Monitory and Analysis Description	Rate per location	No. of location	Total Charges/ six months	Total Charges/ year	Total Charges For Mining plan period
1	Ambient air quality monitoring	6500	4	26000	52000	2,60,000
2	Noise level monitoring	250	4	1000	2000	10,000
3	Ground vibration monitoring	1000	2	2000	4000	20,000
4	Water sampling and analysis	9000	1	9000	18000	90,000
Total EMP Cost/ year					76,000	3,80,000

The EMP cost for the 5 year mining plan period would be around **Rs. 3,80,000/-**



Total Cost of the Project including EMP Cost	
Description	Amount (Rs.)
A. Project Cost	3,46,11,000
B. EMP Cost	3,80,000
Total Project Cost (A+B)	3,49,91,000
The Company Indents to involve corporate Environment responsibilities (CER) activity like Water purifier, Fan, Air Conditioner, Cot, Bed and Sanitary facilities to the Nagojanahalli Dispensary and Water purifier, Computer and Sanitary facilities to the Govt. School at 2.0% from the total project cost. The cost would be around Rs. 7,00,000/ .	7,00,000
Total Cost	3,56,91,000

(Total project cost including EMP cost is about rupees three crore fifty six lakh and ninety one thousand only).

13.3.0 ENVIRONMENT MANAGEMENT PLAN

13.3.1 PROPOSAL FOR WASTE MANAGEMENT

The mine waste in the mine includes, rock fragments, rock chips, rubbles generated as mineral waste during production work.

The total waste to be produced during the mining plan (first five year) period will be around 43,876m³. The excavated waste will be proposed to dump on the Southern side with dimensions of (L) 83mx(W) 38m x (H) 13.91m. The generated top soil during the entire life of the quarry will be preserved all along the boundary barrier and utilized for construction of bund and afforestation purpose.

The waste management plan with reference to the quantum of waste generated is shown in quarry layout plan (Please refer Plate No.VI).

13.3.2 PROPOSAL FOR RECLAMATION OF LAND AFFECTED BY MINING ACTIVITIES DURING & AT THE END OF MINING

Due to nature of occurrence of sheet rocks, the depth persistence of the Colour Granite in this quarry is beyond the workable limits. In the proposed mining plan only 24m depth has been envisaged as workable depth for safe & economic quarrying for the entire lease period. If permission is granted for removal of waste, the waste material will be supplied to needy crusher for building and road construction from concerned authorities after paying the seniorage fee and obtained necessary clearance and approval from concerned department for handling the waste. The applied area is a Government land, after end of the lease period, if the mineral reserves available and Market persist as to develop and conserve mineral reserves, there will be a chance for announcement of another quarry Tender by the State Government. After completion of quarry operation if permission not obtained for disposal of waste also if any direction given by the concerned authority for backfilling of waste, the quarried out waste will be backfilled nearly existing ground profile and preserved topsoil will be spread out over the backfilled area also tree sapling carried out in the backfilled area. The quarry area will be fenced with barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle (Please refer plate No. IX).



13.3.3 PHASED PROGRAMME OF PLANTING TREES

It is proposed to plan 40 sapplings during every year an expecting survival at the rate of 80% which will work out 32-36 plants. The Company ensure to maintaining the plantations not less than 500 plants at the end of life of quarry. The safety zone along the Southern side lease boundary has been utilized for green belt development. Appropriate species of Neem, Pongamia pinnata, etc., trees will be planted in a phased manner as described below.

Table - 15

Year	No. of tress proposed to be planted	Area to be covered in m ²	Name of the species	Survival rate expected in %	No. of trees expected to be grown
I	40	354	Neem, Pongamia pinnata, etc.,	80	32
II	40	354		80	32
III	40	354		80	32
IV	40	354		80	32
V	40	354		80	32

Nearly 1,770m² area is proposed for afforestation by planting 40 Nos. of tree sapling during every year and expected growth is around 32 Nos. of trees at a survival rate of 80%. The afforestation plan is shown in Plate No.VI.

13.3.4 MEASURES FOR DUST SUPPRESSION:

As the granite stones are quarried as undamaged dimensional stones without involving deep hole drilling and heavy blasting, fragmentation and generation of lumps, fines or dust is negligible. This quantum of quarrying activity will not cause the dust detrimental to the health of the persons employed. Nevertheless, Mist water spray will be sprinkled for the suppression air borne dust from quarry approach roads waste dumps on regular intervals using water tankers. Drilling of blast holes of 32mm dia will be always under wet conditions to prevent flying of dusts. In the unloading points, water will be sprinkled through tippers to suppress dust. The drillers are provided with respirators in accordance with the Mines Safety Regulations.

13.3.5 MEASURES TO MINIMIZE GROUND VIBRATION DUE TO BLASTING AND CHECK NOISE POLLUTION

Shallow holes of 32 mm diameter will be drilled and conventional low explosives such as D-Cord and Gelatin sticks will be used for removal of over burden. Hence ground vibration and noise pollution will be minimal and restricted with the quarry workings. The blasting will be taken up at appointed timing and with sufficient caution to the public under the advice of qualified and competent personals. The noise produced by diamond wire saw cutting will be negligible.

13.3.6 STABILIZATION AND VEGETATION OF DUMPS

As the waste generation in the mine includes hard rock fragments of considerable size of irregular shape with varying angularity, the waste dump will be stable on its own even at higher slopes of the sides, besides excavated topsoil will be spread out and plantation will be carried out over and sides of the in-active waste dump for increasing the stability and to prevent erosion during rainy season.



14.0 PROGRESSIVE QUARRY CLOSURE PLAN:

14.1 Introduction

The Progressive Quarry Closure Plan for Colour Granite quarry lease applied area over an extent of 1.54.0Ha of Government Poramboke land in S.F.No. 609A (P) (Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu State has been prepared for **Tvl. A.A. Enterprises**, Managing Partner, S. Ramasubramaniam, having an office at D. No. 93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamil Nadu - 625 107.

14.2 Present Land use pattern:

Land Use Table - 16

Description	Present area (Ha)
Area under Quarry	Nil
Dump	Nil
Infrastructure	Nil
Roads	Nil
Green Belt	Nil
Stocking Blocks	1.54.0
Grand Total	1.54.0

14.3 Mineral Processing Operations:

The quarried out Rough granite blocks are marketed by road to various customer destinations and granite processing units located at different parts of the country. The Colour Granite blocks approved for export market are shipped from Chennai Port to various countries and if required the blocks may be shifted from Thoothukudi Port which depend upon the exporter's destination from time to time. No Mineral processing is involved within the applied area.

14.4 Reasons for closure:

The mineral is not going to be exhausted during the proposed Mining Plan period hence, immediate closure is not planned due to sufficient reserves are available for the entire life of quarry. Hence, the reason for closure will be discussed an ensuing scheme period or In Final Mine Closure Plan.

14.5 Statutory obligations:

All the conditions stipulated in the Precise area communication letter was fulfilled and maintained during the course of quarry operations.

**14.6 Progressive quarry closure plan preparation:**

Name and address of the Recognised Qualified Person who prepared the progressive closure plan and name and address of the executing agency who is involved in the Preparation of progressive quarry closure plan.

Dr. M. IFTHIKHAR AHMED, M.Sc., M.B.A., F.G.S., Ph.D.,

Recognised Qualified Person

RQP/MAS/183/2004/A

No.17, Advaita Ashram Road,

Alagapuram, Salem-636 004.

Cell: +91 94433 56539, 94422 78601

The Company will himself implement the closure plan; no outside agency will be involved.

14.7 Review of Implementation of Mining Plan including Progressive Closure Plan upto the Final Closure Plan:

The Mining Plan and Progressive quarry closure plan are being submitted for the first time. The Colour granite mineral reserves available for the entire life of quarry. The applied area is a Government land, after end of the lease period, if the mineral reserves available and Market persist as to develop and conserve mineral reserves, there will be a chance for announcement of another quarry lease Tender by the State Government. If any direction given by the concerned authority for progressive quarry closure, it will be discuss in ensuing Scheme of quarrying or in Final mine closure plan.

14.8 Closure Plan:**(i) Mined Out Land:**

At the end of mining plan period only 0.68.6 Ha area will be utilized for quarry operation out of 1.03.8 Ha of total mineable area. When the remaining reserves will be completely exhausted, the mine closure plan will be prepared and submitted to the competent authority to obtain approval and the same will be implemented. The quarry pit will be fenced with barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle. Land use at various stages is given in the table below. At present the area is virgin.

Land use pattern

Table - 17

Description	Present area (Ha)	Area to be required during the present Mining Plan period(ha)	Area at the end of life of quarry (Ha)
Area under quarry	Nil	0.68.6	1.03.8
Waste dump	Nil	0.31.6	Backfilled
Infrastructure	Nil	0.02.0	0.02.0
Roads	Nil	0.01.0	0.02.0
Green Belt	Nil	0.17.7	0.46.0
Stocking blocks	1.54.0	0.33.1	0.00.2
Grand Total	1.54.0	1.54.0	1.54.0



(ii) Water quality management:

Following control measures will be adopted for controlling water pollution:-

- Garland drain will be Constructed around the quarry to prevent surface run-off rain water entering in to the quarry pit.
- Construction of check dams / gully plugs at strategic places to arrest silt wash off from broken up area.
- Collection of surface run-off from broken up area in mine pits for settling and only properly settled excess water from mine pit will be discharged to nearby users. The storm water/ mine water will be used for dust suppression, greenbelt development, etc.
- Periodic analysis of mine pit water and ground water quality in nearby villages.
- Domestic sewage from site office & urinals/latrines provided in QL is discharged in septic tank followed by soak pits.

(iii) Air Quality Management:

The proposed mining method is not likely to produce much of dust and fugitive emissions to cause damage to ambient air quality of the area. All personnel protective equipment like Nose-mask, earplug/ muffs will be provided to the Workers. For air pollution management at the progressive quarry closure plan, greenbelt will be developed to prevent and control air pollution.

(iv) Top Soil and Waste Management:

There is generation of topsoil is about 4,040m³ during the Mining Plan period. It will be preserved all along the safety barrier and utilized for construction of bund and green belt development purpose.

Total waste produced during the Mining Plan period will be around 43,876m³. The total waste material will be proposed to dump on the Southern side with dimension of (L)83m x (W)38m x (H)13.91m. When the dump becomes inactive separately preserved topsoil will be spread out over and sides of the inactive waste dump and plantation will be carried out for increasing the stability also to prevent erosion during rainy season. At the end of life of quarry, quarried out waste will be utilized for backfilling.

(v) Disposal of mining machinery:

All the Machineries will be purchased by fresh condition and the same has been maintained in good condition during entire life of quarry. After completion of quarry operation all machineries will be utilized at another quarry area or sold out to the second hand. Hence, disposal or decommissioning of mining machinery does not arise.



(vi) Safety & Security:

Safety measures will be implemented to prevent access in the excavation area an unauthorized persons as per Mine Act 1952, MMR 1961.

- Safety measures will be implemented as per Mine Act 1952, MMR 1961, and Mines Rules 1955.
- Provisions of MMR 1961 shall be strictly followed and all roads shall be wider than the height of the bench or equal to the height of the bench and have a gradient of not more than 1 in 16.
- The bench height will be 5.0m.
- Width of working bench will be kept about 5.0m for ease of operations and provide sufficient room for the movement of equipments.
- Protective equipment like dust masks, ear-plugs/ muffs and other equipments shall be provided for use by the working personnel.
- Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries. Sufficient caution and sign boards will be kept in and around the quarry to induct public for awareness.
- Blasting will be carried out in a specific time after giving sufficient caution to the public such as danger signs shall be displayed near the excavations and siren alarm signal will be provide before small amount of blasting time for precautionary action of accident (blasting is carried out only for secondary fragments and not to liberate the Granite body from the parent rock mass).
- Security guards will be posted to prevent inadvertent entry of public.
- In the event of temporary closer, approaches will be fenced off and notice displayed.

(vii) Disaster Management and Risk Assessment:

This should deal with action plan for high risk accidents like landslides, subsidence, flood, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of Company to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the area may involve any high risk accident due to side falls/collapse.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, TNMMCR 1959 and other laws applicable to mine will be strictly complied with.
- During heavy rainfall the mining activities will be suspended.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.



(viii) Care and Maintenance during Temporary Discontinuance:

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:

Mine roads and approach roads,

Fencing on approach roads,

Checking and maintenance of machines and equipment,

Drinking water arrangements,

Mine office, first aid stations etc.

- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

(ix) Economic Repercussion of Closure of Quarry and manpower Retrenchments:

The quarry lease is granted for a period of twenty years only. As per the production Programme envisaged, there will be no effect on the man power as the majority of persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.

**(x) Time Scheduling For Abandonment:**

The lease applied area has enormous potential for continuance of operations even after expiry of the lease period. The details of time schedule of all abandonment will be given at the time of final closure plan.

(xi) Abandonment Cost:

As at present mining is not going to be closed so abandonment cost could not be assessed. However based on the progressive quarry closure activities during the plan period, cost is assessed as given below:

Table - 18

ACTIVITY	YEAR					RATE	AMOUNT (Rs.)
	I	II	III	IV	V		
Plantation (In Nos.)	40	40	40	40	40		
Plantation (Safety zone) Cost	4,000	4,000	4,000	4,000	4,000	@100 Rs Per sapling	20,000
Barbed wire fencing (In Mtrs) 530 Mtrs	1,59,000	-	-	-	-	@300 Rs Per Meter	1,59,000
Garland drain (In Mtrs) 340 Mtrs	1,02,000	-	-	-	-	@300 Rs Per Meter	1,02,000
TOTAL							2,81,000

15.0 MINERAL CONSERVATION AND DEVELOPMENT:

The mining plan proposed has fully covered all the aspects of Granite Conservation and development rules 1999, with a future plan to extend the proposed working of the quarry to the maximum possible workable depth of the deposit. Extreme care is taken to ensure proper supervision of quality control of the Granite dimensional stone aimed at the recovery of the maximum saleable quality and quantity of granite dimensional stones suitable for full utilization of the consumers.

Care is been taken for each process just to safeguard the material quarried in an economical and efficient manner by adopting systematic and scientific quarrying with the consultation and supervision of well experienced quarry persons.

**16.0 STATUTORY PROVISIONS:**

The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied with, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety, Chennai. Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the department.

Certified that this Mining Plan has been Prepared in Accordance with the Mines Act, Rules and Regulations and orders made there under and also in Conformity with the Provisions of Rule 8-A of Tamil Nadu Minor Mineral Concession Rules, 1959 and 12, 13 and 16 of Granite Conservation and Development Rules 1999 and Rule 15(I)(a) and (b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Prepared by

Dr. M. IFTHIKHAR AHMED, M.Sc., M.B.A., F.G.S., Ph.D.,
Recognised Qualified Person
RQP/MAS/183/2004/A

Place: Salem

Date: 05.03.2021

DONATE RED

SPREAD GREEN

SAVE BLUE

COMMISSIONER
GEOLOGY AND MINING,
GUINDY, CHENNAI-600 032.

This Mining Plan is Approved
Subject to the Conditions/ Stipulations
Indicated in the Mining Plan Approval
Letter No./6745(rmma)/2021 Dated 18.04.2023



Industries (MME.2) Department,
Secretariat, Chennai - 600 009

Letter No.903/MME.2/2021 - 1, Dated 26.02.2021

From

Thiru N. Muruganandam, I.A.S.,
Principal Secretary to Government.

To

Tvl.A.A.Enterprises,
Managing Partner,
S.Ramasubramaniam,
D.No.93 & 94,
Poombugar Nagar, Valar Nagar,
Uthangarai, Madurai- 625107.



Sir,

Sub: Mines and Minerals - Minor Mineral - Colour Granite -
Nagojanahalli Village - Pochampalli Taluk - Krishnagiri
District - S.F.No.609A(P) (Bit-5) - Over an extent
of 1.54.0 hectares of Government Poramboke land -
Highest Bid amount offered by Tvl.A.A.Enterprises,
Madurai - Precise Area Communicated - Balance Lease
Amount - Approved mining Plan and Environmental
Clearance - Called for.

- Ref: 1. Krishnagiri District Gazette Extraordinary Issue in
English No.20 and Tamil No. 35 dated:09.10.2020.
2. Application of Highest Bidder of Tvl.A.A.Enterprises,
Madurai on 07.11.2020.
3. Proposal of the District Collector, Krishnagiri, in file
No.1054/2020 (Mines), dated 03.12.2020.
4. From the Commissioner of Geology and Mining, File
Rc. No.6945/ MM4/2020, dated: 26.01.2021 and
09.02.2021.

I am directed to state that in the references third and fourth cited,
the District Collector, Krishnagiri and the Commissioner of Geology and
Mining have recommended to declare you as successful bidder and to
grant quarry lease for quarrying of Colour Granite over an extent of
1.54.0 hectares of Government poramboke land in S.F.No.609A (P)
(Bit-5) in Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District for
a period of 20 years under rule 8-A of the Tamil Nadu Minor Mineral
Concession Rules, 1959.

//p.t.o//

- 5) The District Administration and Geology and Mining Department should ensure the conditions imposed in G.O.(Ms).No.79, Industries Department, dated 06.04.2015.
- 6) As per Rule 12(V) of Minerals (other than Atomic & Hydrocarbon Energy Minerals) Concession Rules, 2016, the applicant firm shall at his own expenses erect, maintain and keep in repair all the boundary pillars.
- 7) The applicant firm should use mild explosives during quarrying.
- 8) Child Labourers should not be engaged in quarry works.
- 9) If any violation is found during quarrying operation, the penal provisions of the Tamil Nadu Minor Mineral Concession Rules, 1959 and other rules and act in force will attract.
- 10) The applicant firm should ensure that while starting the quarry work, all the quarry workers working under their control are registered in the Labour Welfare Board and also enrolled in the ongoing insurance scheme.
- 11) The District Collector, Krishnagiri shall obtain a sworn-in-affidavit from the applicant firm containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.12789/MMB2/2002-7, Industries Department, Dated: 9.1.2003 are complied with.
- 12) The grant of quarry lease to the applicant firm in the applied area will be based on the Judgement of Hon'ble High Court of Madras in W.P.No.18317 of 2020 and W.P.No.16060/2020 and W.M.P.No.19999 of 2020.

Yours faithfully,

[Signature]
26.2.2021

for Principal Secretary to Government

[Signature]
26/2/2021

Copy to:

The Commissioner of Geology and Mining,
Guindy, Chennai -600 032.

✓The District Collector,
Krishnagiri. (for necessary followup action)



பதிவெண்

தமிழ்நாடு அரசு
2020



கிருஷ்ணகிரி மாவட்ட அரசிதழ்

சிறப்பு வெளியீடு

ஆணையின்படி வெளியிடப்பட்டது

கிருஷ்ணகிரி, அக்டோபர் 9, 2020 [எண் 35
[சார்வரி, புரட்டாசி 23 - திருவள்ளூர் ஆண்டு 2051]

மாவட்ட ஆட்சியர் அறிவிக்கை

[ந.க.எண்.90/2017/(கனிம), நாள்: 09.10.2020]

[கிருஷ்ணகிரி மாவட்டத்தில் அரசு புறம்போக்கு நிலங்களில் உள்ள குவாரிகளிலிருந்து கருப்பு / பல வண்ண கிராணைக் கற்கள் வெட்டி எடுத்துக் கொள்ள 1959ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதி 8(A)-ன்படி குவாரி குத்தகை உரிமை வழங்குதல் குறித்த விண்ணப்பங்கள் வரவேற்பதற்கான அறிவிக்கை].

டெண்டர் விண்ணப்பங்கள் பெற கடைசி நாள் / நேரம் : 31/10/2020, பிற்பகல் - 4.00 மணி வரை

பொது ஏலம் நடத்துதல் மற்றும் டெண்டர் விண்ணப்பங்களை பிரித்து பரிசீலிக்கும் நாள் : 02/11/2020, முற்பகல் - 11.00 மணி முதல்

1. கிருஷ்ணகிரி மாவட்டத்தில் அரசு புறம்போக்கு நிலத்தில் அமைந்துள்ள கிராணைக் குவாரிகளிலிருந்து கிராணைக் கற்கள் வெட்டி எடுக்க தமிழ்நாடு சிறு கனிம சலுகை விதிகள் 1959ல் அரசாணை எண்:103 தொழிற்(எம்.எம்.சி.1) துறை நாள்:13.07.1996 மற்றும் தமிழ்நாடு அரசிதழ் சிறப்பு வெளியீடு எண்:337 நாள்:13.07.1996-ன் பாகம் III(1)-Aல் சேர்க்கப்பட்டு பின்பு திருத்தங்கள் செய்யப்பட்ட விதி 8(அ)-ன்படி டெண்டருடன் இணைந்த பொது ஏல முறையில் குவாரி குத்தகை வழங்குதல் தொடர்பாக மூடிமுத்திரையிடப்பட்ட டெண்டர் விண்ணப்பங்கள் தமிழக அரசு சார்பாக கிருஷ்ணகிரி மாவட்ட ஆட்சியரால் கிருஷ்ணகிரி மாவட்ட ஆட்சியர் அலுவலகத்தில் தளரதள அறை எண்:30ல் உள்ள முயிபியல் மற்றும் கரங்கத் துறை உதவி இயக்குநர் அலுவலக கட்டிடத்தில் உள்ள நேரப்படி 31.10.2020 அன்று மாலை 4.00 மணி வரை தனி நபர்கள் (Individuals) / நிறுவனங்கள் (Companies) / பங்குதாரர் நிறுவனம் (Partnership Firm) ஆகியோரிடமிருந்து வரவேற்கப்படுகிறது.
2. இந்த அறிவிக்கையின்படி விண்ணப்பிக்கப்படும் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பம் 1959 ஆம் ஆண்டு தமிழ்நாடு சிறுகனிமச் சலுகை விதிகளின் பின்இணைப்பு VI-அ-ல் குறிப்பிடப்பட்டுள்ள படிவத்தில் இருக்க வேண்டும். மாநில விண்ணப்பப்படிவம் இந்த மாவட்ட அரசிதழ் சிறப்பு வெளியீட்டின் இணைப்பில் பிரசுரிக்கப்பட்டுள்ளது. இணைப்பில் பிரசுரிக்கப்பட்டுள்ள படிவம் VI-அ-ன்படி பூர்த்தி செய்து அனுப்பப்படாத விண்ணப்பங்கள் மற்றும் குறிப்பிடப்பட்டுள்ள சட்டப்பூர்வமான இணைப்புகளுடன் சமர்ப்பிக்கப்படாத ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் ஏற்றுக் கொள்ளப்படமாட்டாது.
3. ஒப்பந்தப்புள்ளி விண்ணப்பம் அனுப்புவதற்கு முன்/ஏலத்தில் கலந்து கொள்வதற்கு முன் இம்மாவட்ட அரசிதழ் அறிவிக்கையுடன் இணைக்கப்பட்டுள்ள பட்டியலில் கண்ட சம்பந்தப்பட்ட குவாரியை விண்ணப்பதாரர்கள் நேரில் கணித்துத் தரம் மற்றும் இருப்பு ஆகியவற்றை தனது சொந்த செலவிலேயே பார்வையிட்டு கொள்ள வேண்டும். டெண்டர்/பொது ஏலம் முடிவில் கிராணைக் குவாரி குத்தகை உரிமை ஒதுக்கீடு செய்யப்படுவது விண்ணப்பதாரர்கள் தேவையான அணுகு சாலை வசதிகளுடன் கூடிய கட்டமைப்பு வசதிகள் மற்றும் பிற வசதிகளை தங்களது சொந்த செலவில் ஏற்படுத்திக் கொள்ள வேண்டும்.



(7) அனைத்து விண்ணப்பங்களும் அரசிதழ் / விளம்பரத்தில் குறிப்பிடப்பட்டுள்ள முகவரிக்கு குறிப்பிடப்பட்ட நாள மற்றும் நேரத்திற்குள் வந்தலடைய வேண்டும்.

5. (அ) டெண்டர் விண்ணப்பங்கள் நேரடியாக அனுப்பப்படின் 1959ம் ஆண்டு தமிழ்நாடு சிறுகனிம சலுகை விதி, 1959-IX-ல் கண்டுள்ள படிவத்தில் ஒப்புரை சீட்டு வழங்கப்படும். டெண்டர் விண்ணப்பம் பதிவகுச்சல் மூலம் அனுப்பப்படின் பெறப்பட்ட நாளிலிருந்து மூன்று தினங்களுக்குள் மேற்படி படிவத்தில் ஒப்புரை சீட்டு பதிவகுச்சலில் (ஒப்புரை அட்டையுடன்) அனுப்பிவைக்கப்படும். அஞ்சல் போக்குவரத்தில் ஏற்படும் தாமதம் / தவறும் விண்ணப்பங்களுக்கு / தகவல்களுக்கு மாவட்ட ஆட்சியர் எவ்வகையிலும் பொறுப்பு அல்ல.

(ஆ) செய்தித்தாள் மூலமாகவோ, மாவட்ட அரசிதழ் மூலமாகவோ, அறிவிப்பு செய்யப்படாத குவாரிகளுக்கு ஏதாவது ஒப்பந்தப்புள்ளி விண்ணப்பங்கள் கிடைக்கப் பெற்றால் அவையாவும் முதிர்ச்சி அடையாத விண்ணப்பமாக கருதப்பட்டு மாவட்ட ஆட்சியரால் உடனடியாக நிராகரிக்கப்படும். குறித்த காலக்கெடுவிற்குள் வந்து சேராத விண்ணப்பங்கள் காலவரையறை கடந்த விண்ணப்பமாக கருதப்பட்டு அவையாவும் மாவட்ட ஆட்சியரால் நிராகரிக்கப்படும். மேற்கூறப்பட்ட நிபந்தனைகளை பூர்த்தி செய்வாத ஏல / டெண்டர் விண்ணப்பங்கள் நிராகரிக்கப்படுவதுடன் ஏலம் / டெண்டரில் கலந்து கொள்ளவும் அனுமதிக்கப்படமாட்டார்கள். அவ்வாறு நிராகரிக்கப்படும் விண்ணப்பங்களுடன் வங்கி வரையோலைகள் இருப்பின் பெறப்பட்ட ஏல நாட்களுக்குள் விண்ணப்பம் மட்டும் நிபந்தனைகளைக் கட்டி வங்கி வரையோலை பதிவகுச்சல் மூலம் விண்ணப்பதாரருக்கு திரும்ப அனுப்பி வைக்கப்படும்.

பொது ஏலம் மற்றும் டெண்டர் நடைமுறைகள்

6. (அ) 1. குவாரி குத்தகை பெறுவது தொடர்பாக அறிவிப்பு / விளம்பரம் செய்யப்பட்டு டெண்டர் விண்ணப்பங்கள் கோரப்பட்ட இளங்களுக்கு வரப்பெற்ற டெண்டர் விண்ணப்பங்கள் திறக்கப்படும் முன் நடத்தப்படும் பொது ஏலத்தில் டெண்டர் விண்ணப்பதாரர்கள் மற்றும் பிணை வைப்புத்தொகை (Earnest money deposit) ரூ.25,00,000/- (ரூபாய் இருபத்தைந்து இலட்சம் மட்டும்) செட்பு வரையோலை மூலம் செலுத்தும் பொது ஏல விண்ணப்பதாரர்கள் விண்ணப்ப கட்டணம் மற்றும் குறிப்பிடப்பட்டுள்ள இணைப்புகளுடன் கூடிய விண்ணப்பம் சமர்ப்பித்துக்குட்பட்டு பொது ஏலத்தில் கலந்து கொள்ள அனுமதிக்கப்படுவர். அவ்வாறு ஏற்கனவே பிணைவைப்புத் தொகை செலுத்தி டெண்டர் மறு சமர்ப்பித்த விண்ணப்பதாரர்கள் பொது ஏலத்தில் கலந்து கொள்ள தனியே தொகை செலுத்த தேவையில்லை.

2. ஏற்கனவே டெண்டர் விண்ணப்பம் கொடுத்தவர்கள் ஏலத்தில் கலந்துகொள்ள முடியாவிடில் அவருக்குப்பதிலாக அவரால் நியமிக்கப்பட்ட நியமனதாரர் ஒரு நாள் மட்டுமே டெண்டரிப்பளிக்கும் முன்பு விண்ணப்பதாரர் மற்றும் நியமிக்கப்பட்ட நாள் கையெழுத்துக்கள் சான்றுபெறப்பட்ட உறுதிமொழி ஆவணம் (அட்டிவிட்) தாக்கல் செய்வதின் பேரில் ஏலத்தில் கலந்து கொள்ள அனுமதிக்கப்படுவார்கள்.

(ஆ) (i) மாவட்ட ஆட்சியர் அல்லது அவரால் அங்கீகாரம் வழங்கப்பட்டுள்ள அலுவலரால் மாவட்ட ஆட்சியர் அலுவலகத்தில் விண்ணப்பதாரர்கள் மற்றும் ஏலம் கோர வந்திருக்கும் நாட்களின் முன்னிலையில் ஒப்பந்தப்புள்ளி (டெண்டர்) விண்ணப்பங்கள் திறக்கப்படுவதற்கு முன்னர் குவாரிப் பட்டியலில் கண்டுள்ள வரிசைப்படி பொது ஏலம் நடத்தப்படும். பொது ஏலம் முடிவடைந்த பின்னர் மாவட்ட ஆட்சியர் அல்லது அவரால் அங்கீகாரம் வழங்கப்பட்டுள்ள அலுவலரால் வரப்பெற்ற அனைத்து டெண்டர் விண்ணப்பங்களும் பிரித்து ஆய்வு செய்யப்படும்.

(ii) மூடி முத்திரையிட்டு வரப்பெற்ற டெண்டர் விண்ணப்பங்கள் ஆலோசனைகள் டெண்டர் விண்ணப்பதாரர்கள் அவரால் நியமனம் செய்யப்பட்ட நியமனதாரர் முன்னிலையில் பிரிக்கப்படும். டெண்டர் திறப்பு நாள மற்றும் குறிப்பிட்ட நேரத்தில் டெண்டர் விண்ணப்பதாரர் அல்லது நியமனதாரர் இல்லாதிருக்கும் பட்சத்தில் அது டெண்டர் / பொது ஏல நடவடிக்கைகளை எவ்வகையிலும் கட்டுப்படுத்தாது.

(iii) டெண்டர் / பொது ஏலத்தில் மூன்றுக்கும் குறைவான டெண்டர் / பொது ஏலம் விண்ணப்பம் பெறப்பட்டு டெண்டர் / பொது ஏலம் நடவடிக்கைகள் ரத்து செய்யப்பட்டு ஒரு மாத காலத்திற்குள் மறு டெண்டர் நடத்த பரிந்துரை செய்யப்படும்.

(iv) குறிப்பிட்ட இளத்திற்கு பெறப்பட்ட டெண்டர் விண்ணப்பங்களின் எண்ணிக்கை விண்ணப்பதாரரின் பெயர் மற்றும் விண்ணப்பதாரரால் குறிப்பிடப்பட்டுள்ள டெண்டர் தொகை விவரம் அங்கீகாரம் வழங்கப்பட்ட அலுவலரால் அறிவிக்கை செய்யப்படும். டெண்டர் நடவடிக்கைகள் முடிவு செய்யப்படும் முன் உயர்நீதிபட்ச ஏல தொகை மற்றும் டெண்டர் விண்ணப்பத்தில் குறிப்பிடப்பட்டுள்ள டெண்டர் தொகை, உயர்ந்த பட்ச தொகை குறிப்பிட்ட டெண்டர் / ஏலதாரர் விவரங்களும் அங்கீகாரம் வழங்கப்பட்ட அலுவலரால் அறிவிக்கை செய்யப்படும்.



(vi) அரசு கடிதத்தின்படி விண்ணப்பதாரர்கள் 1999-ம் ஆண்டு கிராண்டை பாதுகாப்பு மற்றும் மேற்படுத்தல்கள் விதி 12-ன்படி அங்கீகரிக்கப்பட்ட காலத்தி ட்டம் மற்றும் 1959ம் ஆண்டு துழிநாடு சிறுகனிம சலுகை விதி 42-ன்படி தகுதிவாய்ந்த அமைப்பிடமிருந்து பெறப்பட்ட கற்றுக்குழல் அனுமதி ஆணை மற்றும் மாவட்ட வண அலுவலரின் தடையின்மை சான்று ஆகியவை பெற்று சமர்ப்பிக்கப்பட்ட பின்னர் குவாரி குத்தகை உரிம ஆணை அரசால் வழங்கப்படும்.

(அ) விண்ணப்பதாரர்களால் குறிப்பிடப்பட்டுள்ள அதிகபட்ச தொகையானது திருப்திகரமானது இல்லை என்றோ அதிக தொகை குறிப்பிட்ட விண்ணப்பதாரரின் டெண்டர் உறுதிசெய்வது கனிம வளர்ச்சிக்கு உகந்ததாக இருக்காது என அரசால் கருதப்படின் குவாரி குத்தகை உரிம விண்ணப்பதாரருக்கு வழங்க மறுத்து உரிய காரணங்களுடன் அரசால் ஆணை அனுப்பிவைக்கப்படும்.

(ஆ) அரசிடமிருந்து உறுதி ஆணை பெறப்பட்ட நாளிலிருந்து ஒருமாத காலத்திற்குள் அல்லது மாவட்ட ஆட்சியரால் மேலும் அனுமதிக்கப்படும் 30 (முப்பது) நாட்களுக்கு மிகாமல் உள்ள காலத்திற்குள் விண்ணப்பதாரால் மாவட்ட ஆட்சியருடன் குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றப்படும். குவாரி குத்தகை ஒப்பந்த ஆவணத்தினால் மாவட்ட ஆட்சியர் மற்றும் விண்ணப்பதாரரால் கையொப்பமிடப்பட்ட குத்தகை வழங்கப்பட்ட பரப்பின் விலரம் குறிக்கப்பட்ட வரைபடம் இணைத்து குறிப்பிடப்பட்ட நாள்/நேரத்தில் குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றப்படும்.

(ஈ) அரசால் குவாரி குத்தகை ஆணை விண்ணப்பதாரருக்கு வழங்கப்பட்ட பின்னர் விண்ணப்பதாரரால் குத்தகை வழங்கப்பட்ட பரப்பின் விலரம் குறிக்கப்பட்டு கையொப்பமிடப்பட்ட வரைபடம் சமர்ப்பிக்க தவறினாலோ, குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்ற தேவையான முத்திரைதாட்கள் சமர்ப்பிக்க தவறினாலோ அல்லது குறிப்பிடப்பட்ட காலத்திற்குள் குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்ற தவறினாலோ அரசால் வழங்கப்பட்ட குத்தகை ஆவணப்பினை ரத்து செய்து உத்திரவிடுவதுடன் அவரால் செலுத்தப்பட்ட அனைத்து தொகையும் பறிமுதல் செய்யப்படும். அவ்வாறு ரத்து செய்யப்பட்ட குவாரி குத்தகை பகுதிக்கு இரண்டு அல்லது அதற்கும் மேற்பட்ட விண்ணப்பதாரர்கள் இருப்பின் ரத்து செய்யப்பட்ட விண்ணப்பதாரருக்கு அடுத்து அதிகபட்ச டெண்டர்/கேட்டத் தொகை குறிப்பிட்ட விண்ணப்பதாரருக்கு அரசால் மேற்கண்ட உட்குறு (அ) மற்றும் ஆ)-ல் குறிப்பிடப்பட்டுள்ளவைகளுக்கு உட்பட்டு குவாரி குத்தகை உரிமம் வழங்கப்படும். அரசால் அறிவிப்பு ஆணை அனுப்பப்பட்ட அடுத்த அதிகபட்ச டெண்டர்/கேட்டத் தொகை குறிப்பிட்டவரிடமிருந்து 15 தினங்களுக்குள் சம்மதம் கடிதம் மூலம் தெரிவிக்கப்படவில்லை எனில், அக்குறிப்பிட்ட பகுதிக்கு அரசால் புதிய டெண்டர் விண்ணப்பங்கள் கோரப்படும்.

குவாரி பணி மேற்கொள்வதற்கான நிபந்தனைகள்

9. (அ) குவாரி குத்தகை வழங்கப்பட்ட காலத்திற்கு குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றப்பட்ட நாள் குவாரி குத்தகை துவக்க நாளாக இருக்கும்.

(ஆ) குவாரி குத்தகை ஒப்பந்தம் நிறைவேற்றப்படும் முன் டெண்டர் / ஏல விண்ணப்பங்கள், அரசால் உறுதி ஆவணத்தில் தெரிவிக்கப்பட்ட குத்தகை தொகையில் 20% தொகையினை பிணை வைப்புத் தொகையாக செலுத்த வேண்டும்.

(இ) குவாரி குத்தகை உரிமம் தொடர்பாக செலுத்தப்படும் ஒருமுறை குத்தகை தொகையினை தவிர இவ்விதிகளின் இணைப்பு (H)ல் குறிப்பிடப்பட்டுள்ளவாறு குத்தகைதாரர்கள் அல்லவோது வெட்டி எடுக்கும் / உபயோகிக்கும் கனிம அளவிற்கு உரிய விகிதத்தில் கனிம வரி அல்லது முடக்குவரி இடில் எது அதிகமோ அதனை செலுத்த வேண்டும். ஒருமுறை குத்தகை தொகை மற்றும் கனிம வரி அல்லது முடக்குவரி அவற்றில் அதிகமான தொகை மற்றும் அரசால் அல்லவோது அறிவிக்கப்படும் இதர வரிகளையும் குத்தகைதாரர் செலுத்த வேண்டும். கனிம வரி அல்லது முடக்குவரி இவற்றுள் எது அதிகமோ அதனை செலுத்த தவறும் போது குவாரி குத்தகை உரிமம் இரத்து செய்யப்படும். குத்தகைதாரர்கள் முதல் குத்தகை ஆண்டிற்கான முடக்கு வரியினை குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றப்படுவதற்கு முன்னரும் அடுத்து வரும் ஆண்டுகளுக்கான முடக்கு வரியினை ஒவ்வொரு ஆண்டும் குத்தகை காலம் துவங்கும் 30 நாட்களுக்குள்ளும் செலுத்த வேண்டும். குத்தகைதாரர்கள் குத்தகை வழங்கப்பட்ட பகுதியிலிருந்து வெட்டி எடுத்துச் செல்லும் கிராண்டை கந்துண்டுகளுக்கு வழித்தடசான்று கோரி விண்ணப்பிக்கும் போது செலுத்தப்பட வேண்டிய கனிமவரிக்கு, குத்தகைதாரர்களால் ஏற்கணவே செலுத்தப்பட்ட முடக்குவரி உள்ள வரை 80 செய்து கொள்ளப்படும்.



4. நிறைவேற்றப்பட்ட குவாரி குத்தகை ஒப்பந்த ஆலணம் குத்தகைதாரரின் சொந்த செலவில் பதிவு செய்து சமர்ப்பிக்கப்பட வேண்டும்.
5. குவாரி பணியின் போது அருகில் உள்ள பட்டாதாரர்களுக்கும் / பொதுமக்களுக்கும் எவ்வித இடையூறும் ஏற்படுத்தக் கூடாது.
6. குத்தகைதாரர் புல வரைபடத்தின்மீது தனக்கு ஒதுக்கீடு செய்யப்பட்ட பகுதியில் மட்டும் ஆக்கிரமிப்பு ஏதுமின்றி குவாரி பணி செய்ய வேண்டும்.
7. குத்தகைதாரர் குவாரி குத்தகை இடத்தில் குத்தகை உரிமம் குறித்த புல எண், குத்தகை வழங்கப்பட்ட ஆண்டு, குத்தகைதாரர் விவரம் மற்றும் குத்தகை காலம் போன்ற விவரங்கள் அடங்கிய பதானகையினை மாவட்ட ஆட்சியர், இயக்குநர் புவியியல் மற்றும் கரங்கத் துறை அவர்களுக்கு திருத்தி அளிக்கும் வகையில் குத்தகை காலம் முழுவதும் நிறுவி பராமரித்து வரவேண்டும்.
8. குவாரி குத்தகை வழங்கப்பட்டுள்ள இடத்திற்கு சென்று வர பொது போக்குவரத்து சாலைமீலிருந்து அனுபுகூபாதை வசதியினை குத்தகைதாரர் தனது சொந்த செலவில் ஏற்படுத்திக்கொள்ள வேண்டும்.
9. குத்தகைதாரர் 1957 ஆண்டு கரங்கங்களும் கனிமங்களும் (முறைபடுத்தாதல் மற்றும் மேம்படுத்துதல்) சட்டம், 1961-ம் ஆண்டு உலோகம் சார்ந்த கரங்க வரையறை மற்றும் 1980-ம் ஆண்டு வனபாதுகாப்பு சட்டம், 1981-ம் ஆண்டு வனபாதுகாப்பு விதிகள், 1980-ம் ஆண்டு கற்றுச்சூழல் பாதுகாப்பு சட்டம், 1981-ம் ஆண்டு கற்றுச்சூழல் பாதுகாப்பு விதிகள், 1884-ம் ஆண்டு இந்திய வெடிமருந்துகள் சட்டம் (மத்திய சட்டம் IV / 1884) மற்றும் 1959ஆம் ஆண்டு தமிழ்நாடு சிறுகளின் சலுகை விதிகள் ஆகியவற்றில் கண்டுள்ள சரத்துகளுக்கு கட்டுப்பட்டவர் ஆவர்.
10. குவாரி குத்தகைக்கு வழங்கப்பட்டுள்ள பகுதியில் பணிதவங்கும் முன்னர் குவாரி பகுதியினை சுற்றியுள்ள அனைத்து பகுதிகளிலும் சிவப்பு வண்ண கொடியுடன் கூடிய எல்லை குறிக்கும் தூண்கள் DGPS அளவு கொண்டு நிறுவப்பட்டு குத்தகை கால முழுமைக்கும் நல்ல முறையில் பராமரித்து வரவேண்டும்.
11. குவாரி குத்தகை அனுபதிக்கப்பட்டுள்ள பகுதியின் அருகிலுள்ள மட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளியும், அரக புறம்போக்கு நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும் விட்டு குவாரி பணி மேற்கொள்ளப்பட வேண்டும்.
12. வெட்டி எடுக்கப்படும் கனிமங்களின் விவரம் குறித்த பதிலேடு முறையாக பராமரிக்கப்பட வேண்டும்.
13. குவாரி வழங்கப்பட்ட பகுதியினை ஒட்டியுள்ள பகுதியில் காணப்படும் கட்டுமானங்கள், குடியிருப்புகள், மின்/தொலைபேசி கம்பி வழித்தடங்கள், புலகவண்பு இருப்பு பாதை, தீர்வழித்தடங்கள், தேசிய நெடுஞ்சாலை மற்றும் இதர பொது உபயோக இடங்களுக்கு குறைந்த பட்சம் 50 மீட்டர் பாதுகாப்பு இடைவெளியும், அருகில் உள்ள கிராம சாலைகளுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும் விடப்பட்டு குத்தகை காலம் முழுமைக்கும் பராமரிக்கப்பட வேண்டும்.
14. குவாரி பகுதியில் குவாரி பணி மேற்கொள்ள துவங்கும் முன் கரங்க மேலாளர் மற்றும் கரங்க மே. ஆகியோர் நியமனம் செய்யப்படுவதுடன் அவர்கள் முன்னிலையிலேயே குவாரி பணிகள் மேற்கொள்ளப்பட வேண்டும்.
15. குவாரி பணி துவங்கப்படுவது தொடர்பான அறிவிப்பு இயக்குநர், கரங்க பாதுகாப்பு பெங்களூரு அலகளுக்கு அனுப்பப்பட வேண்டும்.
16. குவாரி பகுதியில் விபத்து ஏதும் ஏற்படின் அதனை உடனடியாக இயக்குநர், கரங்க பாதுகாப்பு, பெங்களூரு மற்றும் மாவட்ட ஆட்சியர் அவர்களுக்கு தெரியபடுத்தப்படுவதுடன் குவாரி பணியில் ஏதேனும் விதிமீறல்கள் இருப்பின் அதற்கு குத்தகைதாரரே முழுபொறுப்பாவார்.
17. குத்தகைதாரரால் குவாரி பணி துவங்கும் முன்னர் தமிழ்நாடு மாககட்டுப்பாட்டு வாரியத்திடமிருந்து குவாரி நிறுவதல் மற்றும் இயக்குதல் தொடர்பான இசைவாணை பெற்றுக் கொள்ள வேண்டும்.
18. தமிழ்நாடு மாககட்டுப்பாட்டு வாரியத்தால் விதிக்கப்படும் நிபந்தனைகளை குத்தகைதாரர் தவறாது கடைபிடிக்க வேண்டும்.
19. கற்றுச் சூழல் ஆணையம் மற்றும் தமிழ்நாடு மாககட்டுப்பாட்டு வாரியத்தால் வழங்கப்படும் அனுமதி ஆணைகள் உரிய காலத்தில் தவறாது பதுப்பிக்கப்பட வேண்டும்.
20. குவாரி குத்தகை வழங்கப்படும் பகுதியில் குத்தகை ஒப்பந்த பத்திரம் நிறைவேற்றப்படும் முன்னர் கனிமங்கள் வெட்டி எடுக்கப்பட்டது ஏதும் கண்டறியப்படின குத்தகை ஒப்பந்த பத்திரம் ரத்து செய்யப்படுவதுடன் குற்றலியல் நடவடிக்கைகள் மேற்கொள்ளப்படும்.



9

அட்டவணை

கருப்பு / பலவண்ண கிராண்ட் குவாரிக் பட்டியல்

கிருஷ்ணகிரி மாவட்டம்

வ. எண்	வட்டம்	கிராமம்	ச.எண்	குவாரி குத்தகை வழங்க உள்ள பரப்பு ஹெக்டேர்	வகைப்பாடு	கனிமம் வகை
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	பர்கூர்	பாசிநாயணப்பள்ளி	73(P)	4.25.0	பாறை	கருப்பு கிராண்ட்
2	பர்கூர்	குட்டுர்	362/1(P) BIT-1	1.02.0	கல்லாங்குத்து	கருப்பு கிராண்ட்
3	பர்கூர்	குட்டுர்	362/1(P) BIT-2	1.42.0	கல்லாங்குத்து	கருப்பு கிராண்ட்
4	பர்கூர்	குட்டுர்	309(P)	1.64.0	கல்லாங்குத்து	கருப்பு கிராண்ட்
5	பர்கூர்	குட்டுர்	397/1 & 404/1	2.80.0	தீ.ஏ.த. கல்லாங்குத்து	கருப்பு கிராண்ட்
6	பர்கூர்	பாசிநாயணப்பள்ளி	10(P)	3.46.0	தீ.ஏ.த. பாறை	கருப்பு கிராண்ட் பலவண்ண கிராண்ட்
7	பர்கூர்	மோடிசூப்பம்	121(P)	2.52.0	தீ.ஏ.த.	பலவண்ண கிராண்ட்
8	பர்கூர்	குளாயலை	333(P)	1.98.0	தீ.ஏ.த.	பலவண்ண கிராண்ட்
9	பர்கூர்	ஐகொந்தம்கொத்தப்பள்ளி	337/1 (P)	2.54.0	காடு	பலவண்ண கிராண்ட்
10	பர்கூர்	புளிகுண்டா	345(P) BIT-1	1.28.0	கல்லாங்குத்து	பலவண்ண கிராண்ட்
11	பர்கூர்	புளிகுண்டா	345(P) BIT-2	1.78.0	கல்லாங்குத்து	பலவண்ண கிராண்ட்
12	பர்கூர்	ஜெகதேவிபாளையம்	366(P)	1.87.0	தீ.ஏ.த. பாறை	பலவண்ண கிராண்ட்
13	போச்சம்பள்ளி	நாகோஜனாறுள்ளி	609A(P) BIT-1	2.92.0	தீ.ஏ.த. மலை	பலவண்ண கிராண்ட்
14	போச்சம்பள்ளி	நாகோஜனாறுள்ளி	609A(P) BIT-2	4.10.0	தீ.ஏ.த. மலை	பலவண்ண கிராண்ட்
15	போச்சம்பள்ளி	நாகோஜனாறுள்ளி	609A(P) BIT-3	3.23.0	தீ.ஏ.த. மலை	பலவண்ண கிராண்ட்
16	போச்சம்பள்ளி	நாகோஜனாறுள்ளி	609A(P) BIT-4	1.80.0	தீ.ஏ.த. மலை	பலவண்ண கிராண்ட்
17	போச்சம்பள்ளி	நாகோஜனாறுள்ளி	609A(P) BIT-5	1.54.0	தீ.ஏ.த. மலை	பலவண்ண கிராண்ட்
18	தேன்கனிக் கோட்டை	இருதுகோட்டை	1160/1 (Part)	1.09.0	போடுகால்	பலவண்ண கிராண்ட்

கிருஷ்ணகிரி,
09-10-2020.

வி. ஜெயசந்திர பானுரெட்டி,
மாவட்ட ஆட்சியர்,
கிருஷ்ணகிரி மாவட்டம்.

தமிழ்நாடு எழுதுபொருள் மற்றும் அச்சகத்துறை ஆணையரால் செலம் அரசினர் கிளை அச்சகத்தில் அச்சிடப்பட்டு மாவட்ட ஆட்சியரால் வெளியிடப்பட்டது.

138C/10 (ஆ) எ.வ.35-1



11

2. விண்ணப்பதாரர் தனி நபர்கள் (Individuals) /
(அ) நிறுவனங்கள் (Companies) / பங்குதாரர்
நிறுவனம் (Partnership firm) / இவற்றில்
எதற்கு சொந்தமானது.
- (ஆ) விண்ணப்பதாரர் தனிநபராக இருந்தால் அன்னாரது
பெயர், எந்த நாட்டினர் மற்றும் முகவரி.
- (இ) விண்ணப்பதாரர் /தனிப்பட்ட நிறுவனம் / பங்குதாரர்
நிறுவனம் சொந்தமானதாக இருந்தால் அவைகளின்
இயக்குநர்கள், பங்குதாரர்கள்/ உறுப்பினர்கள் மற்றும்
அவர்கள் எந்த நாட்டினர் என்பது பற்றிய விவரம்
(தக்க ஆவணச் சான்று இணைக்கப்பட்ட வேண்டும்).
3. விண்ணப்ப கட்டணம் செலுத்தியதற்கான விவரங்கள் :
(அ) (சவான்) எனும் மற்றும் நான் குறிப்பிட்டு அசல் சவான்
இணைக்கப்பட்ட வேண்டும் (அல்லது) தேசிய
மயமாக்கப்பட்ட வங்கி அல்லது கட்டுறவு வங்கியில்
மாவட்ட ஆட்சியர் அவர்களின் பதவியின் பெயரில்
கேட்பு வரைவுவோலை (Demand Draft) எடுக்கப்பட
வேண்டும் (அசல் கேட்பு வரைவுவோலை
இணைக்கப்பட்ட வேண்டும்) கேட்பு வரைவுவோலை
எண். நான்.....குறிப்பிட வேண்டும்.
- (ஆ) பின்ன வைப்புத்தொகை (Earnest Money Deposit)
செலுத்தியதற்கான விவரங்கள் (தொகை கேட்பு
வரைவுவோலை எண். நான் குறிப்பிட
வேண்டும். அசல் கேட்பு வரைவுவோலை
இணைக்கப்பட்ட வேண்டும்).
4. விண்ணப்பதாரர் தமது ஆணை உறுதி வாக்கு மூலத்தில் கீழே குறிப்பிட்டபடி தகவல்கள் கொடுக்க வேண்டும்.
- அ) மனுதாரர் நானது தேதி வரை வருமானவரி விவர
அறிக்கை சுமப்பித்து விட்டாரா என்பது பற்றிய விவரம்.
- ஆ) விண்ணப்பதாரருக்கு விதிக்கப்பட்ட வருமான வரியை
செலுத்தி விட்டாரா என்பது பற்றிய விவரம்.
- இ) 1961-ஆம் ஆண்டு வருமானவரிச் சட்டப்படி
சுயமதிப்பீடு செய்ததின் அடிப்படையிலும் (அல்லது)
மத்திய அரசின் மற்ற அறிவிப்புகளின்படியும்
வருமான வரி செலுத்தப்பட்டுள்ளதா என்பது
பற்றிய விவரம்.
5. சுரங்கக் குத்தகைக்கான சுரங்க வரி
(அ) நிலுவையின்மைச் சான்றிதழ்
இணைக்கப்பட்டுள்ளதா?
- (ஆ) விண்ணப்பத் தேதியில் விண்ணப்பதாரர் குவாரி /
சுரங்கக் குத்தகை ஏதும் வைத்திராவிடில் அதற்கான
உறுதிமொழி சான்றாவணம் இணைக்கப்பட்டுள்ளதா?



மாவட்ட ஆரவிதர் சிறப்பு
வெளியீடு குவாரி
பட்டியல் வ.எண்.

மாவட்டம்

13

வட்டம்

கிராமம்

நில
அளவை
எண்.

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11. குவாரி செய்யும் பொருட்டு குத்தகை முறையில் மேற்கண்ட இடத்தைப் பெறவேண்டிய மனுதாரர் கேட்கும் அதிகபட்ச ஒப்பந்தமுள்ளி தொகை (மேற்படி தொகையை எண்ணால் மற்றும் எழுத்தால் எழுதவும்).
12. மாநிலத்தில் உள்ள மாவட்ட வாரியாக கலிய வாரியாக விண்ணப்பதாரர் / ஏலதாரர் நேரடியாகவோ அல்லது பங்குதாரராகவோ தொடர்புள்ள குவாரிகள் பற்றிய விவரங்கள் (அனுபவத்திலிருக்கும் குவாரி குத்தகை அனுமதி பற்றி விவரம், ஏற்கனவே விண்ணப்பித்து இதுவரை அனுமதி வழங்கப்படாத குவாரி குத்தகை அனுமதி பற்றிய விவரம், தற்போது உடனிகழ்வாக விண்ணப்பிக்கும் குவாரி குத்தகை அனுமதி விவரம், ஆணை உறுதி வாக்குமூலம் (அபிடவிட்) மூலம் தெரிவிக்க வேண்டும்).
13. விண்ணப்பதாரரால் சமர்ப்பிக்க விரும்பும் ஏனைய தகவல்கள் ஏதேனும் இருப்பின் அதன் விவரம்.

நான்/நாங்கள் இதன் மூலம் உறுதிப்படுத்துவது என்னவென்றால், மேற்கூறப்பட்ட அனைத்து தகவல்களும், சமர்ப்பிக்கப்பட்ட ஆவணங்கள் சரியானது என்றும், மாவட்ட வன அலுவலர், (அல்லது) மாவட்ட ஆட்சியர் (அல்லது) அரசாங்கம் கேட்கும் அனைத்து தகவல்கள் மற்றும் காப்புத் தொகையையும் சமர்ப்பிக்கின்றோம் என்று உறுதி கூறுகின்றேன்/கூறுகின்றோம். குவாரி குத்தகை வழங்குவது குறித்து குவாரி பணி சம்பந்தமான அனைத்து நிபந்தனைகளையும் 1959-ஆம் ஆண்டு சிறப்புகைக் கமிஷன் சலுகை விதிகளில் குறிப்பிட்ட அனைத்து நிபந்தனைகள் மற்றும் சட்ட விதிகளையும் நான்/நாங்கள் நன்றாக அறிந்து கொண்டோம் என்று இதன் மூலம் தெரிவித்து உறுதி அளிக்கின்றோம்.

இடம்:

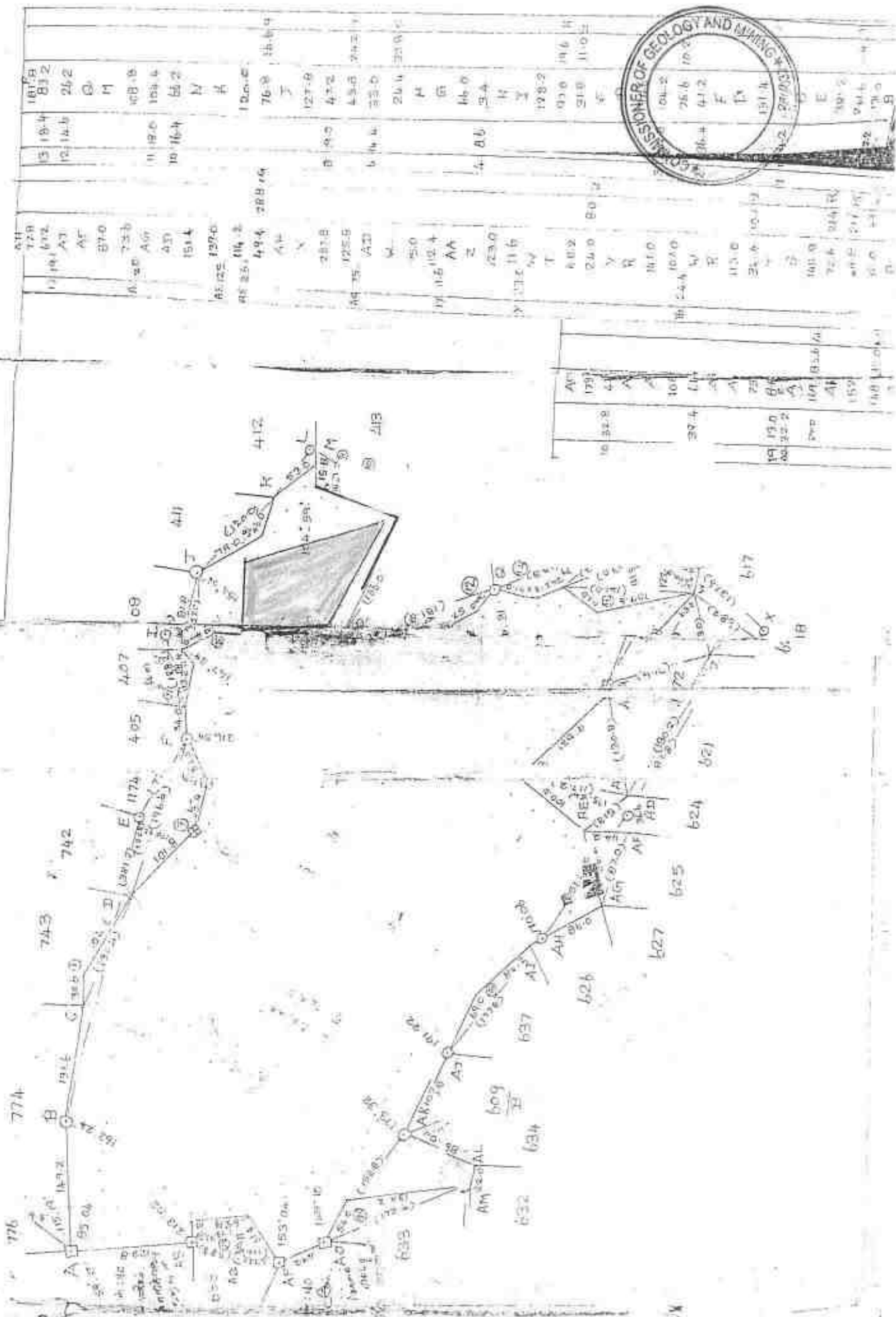
தங்கள் உண்மையுள்ள,

நான்:

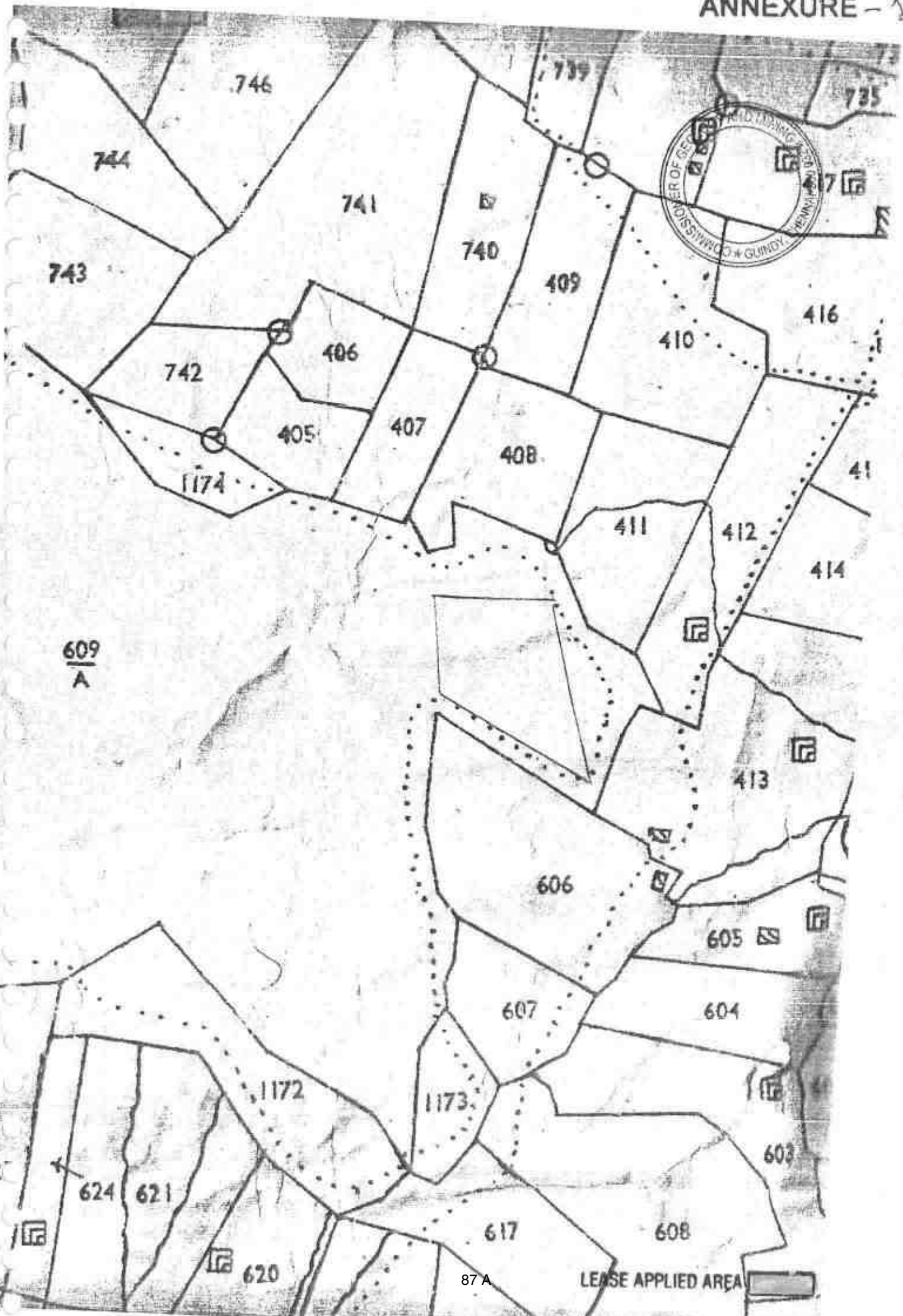
விண்ணப்பதாரர் கையொப்பம்



Handwritten notes in Kannada and English on the left margin, including 'ಬೆಂಗಳೂರು', '12.00', and '4000 609/A'.



411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
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பி. எண். 162-வா கோணத்திலிளி.

1	2	3	4	5	6	7	8	9	10	11	
							கு. கப.	விநா. மர்ஸ்	கு. கப.		
607	3	607-3	ர	ய	...	8-3	8	2 15	0 03.0	0 07	267 ஸல. கோலித்த செட்டி.
									1 07.0	0 67	
608	...	608	அ	ய	...	...	...	...	3 44.0	...	மேய்ச்சலித்
609 A	...	609A	அ	தீ. ம. த.	...	...	...	...	35 12.0	...	மலை தீர்ன ஏற்படாத தரிக.
609 B	1	609B-பா	ர	ய	...	8-5	12	0 62	0 54.0	0 33	1163 மு. ராமன்.
	2	-பா	ர	ய	...	8-5	12	0 62	0 02.0	0 06	109 K.G.F. கண்ணன்.
									0 56.0	0 59	
610	...	610	ர	ய	...	8-5	12	0 62	0 51.0	0 32	243 அ. கோலித்த செட்டியார்.
611	...	611	ர	ய	...	8-5	12	0 62	0 97.0	0 60	1162 ப. ராமகாள்.
612	...	612	ர	ய	...	8-3	8	2 15	1 21.5	2 61	1495 கா. சின்ன பிள்ளை(1), பா. வைரன்(2).
613	...	613	ர	ய	...	8-5	12	0 62	1 09.5	0 68	1763 த. விசாலா ஷியம்மாள்(1). ச. கஜனம்மாள் (2), ரா. சவுந்திர ரோஜா(3), ஆ. பதியினி(4).
614	...	614	ர	ய	...	8-5	12	0 62	0 98.0	0 61	1763 த. விசாலா ஷியம்மாள்(1), ச. கஜனம்மாள்(2), ரா. சவுந்திர ரோஜா(3), ஆ. பதியினி(4).
615	1	615-பா	ர	ய	...	8-5	12	0 62	1 58.0	0 97	243 அ. கோலித்த செட்டி.
	2	-பா	ர	ய	...	8-5	12	0 62	0 64.0	0 40	1139 க. குருகோன்.
									2 22.0	1 37	
616	...	616	ர	ய	...	8-5	12	0 62	1 43.5	0 89	243 அ. கோலித்த செட்டி.
617	...	617	ர	ய	...	8-5	12	0 62	1 62.0	1 00	243 அ. கோலித்த செட்டி.
618	1A	618-1பா	ர	ய	...	8-5	12	0 62	0 41.5	0 26	243 அ. கோலித்த செட்டி.

சென்னை-600 003

சுழிநீர்நிவாரணத்துறை

அனுப்பும்
 திரு. தீபக் எஸ். பீகார், திருவாய்,
 வனஉயிர்வள காப்பகம்,
 மத்திய சி. ஓ. சூழ் - 635 110.
 தொலைபேசி எண். 04344-262259.

பெறும்
 மாவட்ட ஆட்சித் தலைவர்,
 கிருஷ்ணாகிரி மாவட்டம்,
 கிருஷ்ணாகிரி.



உத்தரவு 5278/2019-எல். எம். 20.11.2019
 (சென்னை மற்றும் காந்திரை II, திருவள்ளூர் ஆக்டு 2050)

அன்பா,

பொருள் : சுழிநீர்நிவாரணத்துறை குவாரிகளும் - கிருஷ்ணாகிரி - கிராமணைட் கற்கள் - கிருஷ்ணாகிரி மாவட்டத்தில் கிராமணைட்டுக்கு நிலங்களில் உள்ள கிராமணைட் கற்கள் வெட்டியெழும்பு டெண்டர்ஸ் இணைந்த ஏமாற்றலாகிய தயாரி குத்தகை ஆய்வுகள் குறித்து வனத்துறையின் தலைமையகம் சான்று கோருதல் - வனத்துறை நோக்கியான கருத்து தெரிவித்தல் - தொடர்பாக.

- மர்வை :**
1. மாவட்ட ஆட்சித் தலைவர், கிருஷ்ணாகிரி மாவட்டம் ந.க.எண். 99/2017/கனிமம் நாள்.20.05.2019.
 2. வனச்சரக அலுவலர், தேன்கலரிசோட்டை சரகம் ந.க.எண்.178/2019 நாள்.18.11.2019.
 3. வனச்சரக அலுவலர், கிருஷ்ணாகிரி சரகம் ந.க.எண்.560/2019 நாள்.25.11.2019.

Handwritten signature and date '21/11/19'.

மர்வை 1-ல் கண்ட கிருஷ்ணாகிரி மாவட்ட ஆட்சித் தலைவர் அலுவலரது கடிதத்தில், கிருஷ்ணாகிரி மாவட்டத்தில் உள்ள ஆரக ஹாமில்கை குவாரிகளில் கிராமணைட் கற்கள் வெட்டி எடுக்க டெண்டர் / பொது ஏலம் மூலம் குத்தகைக்கு வாய்ப்பு உண்டிவதற்கு நோக்கியான கருத்து மற்றும் வனத்துறையின் தலைமையகம் சான்று வழங்க வேண்டி கோரிக்கை முன்வைக்கப்பட்டது.

மேற்படி மனு கீழ்க் நடவடிக்கை எடுக்கும் பொருட்டு, கிருஷ்ணாகிரி வனச்சரக அலுவலரால் 25.11.2019-தேதியும் மற்றும் தேன்கலரிசோட்டை வனச்சரக அலுவலரால் 18.11.2019-தேதியும் என மணியாளர்களுடன் தலைமையக மேற்பிரிவைக்கு அறிக்கை சமர்ப்பித்தள்ளனர்.

கிருஷ்ணாகிரி மற்றும் தேன்கலரிசோட்டை வனச்சரக அலுவலர் அறிக்கைகளின் அடிப்படையில், கிராமணைட் கற்கள் வெட்டி எடுக்க டெண்டர் / பொது ஏலம் மூலம் குத்தகைக்கு வழங்க அனுமதி கோரியுள்ள பகுதிகளை வன உயிர்வள காப்பகமீறால், சரக மணியாளர்களுடன் தனித்தனிக் செய்யப்படும், வந்தகண்ட ஆட்டவகைகள் உள்ள குவாரி பகுதிகளுக்கு கிராமணைட் கற்கள் வெட்டி எடுக்க டெண்டர் / பொது ஏலம் மூலம் குத்தகைக்கு வாய்ப்பு உண்டிவதற்கு தலைமையகம் கீழ்க்கண்டவாறு இவ்வனுமதிக்கான அனுமதி மீளக்கொடுக்கப்படுகிறது.

அட்டவணை - 1

கிராணை கற்கள் வெட்டி எடுக்க டெண்டருடன் இணைந்த ஏலமுறை வழங்க பரிந்துரை செய்யப்படும் குவாரிப் பகுதிகள் விபரம்



Sl. No.	Taluk	Village	Survey Number	Propoed area (In Ha)
1	BARGUR	PASINAYANAPALLI	10(P)	3.69.0
2	BARGUR	MODIKUPPAM	121(P)	2.85.0
3	BARGUR	SHOOLAMALAI	333(P)	2.00.0
4	BARGUR	IKONDAM-KOTHAPALLI	337/1(P) Bit 2	2.54.0
5	BARGUR	PULIGUNDA	345(P) BIT-1	1.67.0
6	BARGUR	PULIGUNDA	345(P) BIT-2	1.78.0
7	BARGUR	JAGADEVIPALAYAM	366(P)	1.87.0
8	BARGUR	PASINAYANAPALLI	73(P)	4.25.0
9	BARGUR	GUTTUR	309(P)	2.50.0
10	BARGUR	GUTTUR	362/1(P) BIT-1	1.02.0
11	BARGUR	GUTTUR	362/1(P) BIT-2	1.62.0
12	BARGUR	GUTTUR	397/1 & 404/1	2.80.0
13	POCHAMPALLI	NAGOJANAHALLI	609A(P) BIT-1	2.92.0
14	POCHAMPALLI	NAGOJANAHALLI	609A(P) BIT-2	4.10.0
15	POCHAMPALLI	NAGOJANAHALLI	609A(P) BIT-3	3.23.0
16	POCHAMPALLI	NAGOJANAHALLI	609A(P) BIT-4	1.80.0
17	POCHAMPALLI	NAGOJANAHALLI	609A(P) BIT-5	1.54.0
18	DENKANIKOTTAI	IRUDHUKOTTAI	1160	3.06.0

கீழ்க்கண்ட அட்டவணை 2-ல் குறிப்பிடப்பட்டுள்ள பகுதிகளில் குவாரிப் பணி செய்ய டெண்டருடன் இணைந்த ஏலமுறையில் விடுவதை தற்போது நிறுத்திவைக்கலாம் என்பதை தெரிவித்துக்கொள்கிறேன்.

அட்டவணை - 2

கீழ்க்கண்ட பகுதிகளில் கிராணை கற்கள் வெட்டி எடுக்க டெண்டருடன் இணைந்த ஏலமுறை விடுவதை தற்போது நிறுத்திவைக்கலாம்

Sl. No.	Taluk	Village	Survey Number	Propoed area (In Ha)
1	BARGUR	MODIKUPPAM	143/2(P)	1.60.0
2	BARGUR	IKONDAM-KOTHAPALLI	337/1(P) Bit 1	2.96.0
3	POCHAMPALLI	NAGOJANAHALLI	642(P)	1.00.0
4	UTHANGARAI	KUNNATHUR	220/1 & 220/2	1.89.0



தமிழ்நாடு தமிழ்நாடு TAMILNADU

CB 432906

30 JUL 2020

A-A Enterprises
Madurai

M/s. AA ENTERPRISES
MADURAI.

T. சுப்பிரமணியன்
620 IV Vendor
ROC No. 6645 B/85
10-A, B.B. Street

PARTNERSHIP DEED



This Deed of Partnership is entered into on this 2nd Day of August, 2020

between:-

1. Sri.S.RAMASUBRAMANIAM (PAN : AHLPR 3060 P & Aadhar No. 9151 8455 6964) S/o.Sri.A.Subbiah Ambalam, aged about 50 years residing at S.Othapatti, Pudusukkampatti Post, Melur Taluk, Madurai District - 625 105, Tamilnadu hereinafter called as the **FIRST PARTY**;

2. Sri.N.RAJA SUNDARESHWARAN (PAN : ANOPR 1420 L & Aadhar No.3311 4334 9920) S/o.Sri.M.V.Natesan, aged about 49 years residing at Soorakovil Street, Keelaiyur Post, Melur Taluk, Madurai District - 625 106, Tamilnadu hereinafter called as the **SECOND PARTY**;

1. S. Ramany

2. N. Raja Sundar

Continued...2...



தமிழ்நாடு தமில்நாடு TAMILNADU

30 JUL 2020

A. A. Enterprises
Madurai

--: 2 :-



CB 432907

T. சுப்ரமணியன்

Jt. SRO IV Vendor

ROC No. 6645 B1/85

10-A, B.B. Street

சந்திராபுரம், மதுரை-625 011



WHEREAS the above two parties to this agreement have decided to
on the business of partnership under the name and style of
"M/s. AA ENTERPRISES" with effect from 02.08.2020 and now in order to
put the terms & conditions in writing they desirous of to have this written instrument
of Partnership Deed.

NOW THIS DEED OF PARTNERSHIP WITNESSES AS FOLLOWS:-

1. This Partnership Deed shall come in to force on and from the 02nd Day of
August, 2020.

1. S. Ramasamy

2. N. P. [Signature]

Continued...3...



தமிழ்நாடு தமில்நாடு TAMILNADU

CB 432908

30 JUL 2020

A.A. Enterprises
Madurai

T. சம்பநாயகன்
Jt. SRO IV Vendor
ROC No. 6645 B1/85
10-A, B.G. Colony
சம்பநாயகன், மதுரை-625 011

---3---

2. The name and style of the firm shall be M/s. AA ENTERPRISES and/or such other name or names as the parties may mutually agree from time to time.

3. The Registered Office premises of the firm shall be situated at No.93&94, Poombukar Nagar, Valar Nagar, Uthangudi, Madurai – 625 107, Madurai District, Tamilnadu, India. However with the mutual consent of the parties herein this may be shifted to any other place.

1. S. Ramalingam

2. N. Prabhakaran

Continued...4...

4. The main business of the firm shall be Manufacture / Trade buying / selling / purchase and sale of Rough dimensional blocks of granites in and outside India. The firm shall carry on the execution of raising contracts for excavation of granite stones and civil contract work or labour etc., for Central and State Government Department and others. The firm can also carry on any business as its subsidiary or ancillary business to the attainment of its main business or businesses as may be mutually decided by the parties from time to time.

The firm can acquire obtain on lease under licence or assignment or otherwise secure lands of every description and mines and running rights quarries, and to mine, win, exercise, undertake and carry on the business of mining in all its branches, if any. To carry on the work of raising agent for a fixed sum agreed by an written agreement from time to time. To manufacture polished, semi-polished products and to do purchase and sale of mining lands and also install polishing unit for processing.

5. The duration of the partnership shall be at **WILL**.

6. The Total Capital of the firm shall be **Rs.10,00,000/-** on the date of this agreement which shall be contributed by the parties as follows:-

First Party	:	Sri.S.Ramasubramaniam	:	Rs. 5,00,000/-
Second Party	:	Sri.N.Raja Sundareshwaran:		Rs. 5,00,000 -
		Total		Rs. 10,00,000/-

The amount standing to the credit of the capital / current accounts of the respective partners as at beginning of the every accounting year shall be treated as the capital balance of the respective partners. The interest on capital shall be calculated on this balance in accordance with clause No.7.

1. S. Ramasubramaniam

2. N. Raja Sundareshwaran

Continued...5...

7. It is agreed that whenever there is a credit balance in the current account of the partners, such balance can be transferred from the current account to capital account of the respective partner on every first day of April and such increased balance in the capital account as above, shall be treated as the capital balance of the partners as on the first day of every accounting year and shall be entitled for interest at the maximum rate specified in the Income Tax Act, 1961, which rate at present is 12% simple interest per annum. Provided that no interest shall be charged if there is loss before making any provision for interest or the parties decided not to take interest on their capital accounts.

8. The First party are shall be the Managing cum Working Partner of this firm and the Second party shall be the working partner of this firm and they shall be vested with all the powers to manage the day today business affairs of the firm. For the above active engagement and managing the business of the firm, the above partners shall be entitled to remuneration as per below mentioned income tax act, sharing as his profit ratios.

However in the event of total remuneration payable to all the Working Partners exceeds the maximum allowable remuneration in the hands of the firm in accordance with the provisions of Section 40(b) of the Income Tax Act, 1961 and or other amendments come into force from time to time, the total remuneration payable to the above partners shall be restricted to the book profits of the firm and shall be divided in PROFIT RATIO.

9. Bank account or accounts shall be opened in the name of the firm and it shall be operated by the Both Parties on "EITHER OR SURVIVOR BASIS".

10. The firm has power to borrow monies from the banks and other financial institutions or from private parties at such rates of interest as may be agreed upon by the parties for the proper conduct of the firm.

11. All assets purchased out of the funds of the firm are treated as the assets of the firm in its accounts and shall belong to the firm irrespective of the fact that such assets stand in the individual names of any one of the partners. Contracts taken / or Agreements signed in the individual names of the parties referred to above shall also be the business of the firm.

I. S. Ramasamy

W. P. T.

12. The partners shall also have the right to convert or bring in the assets standing in their individual names in to the business of the firm as their initial or additional capital contribution, as may be agreed by the parties.



13. Licences and permits necessary for carrying on the business of the firm may stand either in the name of the firm or in the name of any one of the partners.

14. Proper books of accounts shall be maintained and the books so maintained shall be closed on 31st March of every year to ascertain the profit or loss of the firm. The profit or loss arrived after considering all the expenses including interest on capital of partners and remuneration payable if any to partner, shall be divided by the parties in below mentioned ratio.

First Party	:	Sri.S.Ramasubramaniam	:	70.00%
Second Party	:	Sri.N.Raja Sundareshwaran:		30.00%
		Total		<u>100.00%</u>

15. No partner shall under any circumstances transfer or encumber his share in the firm without the previous consent of the other partners in writing.

16. All the parties herein can carry on any business anywhere and this firm shall not have any right or liability on such other business.

17. All disputes which may arise during the continuance of the firm or afterwards between the partners shall be referred to one or more arbitrators to be selected by the parties themselves whose decision shall be final and binding on the parties.

1. S. Ramasubramaniam

2. N. Raja Sundareshwaran

Continued...7...



18. Any of the clauses may be altered, modified, substituted or new clauses added to this partnership deed with the consent of all the partners and such clauses though may not be embodied in the deed it shall have the same effect as if it were contained as a clause of this deed and the provisions of the Indian Partnership Act, 1932 shall apply in all matters not provided herein.

IN WITNESS WHEREOF the parties hereto have signed this deed in token of their acceptance of the above terms and conditions.

S. Ramasubramaniam
1. S.RAMASUBRAMANIAM
(First Party)

N. Raja Sundareswaran
2.N.RAJA SUNDARESHWARAN
(Second Party)

WITNESSES:-

- 1) *P. M. ...*
P. M. ...
S/o A. Rajamathiraman
4/55, S. S. ...
Y. ...
... - 625107
- 2) *S. ...*
S/o V. Subbish
Perisevalpatti
Karungalakudi Po
Melur T.K
Madurai Dt



F.N. Gopalakrishnan, Krishnagiri

தமிழ்நாடு TAMIL NADU

G. LATHA, B.Com.

5.11.2020

75AB 838556

65/41A 1st Cross, Madras Road, Krishnagiri

AA Enterprises

KRISHNAGIRI-635001.

Madurai

S.V.L. No. 3936/B1/2000

AUTHORISATION

I, S.Ramasubramaniam son of A.Subbaiah Ambalam Partner of AA ENTERPRISES having office at NO.93&94, Poombukar Nagar, Valar Nagar, Uthangarai, Madurai-625 107 hereby authorize N.Raja Sundareswaran son of M.V.Natesan, aged about 49 years, residing at Soorakovil Street, Keelaiyur Post, Melur Taluk, Madurai District-625106 to appear before you The concerned Officer for Auction for lease of mining schedule to be conducted on [7. 11. 2020] and take part in the auction and sign the necessary documents related to the same. He is carrying the necessary documents for the auction .

S. Ramasubramaniam

N. Raja Sundareswaran

Signed before me at Krishnagiri on 5.11.2020



F.N. Gopalakrishnan

**F.N. GOPALAKRISHNAN, B.A., LL.B.,
ADVOCATE & NOTARY
No: 65/41A, 1st Cross, Madras Road
KRISHNAGIRI-635 001
Cell: 9944476082, 9443276067**






Government of India

Download Date: 27/10/2020
 
 Issue Date: 08/10/2020

* பரிசீலிக்கப்பட்டது
 S Pemasubramaniam
 பிறந்த நாள்/DOB: 07/04/1970
 ஆகை / MALE

9655425859
9151 8455 6964
 VID : 9186 9924 9424 8803

எனது ஆதார், எனது அடையாளம்




Unique Identification Authority of India

முகவரி:
 தலை / தலை குறை: அழகப்பர் அம்பலம்,
 புதுசுகம்பட்டி, திருச்சூர் மாவட்டம்,
 குடியேற்றம், மேலூர், தமிழ்நாடு - 625105

Address:
 S/O: Subbian Ambalam - S.OTHAPPATI,
 PUDUSUKAMPATTI POST, MELLUR,
 THALUKA, Melavalavu, Madurai,
 Tamil Nadu - 625105



9151 8455 6964
 VID : 9186 9924 9424 8803

1947 | help@uidai.gov.in | www.uidai.gov.in

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



M. Dharmalingam

अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रमाण पत्र
(खनिज रियायत नियमावली, 1960 के नियम 22सी के तहत)
CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON
(Under Rule 22C of Mineral Concession Rules, 1960)

श्री एम. इफ्तिकार अहमद, 129/8, 11वीं क्रॉस, सिवया नगर, अलघापुरम-पी.आ. सेलम - 636 004, तमिल नाडू, जिनका फोटो और हस्ताक्षर ऊपर दिया हुआ है, तथा जिनहोंने अपनी अर्हता और अनुभव का संतोषजनक साक्ष्य दिया है, को खनन योजना तैयार करने हेतु खनिज रियायत नियमावली 1960 के नियम 22सी के तहत अर्हताप्राप्त व्यक्ति के रूप में मान्यता प्रदान की जाती है।

Shri M. Ifthikhar Ahmed, 129/8, 11th Cross, Sivaya Nagar, Alagapuram (PO), Salem - 636 004, Tamilnadu 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.

उनकी पंजीयन संख्या है
His registration number is

RQP/MAS/183/2004/A

यह मान्यता 10 वर्षों की अवधि के लिए मान्यता है जो दिनांक 10.01.2024 को समाप्त होगी।
This recognition is valid for a period of 10 years ending on 10.01.2024

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 be 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 : 02.01.2014

क्षेत्रीय खान नियंत्रक / Regional Controller of Mines
भारतीय खान ब्यूरो / Indian Bureau of Mines
चेन्नई क्षेत्र / Chennai Region



PLATE NO : I-D

DATE OF SURVEY : 03.03.2021

APPLICANT:


Tvl. A.A. ENTERPRISES,
MANAGING PARTNER,
S. RAMASUBRAMANIAM,
D. NO.93 & 94,
POOMBUGAR NAGAR, VALAR NAGAR,
UTHANGUDI, MADURAI-625 107.

LOCATION OF QUARRY:

S.F.NO : 609A(Part) BIT-5,
EXTENT : 1.54.0 Ha,
VILLAGE : NAGOJANAHALLI,
TALUK : POCHAMPALLI,
DISTRICT : KRISHNAGIRI,
STATE : TAMILNADU.

INDEX

Q. I. A. AREA BOUNDARY 

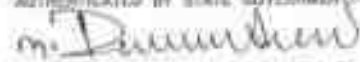
500 m RADIUS 

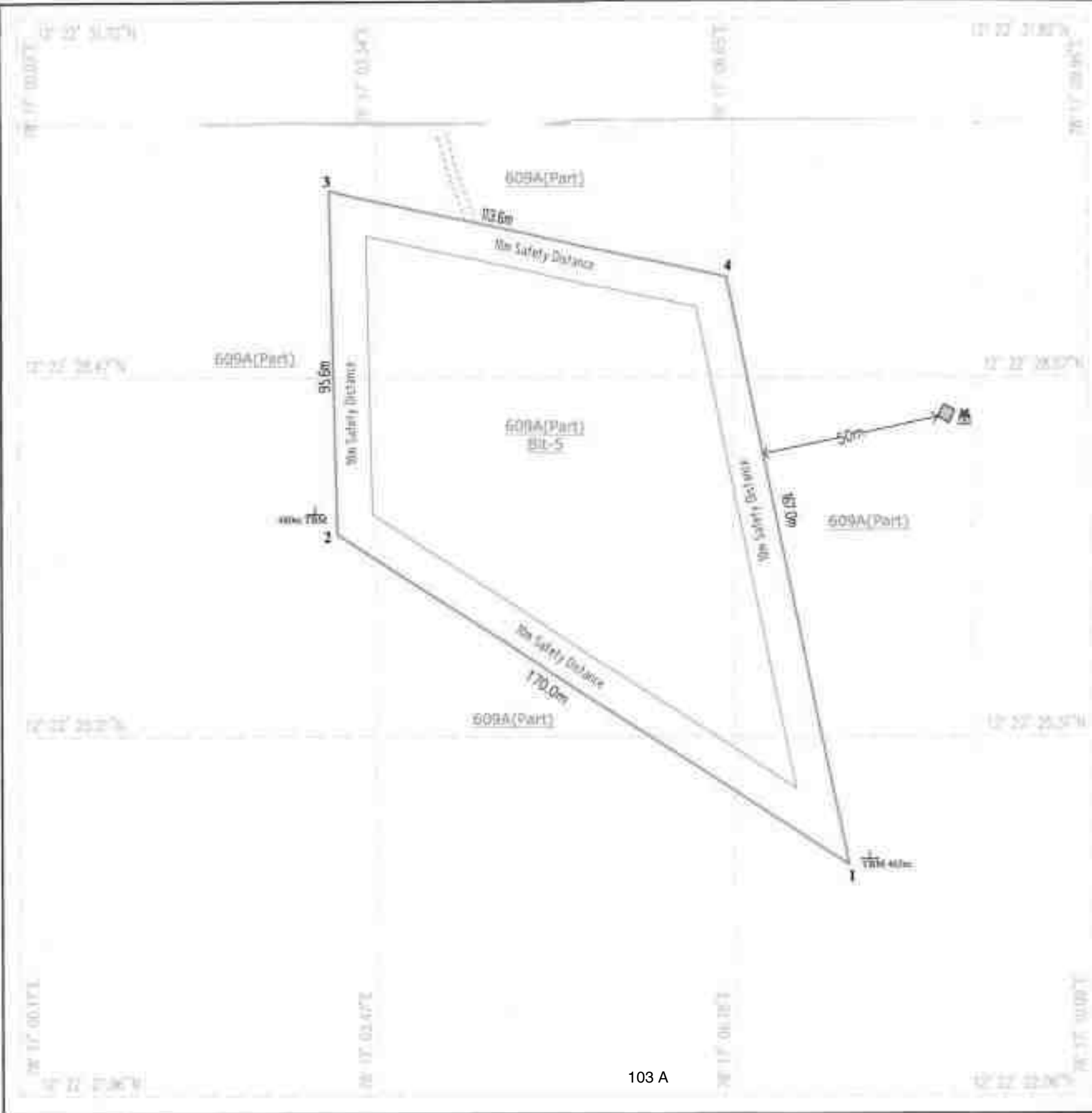
**SATELLITE IMAGERY
MAP FOR 500m RADIUS**

SCALE = 1 : 5000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN
THIS PLATE IS TRUE AND CORRECT TO THE BEST
OF MY KNOWLEDGE BASED UPON THE LEADMAP
AUTHENTICATED BY STATE GOVERNMENT


DR. NITHINKUMAR AHMED, M.Sc., F.C.S., M.B.A., Ph.D.
RECOGNIZED QUALIFIED PERSON
RSP/MAS/1183/2004/2



S.N.	LATITUDE	LONGITUDE
1	12° 22' 28.17" N	78° 17' 01.81" E
2	12° 22' 27.88" N	78° 17' 03.07" E
3	12° 22' 31.18" N	78° 17' 02.10" E
4	12° 22' 32.41" N	78° 17' 04.47" E

UTM 48Q-49

PLATE NO. II
DATE OF SURVEY - 03.03.2021

APPLICANT:
T.V. A. A ENTERPRISES,
MANAGING PARTNER,
S. RAMASUBRAMANIAM,
D.NO. 93 & 94,
POOMBUGAR NAGAR, VALAR NAGAR,
UTHANGUDI, MADURAI-625-107.

LOCATION OF QUARRY:
S. F. NO : 609A(Part) BIT-5,
EXTENT : 1.54.0 Ha,
VILLAGE : NAGOJANAHALLI,
TALUK : POCHAMPALLI,
DISTRICT : KRISHNAGIRI,
STATE : TAMILNADU.

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Q.L APPLIED AREA BOUNDARY	
10m SAFETY DISTANCE	
APPROACH ROAD	
TEMPORARY BENCH MARK	
HOUSE	
TEMPLE	

QUARRY LEASE PLAN
SCALE 1:1000

PREPARED BY:
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE SCETCHES AUTHENTICATED BY STATE GOVERNMENT.

M. Durairaj
S.M. ENGINEERING CONSULTANTS PVT. LTD., S.M.A. P.O.,
KODAIKANAL, MADURAI DISTRICT
605 002/TN/9994/3



PLATE NO. III	
ONE OF THREE - 01.03.2021	
APPLICANT:	
T.V. A. ENTERPRISES, MANAGING PARTNER, S. RAMASUBRAMANIAM, D. NO. 93 & 94, POOMBUGAR NAGAR, VALAR NAGAR, UTHANGUDI, MADURAI-625 107.	
LOCATION OF QUARRY:	
S. F. NO. :	609A(Part) BIT-5.
EXTENT :	1.54.0 Ha.
VILLAGE :	NAGOJANAHALLI,
TALUK :	POCHAMPALLE,
DISTRICT :	KRISHNAGERI,
STATE :	TAMILNADU.
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TOPOGRAPHICAL CONTOUR	
STRIKE AND DIP	
OUT CROPS	
TOPSOIL	
SCRUB	
COLOR GRANITE	
SURFACE PLAN	
SCALE 1/1000	
PREPARED BY:	
<p>THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE (LATEST) MEASUREMENTS BY STATE SURVEYOR</p> <p><i>S. Ramasubramaniam</i> S. RAMASUBRAMANIAM, P.E., S.E., P.E., REGISTERED SURVEYOR (P) WITH NO. 1041/1987/2004/1</p>	



PLATE NO. IV
 DATE OF SURVEY - 03.03.2021

APPLICANT:
 T.V. A. ENTERPRISES,
 MANAGING PARTNER,
 S. RAMASUBRAMANYAM,
 D. NO. 93 & 94,
 POOMBUGAR NAGAR, VALAR NAGAR,
 UTHANGUDI, MADURAI-625 107.

LOCATION OF QUARRY:
 S.F. NO (609A(Part) S/T-5,
 EXTENT : 1.54.0 Ha,
 VILLAGE : NAGOTANAHALLI,
 TALUK : POCHAMPALLE,
 DISTRICT : KRISHNAGIRI,
 STATE : TAMILNADU.

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STRIKE AND DIP	
OUT CROPS	
TOPSOIL	
SCRUB	
COLOR GRANITE	
WEATHERED ROCK	



GEOLOGICAL PLAN AND SECTIONS
 SCALE 1:1000

PREPARED BY:

 M. S. SRINIVASAN
 SENIOR SURVEYOR, G.S.I., MADURAI
 REGISTERED SURVEYOR



SITE SERVICES	
(Proposed)	
A	OFFICE
B	STORE ROOM
C	FIRST AID ROOM
D	REST SHELTER
E	TOILET
M	MAGAZINE

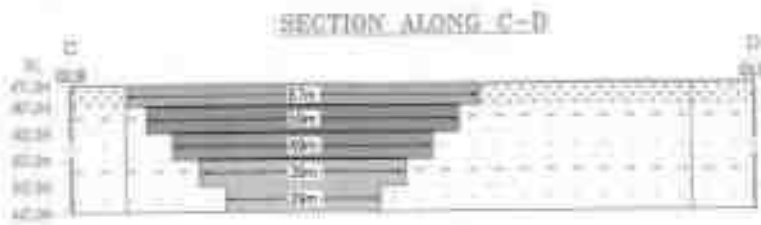
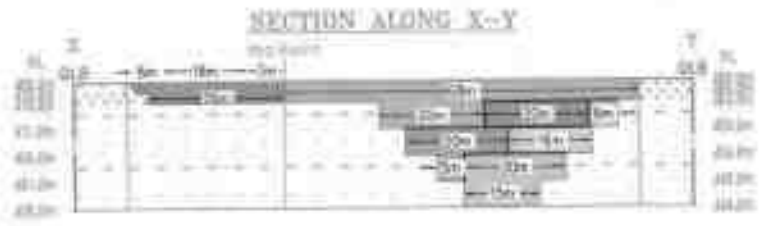
PLATE NO.V
DATE OF SURVEY : 03.03.2021

APPLICANT:
TV. A. A ENTERPRISES,
MANAGING PARTNER,
S.RAMASUBRAMANIAM,
D.NO.53 & 54,
POOMBUGAR NAGAR, VALAR NAGAR,
UTHANGUDI, MADURAI-625 107.

LOCATION OF QUARRY:
S.F.NO : 609A(Part) BIT-5,
EXTENT : 1.54.0 Ha,
VILLAGE : NAGOJANAHALLI,
TALUK : POCHAMPALLI,
DISTRICT : KRISHNAGERI,
STATE : TAMILNADU.

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□	APPLIED AREA BOUNDARY
□	100M SAFETY DISTANCE
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□	TEMPORARY BENCH MARK
□	HOUSE
□	TEMPLE
□	TOPOGRAPHICAL CONTOUR
□	STRIKE AND DIP
□	DUT CROPS
□	TOPSOIL
□	SCRUB
□	COLOR GRANITE
□	WEATHERED ROCK
□	DUMP
□	QUARRY ROAD

[Signature]
COMMISSIONER
GEOLOGY AND MINING,
QUINDY, CHENNAI-600 002.



1st-yr Proposed area to be Quarried	1st-yr Proposed area to be Plantation
2nd-yr Proposed area to be Quarried	2nd-yr Proposed area to be Plantation
3rd-yr Proposed area to be Quarried	3rd-yr Proposed area to be Plantation
4th-yr Proposed area to be Quarried	4th-yr Proposed area to be Plantation
5th-yr Proposed area to be Quarried	5th-yr Proposed area to be Plantation

YEARWISE DEVELOPMENT AND PRODUCTION PLAN AND SECTIONS

SCALE 1:1000
PREPARED BY:
[Signature]
QUALIFICATION: B.E., CIVIL ENGINEERING
REGISTERED QUALIFIED PERSON
NO. 1462/1987/TN/2001/A

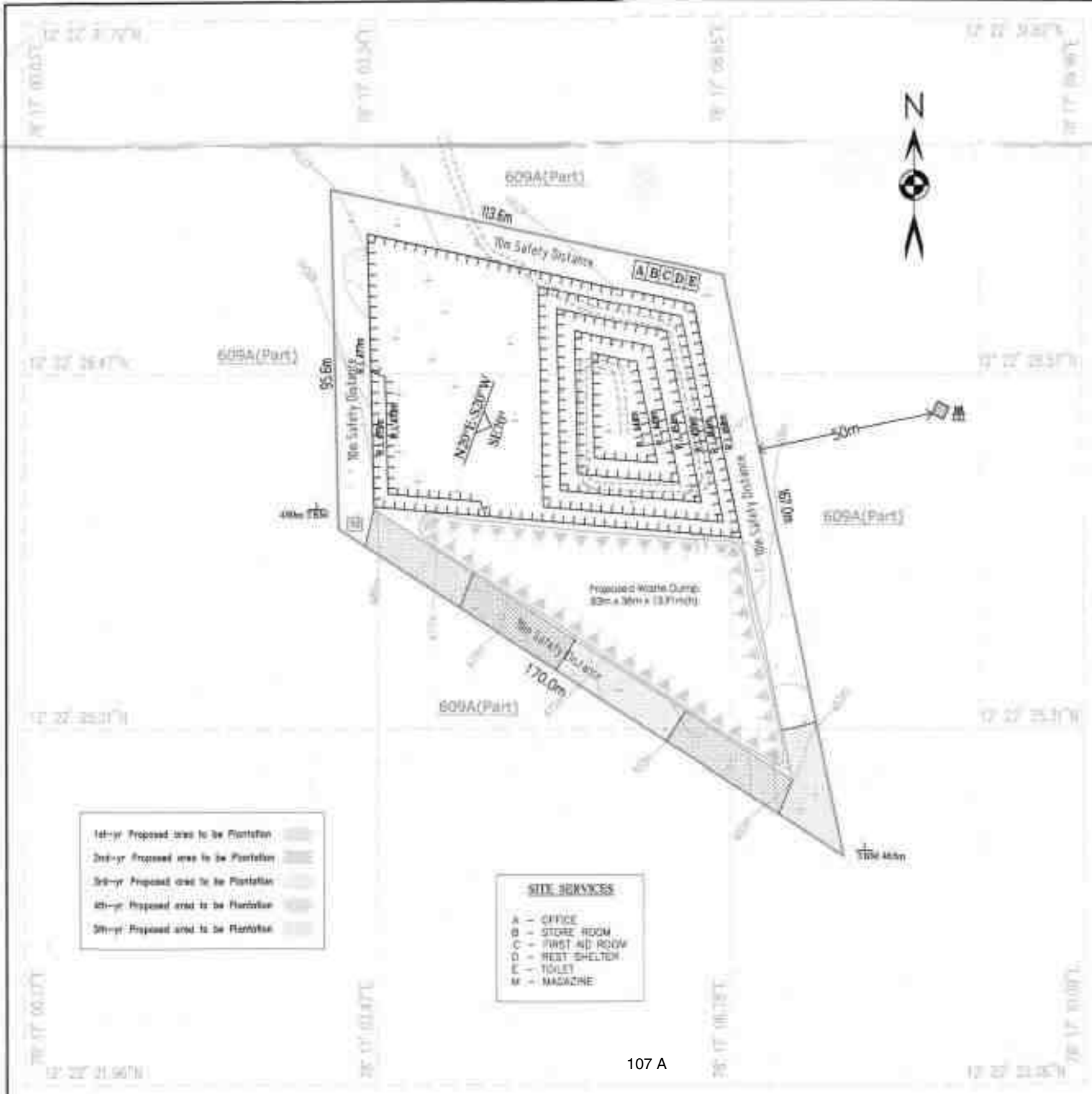


PLATE NO. VI
DATE OF SURVEY : 03.03.2021

APPLICANT:
T.V.L.A. ENTERPRISES,
MANAGING PARTNER,
S. RAMASUBRAMANIAM,
D.NO. 93 & 94,
POOMBUGAR NAGAR, VALAR NAGAR,
UTHANGUDI, MADURAI-625 107.

LOCATION OF QUARRY:
S.F. NO : 609A (Part) BIT-5,
EXTENT : 1.54.0 Ha.
VILLAGE : NAGDIANAVALLY,
TALUK : POCHAMPALLI,
DISTRICT : KRISHNAGIRI,
STATE : TAMILNADU.

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Q.L APPLIED AREA BOUNDARY	
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OUT CROPS	
TOPSOIL	
SCRUB	
COLOR GRANITE	
WEATHERED ROCK	
DUMP	
QUARRY ROAD	
QUARRY PIT	

**QUARRY LAYOUT AND
AFFORESTATION
PLAN**
SCALE 1:1000

PREPARED BY:

S. RAMASUBRAMANIAM, P.E.S., M.E.S., P.M.S.
REGISTERED QUALIFIED PERSON
NO./VAL/18/2004/A

1st-yr Proposed area to be Planted
2nd-yr Proposed area to be Planted
3rd-yr Proposed area to be Planted
4th-yr Proposed area to be Planted
5th-yr Proposed area to be Planted

SITE SERVICES
A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHELTER
E - TOILET
M - MAGAZINE



SITE SERVICES

- A - OFFICE
- B - STORE ROOM
- C - FIRST AID ROOM
- D - REST SHELTER
- E - TOILET
- M - MAGAZINE

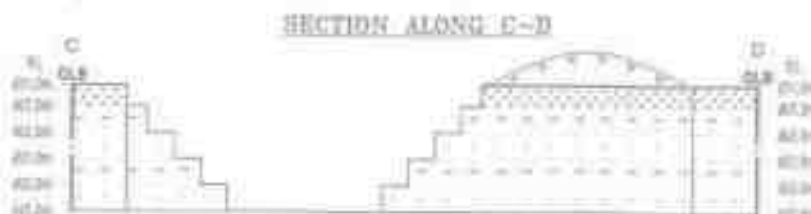
PLATE NO. VI
 DATE OF SURVEY : 03.03.2001

APPLICANT:
 TV. A.A. ENTERPRISES,
 MANAGING PARTNER,
 S. RAMASUBRAMANIAM,
 D. NO. 93 & 94,
 POOMBUGAR NAGAR, VALAR NAGAR,
 UTHANGUDI, MADURAI-625 107.

LOCATION OF QUARRY:
 S.F. NO : 609A(Part) BIT-3,
 EXTENT : 1.54.0 Ha,
 VILLAGE : NAGDJANAHALLI,
 TALUK : POCHAMPALLI,
 DISTRICT : KRISHNAGIRI,
 STATE : TAMILNADU.

INDEX

QUARRIED AREA BOUNDARY	[Symbol]
10m SAFETY DISTANCE	[Symbol]
APPROACH ROAD	[Symbol]
TEMPORARY BENCH MARK	[Symbol]
HOUSE	[Symbol]
TEMPLE	[Symbol]
TOPOGRAPHICAL CONTOUR	[Symbol]
STRIKE AND DIP	[Symbol]
OUTCROPS	[Symbol]
TOPSOIL	[Symbol]
SCRUB	[Symbol]
COLOUR GRANITE	[Symbol]
WEATHERED ROCK	[Symbol]
DUMP	[Symbol]
QUARRY ROAD	[Symbol]
QUARRY PIT	[Symbol]
BUND/FENCING	[Symbol]
PROPOSED CARLAND DRAIN	[Symbol]



LANDUSE PATTERN

DESCRIPTION	PRESNT AREA (Ha)	AREA TO BE SECURED AT THE PRESENT WORKING OF QUARRY (Ha)	TOT AREA OF QUARRY (Ha)	COOR. CODE
AREA UNDER QUARRY	00	0.84.00	1.00.00	
DUMPS	40	0.51.00	BACK FILLING	
INFRASTRUCTURE	00	0.22.00	0.00.00	
ROADS	00	0.21.00	0.00.00	
DRAIN BELT	00	2.17.75	0.46.00	
STOCKING PLOTS	1.54.00	0.55.10	0.00.00	
TOTAL	1.54.00	3.54.00	1.54.00	

PROGRESSIVE QUARRY CLOSURE PLAN AND SECTIONS

SCALE 1:1000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEGAL MAP AUTHORIZED BY STATE GOVERNMENT.

[Signature]
 S. RAMASUBRAMANIAM, S.P.P.O., M.S.A., P.O.,
 SURVEYOR GENERAL'S OFFICE,
 MADURAI-625 107.

OCTOBER TO DECEMBER



PLATE NO : VIII

DATE OF SURVEY : 03.03.2021

APPLICANT:

TV. A. A. ENTERPRISES,
MANAGING PARTNER,
S. RAMASUBRAMANIAM,
D. NO. 93 & 94,
POOMBUGAR NAGAR, VALAR NAGAR,
UTHANGUDI, MADURAI-625 107.



LOCATION OF QUARRY:

S. F. NO : 609A(Part) BTP-5,
EXTENT : 1.54.0 Ha,
VILLAGE : NAGOJANAHALLI,
TALUK : POCHAMPALLI,
DISTRICT : KRISHNAGIRI,
STATE : TAMILNADU.

INDEX

Q. L. APPLIED AREA BOUNDARY	
SAFETY DISTANCE	
500M RADIUS	
60M RADIUS	
APPROACH ROAD	
AGRICULTURAL LAND	
WIND DIRECTION	
TREES	
HABITATION	
DUMP	
QUARRY PIT	
TANK	

ENVIRONMENTAL PLAN

SCALE = 1 : 5000

PREPARED BY :

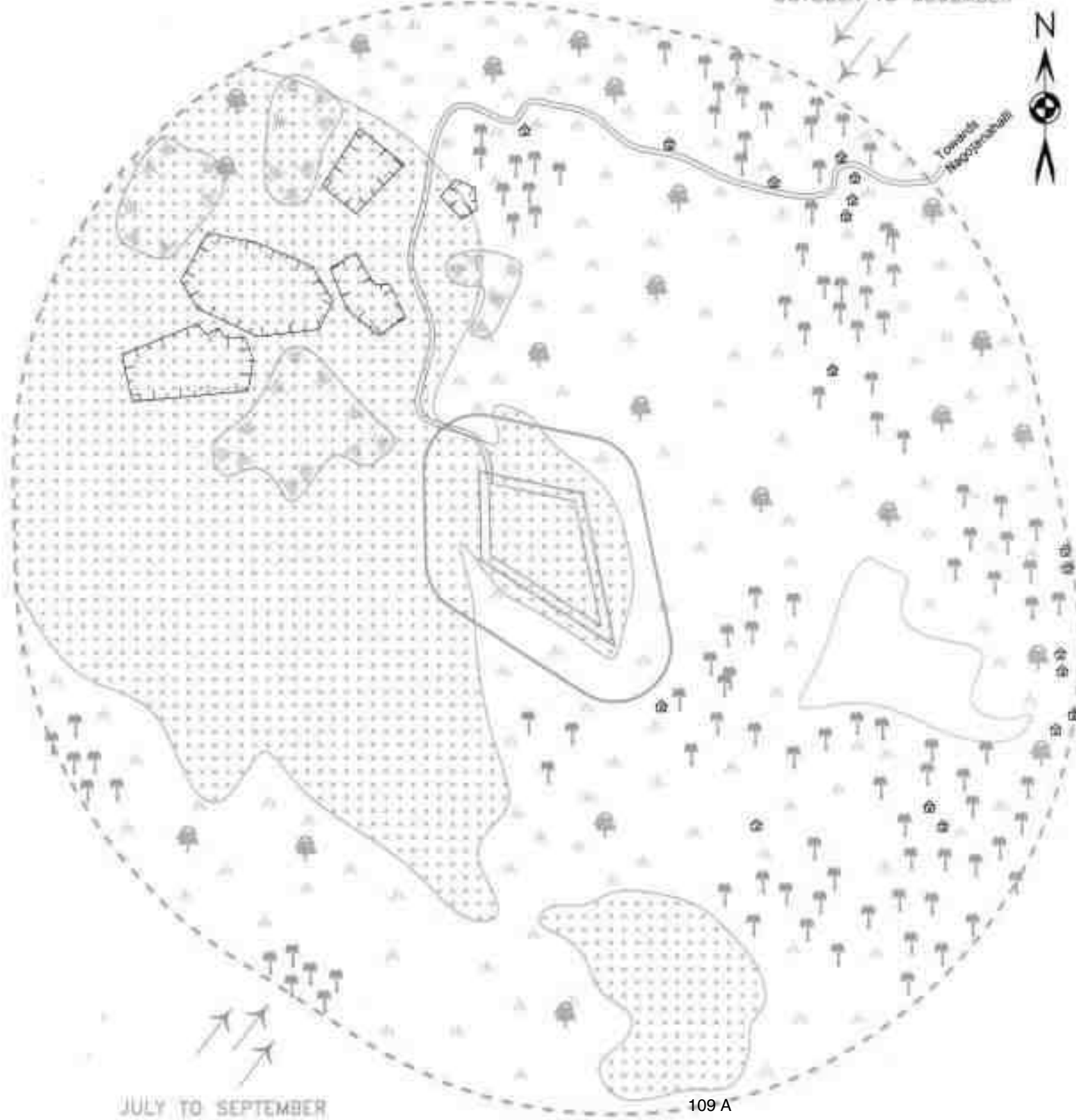
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASER'S AUTHENTICATED BY STATE GOVERNMENT

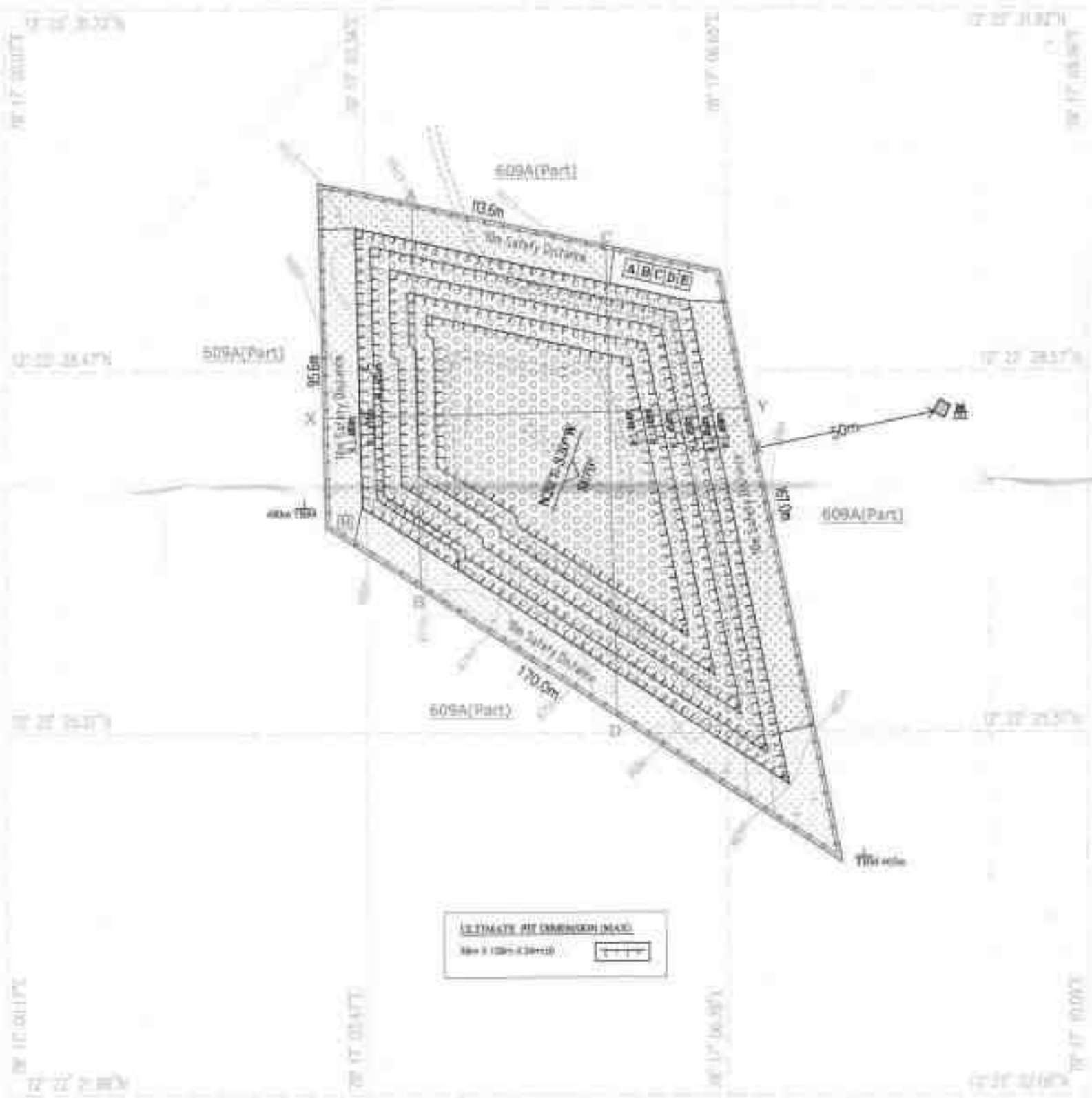
M. Perumal

D. N. P. THIRUHAN AHMED, M.Sc., F.C.S., M.B.A., Ph.D.
REGISTERED QUALIFIED PERSON
RQP/268/183/2004/3

JULY TO SEPTEMBER

109 A





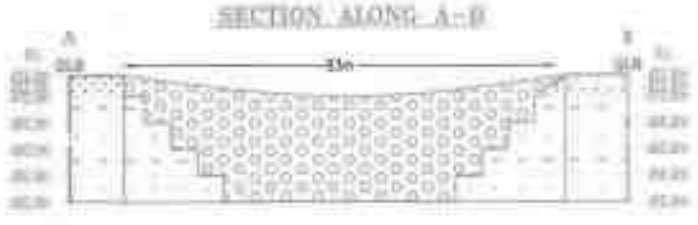
ESTIMATE PIT DIMENSION (MAX)
 Size 3 (20m x 30m)

PLATE NO. IX
 DATE OF SURVEY : 03.03.2021

APPLICANT:
 T.V. A.A. ENTERPRISES,
 MANAGING PARTNER,
 S. RAMASUBRAMANYAM,
 D. NO. 93 & 94,
 POOMBUDAR NAGAR, VALAR NAGAR,
 UTHANGUDI, MADURAI-625 107.

LOCATION OF QUARRY:
 S.P. NO : 609A(Part) BIT-3,
 EXTENT : 1.54.0 Ha,
 VILLAGE : NAGOJANAHALLI,
 TALUK : POCHAMPALLI,
 DISTRICT : KRISHNAGIRI,
 STATE : TAMILNADU.

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Q. APPLIED AREA BOUNDARY	
10m SAFETY DISTANCE	
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TEMPLE	
TOPOGRAPHICAL CONTOUR	
STRIKE AND DIP	
OUT CROPS	
TOPSOIL	
SCRUB	
COLOR GRANITE	
WEATHERED ROCK	
QUARRY ROAD	
QUARRY PIT	
BUND/FENCING	
PROPOSED BACK FILLING	



WATER SERVICES

A - OFFICE	
B - STORE ROOM	
C - FIRST AID ROOM	
D - REST SHELTER	
E - TOILET	
M - MAGAZINE	

1% SLOPE AFFECTIONATION	
2% SLOPE AFFECTIONATION	
3% SLOPE AFFECTIONATION	

CONCEPTUAL PLAN AND SECTIONS
 SCALE 1:1000

PREPARED BY:

 S. RAMASUBRAMANYAM, P.O. CHENNAI,
 REGISTERED SURVEYOR, MADURAI
 (SP/246/193/2004/9)

12° 22' 30.18"N



ANDHRA PRADESH



78° 17' 07.81"E

78° 17' 07.81"E

PLATE NO : 1

DATE OF SURVEY : 02.03.2021

APPLICANT:

TV. A. ENTERPRISES,
MANAGING PARTNER,
S. RAMASUBRAMANIAM,
D. NO. 93 & 94,
ROOMBUGAR NAGAR, VALAR NAGAR,
UTHANGUDI, MADURAI-625 107.

LOCATION OF QUARRY:

S.F. NO : 609A(Part) BIT-5,
EXTENT : 1.54.0 Ha,
VILLAGE : NAGOJANAHALLI,
TALUK : POCHAMPALLI,
DISTRICT : KRISHNAGIRI,
STATE : TAMILNADU.

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Q.L.A. AREA :
TOPIC SHEET NO. : 57 L/07

LATITUDE : 12° 22' 24.18"N to 12° 22' 30.18"N
LONGITUDE : 78° 17' 02.95"E to 78° 17' 07.81"E

LOCATION PLAN

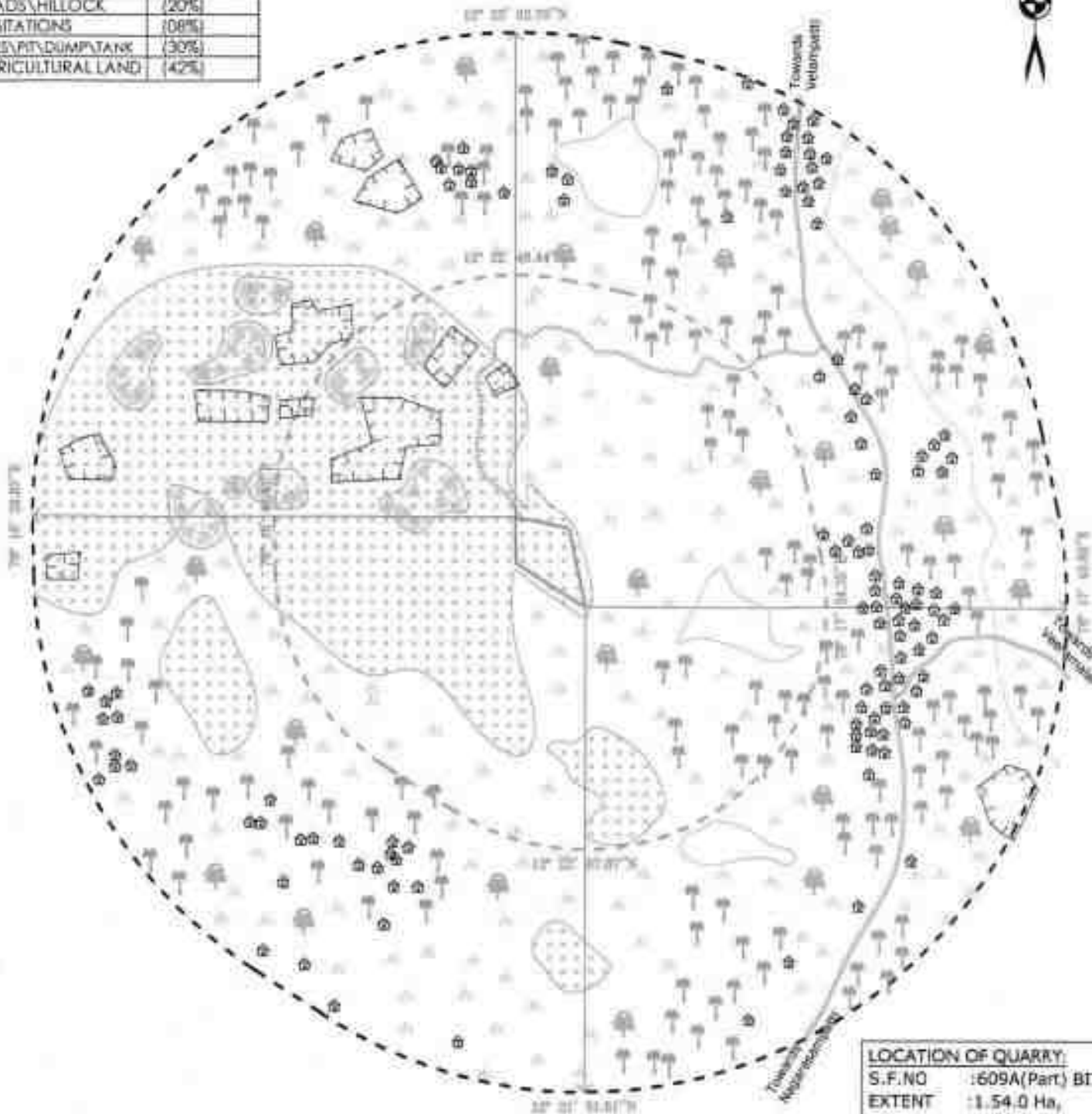
NOT TO SCALE

PREPARED BY :

STATE IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE SURVEY CONDUCTED BY STATE ENGINEERS

S. RAMASUBRAMANIAM,
REGISTERED SURVEYOR,
NO. 148/184/2004/A

LAND USE PATTERN	
DESCRIPTION	PERCENTAGE
ROADS/HILLOCK	(20%)
HABITATIONS	(08%)
TREES/PIT/DUMPTANK	(30%)
AGRICULTURAL LAND	(42%)



LOCATION OF QUARRY:
 S.F.NO : 609A(Part) BIT-5,
 EXTENT : 1.54.0 Ha,
 VILLAGE : NAGOJANAHALLI,
 TALUK : POCHAMPALLI,
 DISTRICT : KRISHNAGIRI,
 STATE : TAMILNADU.

PLATE NO: I-C
 DATE OF SURVEY : 03.03.2021
APPLICANT:
 TV. A.A. ENTERPRISES,
 MANAGING PARTNER,
 S. RAMASUBRAMANIAM,
 D. NO.93 & 94,
 POOMBUGAR NAGAR, VALAR NAGAR,
 UTHANGUDI, MADURAI-625 107.



INDEX
 TOPO SHEET NO. 57 L/07
 LATITUDE : 12° 27' 14.82"N to 12° 27' 22.62"N
 LONGITUDE : 78° 18' 13.14"E to 78° 18' 19.53"E

INDEX	
Q. L. APPLIED AREA BOUNDARY	
1KM RADIUS	
500M RADIUS	
APPROACH ROAD	
DUMP	
AGRICULTURAL LAND	
WIND DIRECTION	
TREES	
QDAI	
HABITATION	
HILLOCK	
QUARRY PIT	
VILLAGE ROAD	
TANK	

ENVIRONMENTAL & LANDUSE PLAN (1km Radius)
 SCALE 1 : 10,000

PREPARED BY:
 THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASHPAN AUTHENTICATED BY STATE GOVERNMENT.

 M. N. SRINIVAS SRINIVAS, P.E.S.A.R.A.N.S.
 REGISTERED QUALIFIED PERSON
 80P/WAS/163/2004/A

Hydrogeological Report for
Colour Granite Quarry Over an extent of 1.54.0Ha of
Government Poramboke land in S.F.No. 609A(Part) (Bit-5) of
Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District,
Tamilnadu.

HYDROGEOLOGICAL REPORT FOR NAGOJANAHALLI
COLOUR GRANITE QUARRY

1. INTRODUCTION

Name of the Applicant with Address-

Name of the applicant : **TVL. A.A. Enterprises**
Address with contact Number: Managing Partner, S. Ramasubramaniam,
D. No. 93 & 94, Poombugar Nagar,
Valar Nagar, Uthangudi,
Madurai District, Tamil Nadu – 625 107.
Mobile : +91 96554 25859 and 96552 95859

Details of the Area-

Land Classification : Government Poramboke land
Survey No : 609A(Part) (Bit-5)
Extent in Hectares : 1.54.0Ha
Village : Nagojanahalli
Taluk : Pochampalli
District : Krishnagiri

The Client requires detailed information on Ground Water Occurrences at Proposed Project Site of Colour Granite Quarry. The objective of the present study is to assess the availability of groundwater and comment on aspects of depth to potential aquifers, aquifer availability and type, possible yields and water quality. For this purpose all available hydrogeological information of the areas has been analyzed, and a geophysical survey was done.

The investigations involved hydrogeological, geophysical field investigations and a detailed study in which the available relevant geological and hydrogeological data were collected, analyzed, collated and evaluated within the context of the Client's requirements. The data sources consulted were mainly:

- a) Central Ground Water Board (CGWB) Data
- b) State & District Geological and Hydrogeological Reports and Maps.
- c) Technical reports of the area by various organizations.

2. SCOPE OF THE WORKS –

The scope of works includes:

- Site visits to familiarize with the project areas. Identify any issues that might impact the Ground Water Scenario due to proposed mining activities.
- To obtain, study and synthesize background information including the geology, hydrogeology and existing borehole data, for the purpose of improving the quality of assessment and preparing comprehensive hydrogeological reports,
- To carry out hydrogeological evaluation and geophysical investigations in the selected sites in order to determine potential for groundwater at project site.
- To prepare hydrogeological survey reports in conformity with the provisions of the rules and procedure outlined by the Central Ground Water Board (CGWB), by Assessment of water quality and potential infringement of National standards, Assessment of availability of groundwater and Impact of proposed activity on aquifer, water quality and other abstractors.

3. BACKGROUND INFORMATION

Location

The area is marked in the Survey of India, Topo Sheet No. 57-L/07. The area lies between the Latitudes of 12°22'24.13"N to 12°22'30.18"N and Longitudes of 78°17'02.95"E to 78°17'07.81"E on WGS datum-1984.

REGIONAL GEOLOGY OF KRISHNAGIRI DISTRICT-

The Colour Granite is fine to medium grained in size. Orthoclase feldspar and quartz are major constituents and Pyroxene, Biotite, Garnets and other mafic minerals are accessories. The petrological settings of the area are simple and not a complicated phenomena. There are no major minerals observed in the vicinity of the proposed quarry. A brief description of the regional Geology is discussed below.

This Colour granite is commercially called as “**Paradiso**” and Petrologically called as “**Pink Migmatite**” which is widely used for slabs, Tiles and Mounments after cutting and polishing. The Krishnagiri district is underlain by hard Crystalline rocks of Archaean age comprising of various rock types such as Gneiss, Charnockite, etc.,. The Gneissic type of Crystalline formation is found in the North and Northeastern part of the District. Shoolagiri, Hosur, mattur and soolamalai areas covered by Granitic Gneiss (Pink Migmatite).

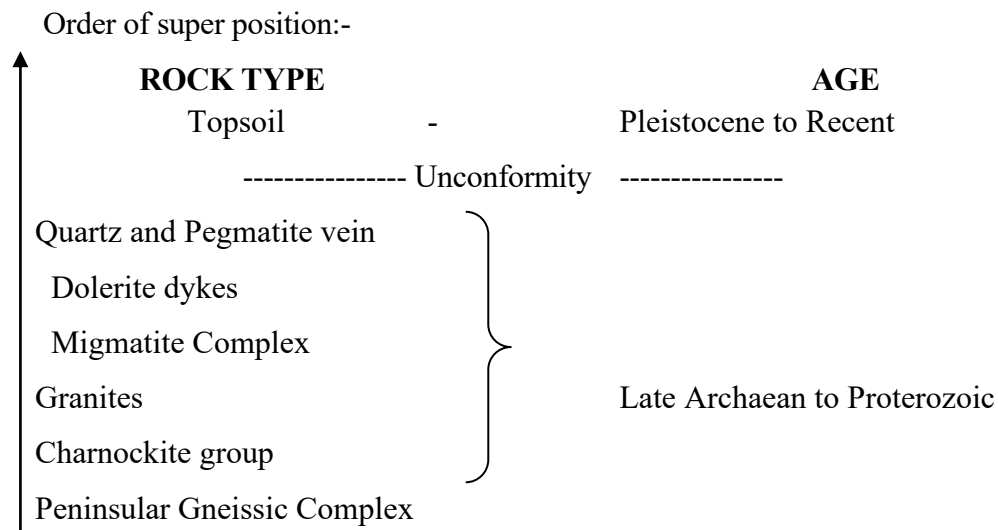
The Late Archean crust of Krishnagiri, Tamil Nadu, consists of tonalitic-trondhjemitic-granodioritic (TTG) gneisses with mafic and sedimentary enclaves, formed

between 2.7 and 2.5 Ga and metamorphosed at amphibolite facies in the north to granulite facies in the south close to 2.5 Ga. Migmatization occurred at all grades, and numerous small granite bodies were emplaced near the amphibolite-to-granulite facies horizon. This nearly syn-accretion meta-morphism affected the entire crust and left a chemically differentiated section later exposed by uplift and erosion. Such rocks that were formed at great depths during the Archaean age are now exposed at the surface of the earth as a result of the combined actions of wind, air, water, weathering and denudation over the past several million years.

The Colour granite has the characteristic pink rythmatic banding by which it can be identified even from a distance. These are seen to the central part and SE part of the district, more specifically in Rayakottai, Kaveripattinam, Jagadevi and Velampatti. These dimensional blocks are quarried to make a polished stone, slabs, monuments etc.,

STRUCTURAL SETTINGS OF KRISHNAGIRI:

The general geological sequence of the rock types in the area is:-



Geomorphology

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 488 m amsl. The plateau region along the western boundary and the northwestern part of the district has an average elevation of 914 m amsl. The GuthrayanDurg with an elevation of 1395 m amsl is the highest peak in the district.

Soils

Soils have been classified into Black soil, mixed soil, red loamy soil, gravelly and sandysoils. Red loamy and sandy soils are predominant in Hosurtaluk. Vast stretches of loam soils and black soils occur in Krishnagiri district.

4. GEOPHYSICAL INVESTIGATION METHODS

A variety of methods are available to assist in the assessment of geological sub-surface conditions. The main emphasis of the fieldwork undertaken was to determine the thickness and composition of the sub-surface formations and to identify water-bearing zones. This information was principally obtained in the field using, and vertical electrical soundings (VES). The VES probes the resistivity layering below the site of measurement. This method is described below.

Resistivity Method

Vertical electrical soundings (VES) were carried out to probe the condition of the sub-surface and to confirm the existence of deep groundwater. The VES investigates the resistivity layering below the site of measurement.

Basic Principles

The electrical properties of rocks in the upper part of the earth's crust are dependent upon the lithology, porosity, and the degree of pore space saturation and the salinity of the pore water. Saturated rocks have lower resistivity than unsaturated and dry rocks. The higher the porosity of the saturated rock, or the higher the salinity of the saturating fluids, the lower is the resistivity. The presence of clays and conductive minerals also reduces the resistivity of the rock.

The resistivity of earth materials can be studied by measuring the electrical potential distribution produced at the earth's surface by an electric current that is passed through the earth. Current is moved through the subsurface from one current electrode to the other and the potential difference is recorded as the current passes. From this information, resistivity values of various layers are acquired and layer thickness can be identified.

The apparent resistivity values determined are plotted as a log function versus the log of the spacing between the electrodes. These plotted curves identify thickness of layers. If there are multiple layers (more than 2), the acquired data is compared to a master curve to determine layer thickness.

This method is least influenced by lateral in-homogeneities and capable of providing higher depth of investigation.

The resistance R of a certain material is directly proportional to its length L and cross-sectional area A, expressed as:

$$R = R_s * L/A \text{ (in Ohm)}$$

Where R_s is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

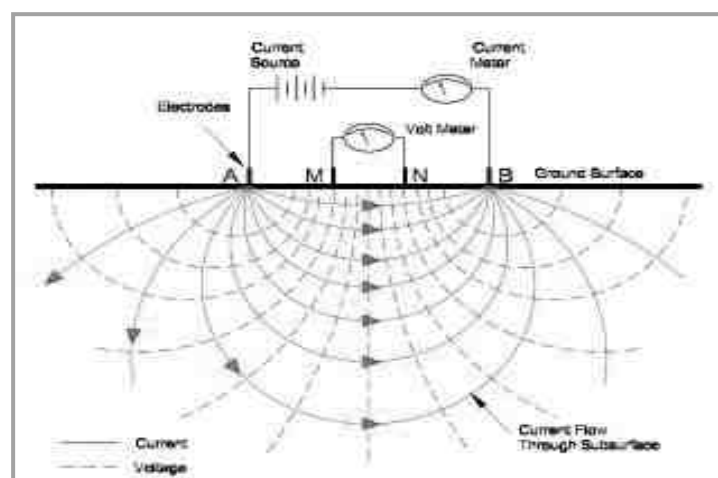
$$R = dV/I \text{ (Ohm)}$$

Where dV is the potential difference across the resistor and I is the electric current through the resistor. The specific resistivity may be determined by:

$$R_s = (A/L) * (dV/I) \text{ (in Ohm m)}$$

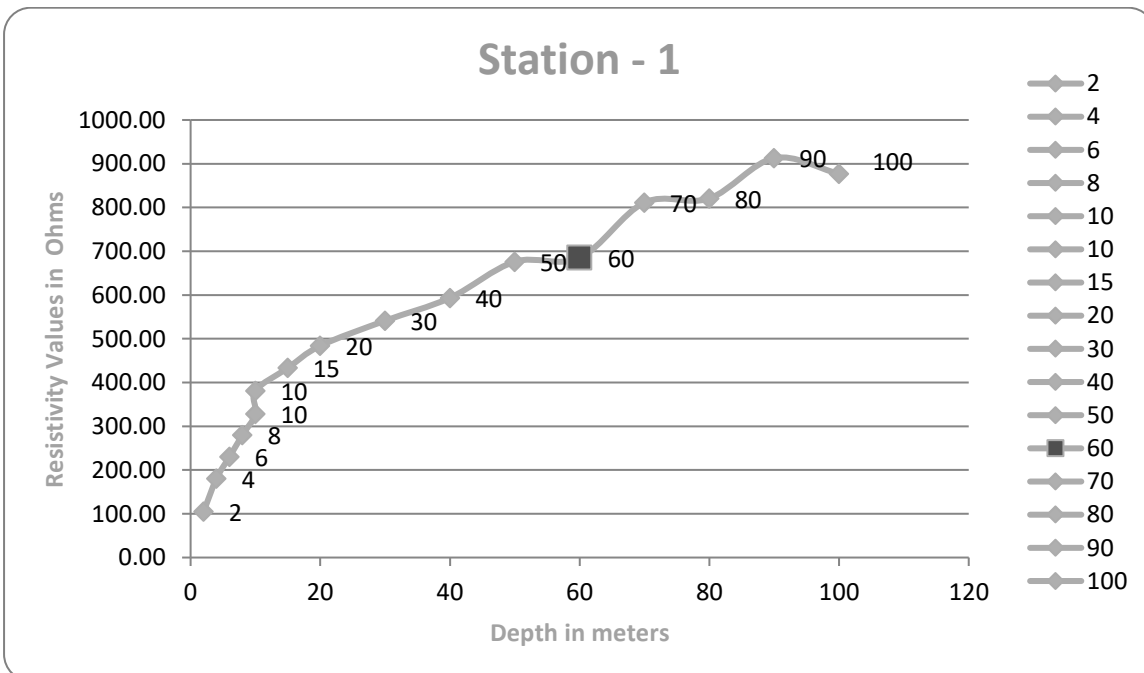
Vertical Electrical Sounding (VES)

When carrying out a resistivity sounding, current is led into the ground by means of two electrodes. With two other electrodes, situated near the center of the array, the potential field generated by the current is measured. From the observations of the current strength and the potential difference, and taking into account the electrode separations, the ground resistivity can be determined. During resistivity sounding, the separation between the electrodes is step-wise increased (known as a Schlumberger Array), thus causing the flow of current to penetrate greater depths. When plotting the observed resistivity values against depth on double logarithmic paper, a resistivity graph is formed, which depicts the variation of resistivity with depth. This graph can be interpreted with the aid of a computer, and the actual resistivity layering of the subsoil is obtained. The depths and resistivity values provide the hydro geologist with information on the geological layering and thus the occurrence of groundwater.



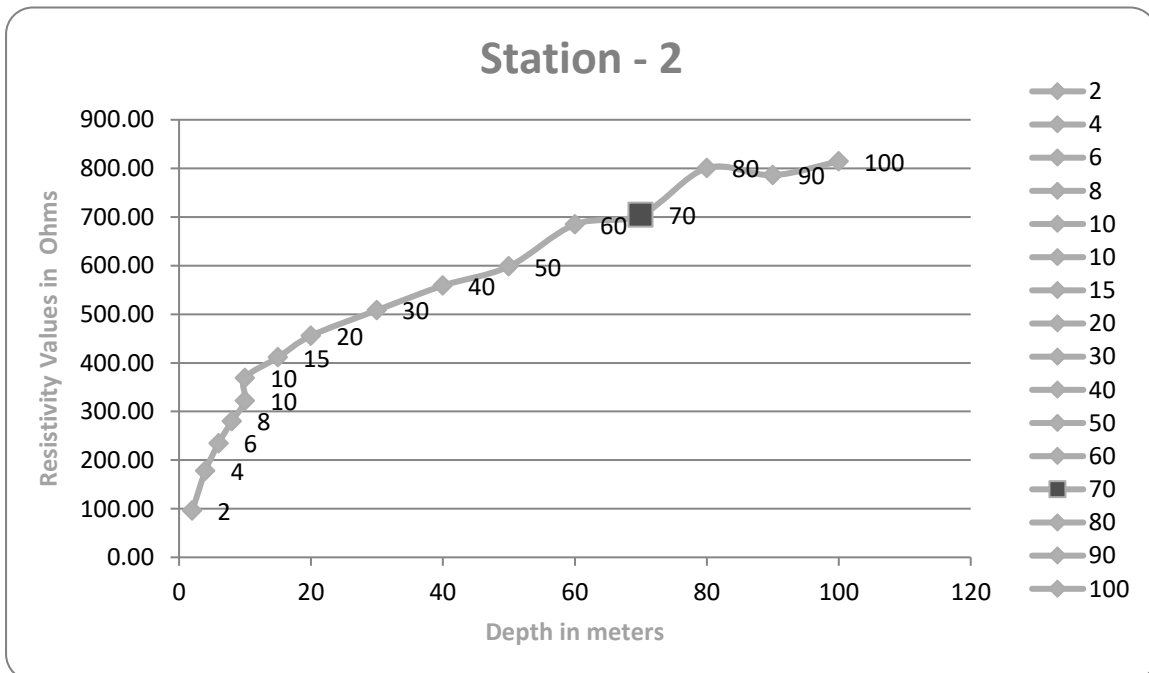
Vertical Electrical Sounding data's and Diagram

STATION-1					
GPS Coordinates - 12°22'24.13"N 78°17'02.95"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical factor (G)	Resistance Value in Ohms	Apparent Resistance in Ohms
1	2	1	4.71	22.25	104.80
2	4	1	23.55	7.67	180.63
3	6	1	54.95	4.19	230.24
4	8	1	98.91	2.83	279.92
5	10	1	155.45	2.11	328.00
6	10	5	23.55	16.19	381.27
7	15	5	62.80	6.90	433.32
8	20	5	117.75	4.11	483.95
9	30	5	274.75	1.97	541.26
10	40	5	494.55	1.20	593.46
11	50	5	777.15	0.87	676.12
12	60	5	1122.55	0.61	684.76
13	70	5	1530.75	0.53	811.30
14	80	5	2001.75	0.41	820.72
15	90	5	2535.55	0.36	912.80
16	100	5	3132.15	0.28	877.00



◆ A vertical electrical Sounding Graph diagram purple level is fracture zone.

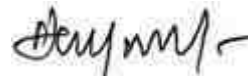
STATION-2					
GPS Coordinates - 12°22'30.18"N 78°17'07.81"E					
S.No	Ab/2(m)	Mn/2(m)	Geometrical factor (G)	Resistance Value in Ohms	Apparent Resistance in Ohms
1	2	1	4.71	20.35	95.85
2	4	1	23.55	7.55	177.80
3	6	1	54.95	4.27	234.64
4	8	1	98.91	2.83	279.92
5	10	1	155.45	2.07	321.78
6	10	5	23.55	15.67	369.03
7	15	5	62.80	6.55	411.34
8	20	5	117.75	3.87	455.69
9	30	5	274.75	1.85	508.29
10	40	5	494.55	1.13	558.84
11	50	5	777.15	0.77	598.41
12	60	5	1122.55	0.61	684.76
13	70	5	1530.75	0.46	704.15
14	80	5	2001.75	0.40	800.70
15	90	5	2535.55	0.31	786.02
16	100	5	3132.15	0.26	814.36



◆ A vertical electrical Sounding Graph diagram purple level is fracture zone.

5. Conclusions –

Based on the available information and the geophysical investigations it is concluded that the project area is considered to have medium groundwater potential. Productive aquifers are expected at depth of 75m to 80m where minor fractures are observed and shallow aquifers are expected above 60-65m BGL. The ultimate pit limit as per the approved mining plan depth is 24m which will have no impact on the Ground Water.



Dr. P. Thangaraju, M.Sc., Ph.D.,

Govt. Approved Hydro Geologist

M/s. Geo Exploration and Mining Solutions,

Regd. Office: No. 17, Advaita Ashram Road,

Alagapuram, Salem – 636 004, Tamil Nadu

Mobile: +91 - 94433 56539

E-Mail: ifogeoexploration@gmail.com



Sri Krishnaa Explosives

"Sri Vishnu Kiruba"
Plot No. 7, (Door No. 4/197-1)
Indane Nagar Extension,
Jagir Reddipatti, SALEM-636 302
Phone : 0427-2340736, 94432-44073
E-mail: srivishnumohan.2008@rediffmail.com

Prop. **G. MOHAN, B.E.,**

Date :

04.05.2023

To

Tvl. A.A. Enterprises,
No.93&94, Poombugar Nagar,
Valar Nagar, Uthangudi,
Madurai District.

Dear Sir,

Sub: Regarding Blasting Work using Explosives in your proposed quarry.
-oOo-

We are having Explosive Licence in Form LE-3 holding No. E/SC/TN/22/515(E47493) valid upto 31.03.2024 situated in S.F.No. 18/2 Kadiripuram Village, Harur Tk, Dharmapuri-Dt and our office functioning at above address. We are enacting Two Explosive Vans for transporting Explosives(Class-2) and Detonators(Class-3) separately from our magazine to your worksite and well experienced licensed blasters, Certified 2nd class Managers and shot-firers for safe blasting works.

We are willing to undertake blasting work on contract basis at your S.F.Nos. 609 A (P) (Pit - 5) over an extent of 1.54.00 Hectare in Nagojanahalli Village, Pochampalli Tk, Krishnagiri District, Tamil Nadu.

Thanking you,

Yours faithfully,

For Sri Krishnaa Explosives



Enclosure:

1. Our Explosive Licence copy

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

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (घ) देखिए।)
(See article 3(a) to (d) of Part 1 of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1,2,3,4,5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रखने के लिए अनुज्ञप्ति

Licence to possess : (c) for use, explosives of class 1, 2,3,4,5,6 or 7 in a maga

अनुज्ञप्ति सं. (Licence No.) : E/SC/TN/22/515(E47493)

वार्षिक फीस रुपए (Annual Fee Rs): 4800/-

1. Licence is hereby granted to

Shri G. MOHAN, Proprietor M/s.Sri Krishnaa Explosives (अधिभोगी / Occupier : Shri G. Mohan), Sri Vishnu Kiruba, Plot No.7,(Door No.4/197), Indane Nagar Extension, Jagir Reddipatti,Salem-636302, state: Tamilnadu., Town/Village - Salem, District-SALEM, State-Tamil Nadu, Pincode - 636302

को अनुज्ञप्ति अनुदत्त की जाती है।

2. अनुज्ञप्तिधारी की प्रस्थिति | Status of licensee : Individual

3. अनुज्ञप्ति निम्नलिखित प्रयोजनों के लिए विधिमान्य है। Possess for use of Nitrate Mixture, Safety Fuse, Detonating Fuse, Detonators, - के उपयोग के लिए
Licence is valid only for the following purpose.

4. अनुज्ञप्ति विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमान्य है।

Licence is valid for the following kinds and quantity of explosives: - (क) (a)

क्र Sr. No.	नाम और विवरण Name and Description	वर्ग और प्रभाग Class & Division	उप-प्रभाग Sub-division	मात्रा किसी एक समय में Quantity at any one time
1.	Nitrate Mixture	2,0	0	750 Kg.
2.	Safety Fuse	6,1	0	10000 Mtrs
3.	Detonating Fuse	6,2	0	25000 Mtrs
4.	Detonators	6,3	0	20000 Nos.

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा [अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञप्ति के लिए] 23 times as above.

(b) Quantity of explosives to be purchased in a calendar month[applicable for licence under article 3(b) and (c)]:

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञप्त परिसर की पुष्टि होती है। रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/515(E47493)
दिनांक (Dated) 17/10/2008
The licensed premises shall conform to the following drawing(s): .

6. अनुज्ञप्ति परिसर निम्नलिखित पते पर स्थित है। The licensed premises are situated at following address:
Survey No(s). 18/2 , ग्राम (Town/Village) : Kadripuram village,Harur Taluk पुलिस थाना (Police Station) : Bommidi
जिला (District) DHARMAPURI राज्य (State) Tamil Nadu पिनकोड (Pincode)
दूरभाष (Phone) ई.मेल (E-Mail) फैक्स (Fax)

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

8. अनुज्ञप्ति समय - समय पर यथासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपाबंधों के अधीन रहते हुए अनुदत्त की जाती है।
The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions, additional conditions and the following Annexures.

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

9. यह अनुज्ञप्ति तारीख 31 मार्च 2010 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 2010.

यह अनुज्ञप्ति, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VII के अधीन तथा उपबर्णित इस अनुज्ञप्ति की शर्तों का अधिक्रमण करने या यदि अनुज्ञप्त परिसर योजना या उससे संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिसंहत की जा सकती है, जहां वह लागू हो।

This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

तारीख | The Date - 17/10/2008

संयुक्त मुख्य विस्फोटक निबंधक | Joint Chief Controller of Explosives

Sd/-

Amendments :

- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 06/01/2011
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 13/06/2011
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 05/10/2011
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 25/04/2014

Transfers :

- Change in Licensee Name/Address/Status dated : 15/04/2014

नवीनीकरण के पृष्ठांकन के लिए स्थान
Space for Endorsement of Renewal

नवीकरण की तारीख Date of Renewal	समाप्ति की तारीख Date of Expiry	अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प Signature of licensing authority and stamp
25/01/2019	31/03/2024	<p>Controller of Explosives, Vellore</p> <p>बिस्फोटक नियंत्रक, वेल्लूर Controller of Explosives, Vellore</p>

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

கிராம நிர்வாக அலுவலர் காவல்

கி.ஆர்.கே.சி. பள்ளம், போச்சிப்பாளையம்

அட்டை, சா. நிர்வாக அலுவலர் காவல்

அட்டை கிராம ஹவுஸ் 609 A சா. அட்டை

பரப்பு 35.17.50 சீர்தர உட்கட்டி தர்ப்பு

உட்கட்டி 609 A (Part) (Bit - 5) பரப்பு

1.54.0 அட்டை பரப்பளவு 300 m கி.மீ.மீ.மீ.

சீர்தர உட்கட்டி, சீர்தர உட்கட்டி, பரப்பளவு

சீர்தர உட்கட்டி சீர்தர உட்கட்டி.


Village Administrative Officer
04, NAGOJANAHALLI
Pochampalli Taluk.

**TOPOGRAPHICAL VIEW OF NAGOJANAHALLI COLOUR GRANITE
QUARRY LEASE APPLIED AREA**



NAME OF THE APPLICANT WITH ADDRESS

Name : **Tvl. A.A. Enterprises,**
Managing Partner, S. Ramasubramaniam,
Address : D. No. 93 & 94, Poombugar Nagar, Valar Nagar,
Uthangudi,
Madurai District,
Tamil Nadu - 625 107.

LOCATION OF THE AREA:

Extent : 1.54.0 Hectares
S.F.No. : 609A(Part) (Bit-5),
Village : Nagojanahalli
Taluk : Pochampalli
District : Krishnagiri

Signature of the applicant
Tvl. A.A. Enterprises,

(S. Ramasubramaniam)
Managing Partner


Village Administrative Officer
(Village) NAGOJANAHALLI
Pochampalli Taluk.



DR.JAYANTHLM, I.F.S.,
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY – TAMIL NADU

3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet,
Chennai-15.
Phone No. 044-24359973
Fax No. 044-24359975

ENVIRONMENTAL CLEARANCE

Lr. No.SEIAA-TN/F.No.7375/1(a)/EC.No: 4349/2020 dated: 12.09.2020

To

Thiru. P. Gandhi
No. 3/483, Jainoor Village
Narichettihalli Post
Krishnagiri Taluk
Krishnagiri District - 635 204

Sir/Madam,

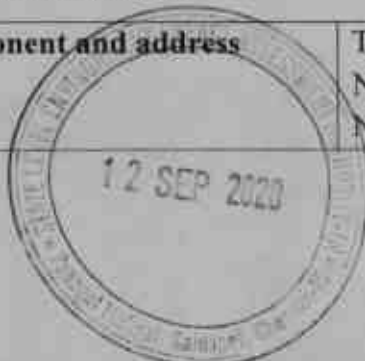
Sub: SEIAA-TN – Proposed for the Grey Granite Quarry lease over an extent of 1.97.35 ha in S.F.Nos. 745/1A, 745/2, 770/1B2 and 771/2 of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamilnadu by Thiru. P. Gandhi - issue of Environmental Clearance – Reg.

- Ref:**
1. Online proposal No.SIA/TN/MIN/130212/2019, Dated: 07.12.2019.
 2. Your Application for Environmental Clearance dated: 10.01.2020.
 3. Minutes of the 170th SEAC meeting held on 13.08.2020
 4. Minutes of the 394th SEIAA meeting held on 10.09.2020

Details of Minor Mineral Activity:-

This has reference to your application second cited. The proposal is for obtaining Environmental Clearance for mining/quarrying of minor minerals based on the particulars furnished in your application as shown below.

1	Name of Project Proponent and address	Thiru. P. Gandhi No. 3/483, Jainoor Village Narichettihalli Post
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		Krishnagiri Taluk Krishnagiri District - 635 204
2	Location of the Proposed Activity	
	Survey Number	745/1A, 745/2, 770/1B2 and 771/2
	Latitude and Longitude	12°22'44.58"N to 12°22'50.55"N 78°16'48.34"E to 78°16'56.28"E
	Village	Nagojanahalli
	Taluk	Pochampalli
	District	Krishnagiri
3	Proposed Activity	
	i. Minor mineral	Grey Granite
	ii. Mining Lease Area	1.97.35 Ha
	iii. Approved quantity	12003m ³ of Grey Granite
	iv. Depth of Mining	23m(1M Top soil+2M Weathered Rock +20M Grey Granite)
	v. Type of mining	Opencast Mechanized method
	vi. Category(B1/B2)	B2
	vii. Precise area communication approved by Industries (MM.2) Department with date	Lr.No.10265/MME.2/2019-1 dated 26.09.2019
	viii. Mining plan approval by Director of Geology and Mining, Chennai	Rc.No.5233/MM4/2019, dated 15.11.2019
	ix. Mining period	5 Years
4	Whether Project area attracts any General conditions specified in the EIA notification, 2006 as amended:-	Not attracted. Affidavit furnished.
5	Man Power requirement per day:	32 Employees
6	Utilities	
	i. Source of Water :	Water Vendors & Private tankers
	ii. Quantity of Water Requirement in KLD:	6.13KLD

12 SEP 2020

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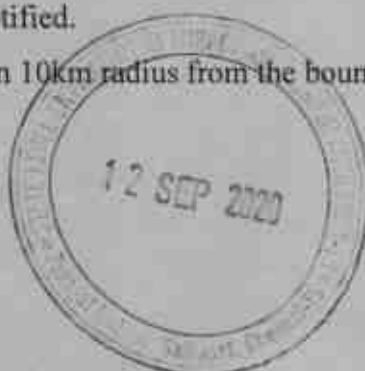
	a. Domestic & Drinking purpose b. Green Belt & Dust Suppression	1.0KLD Water Vendors 4.50KLD & 0.63KLD Existing Bore well
	iii. Power Requirement: a. Domestic Purpose b. Industrial purpose	TNEB 54684 liters of HSD
7	Cost i. Project Cost ii. EMP Cost	Rs. 265.23 in lakhs Rs. 3.80 Lakhs
8	Validity: This Environmental Clearance is granted for the production of 12003m ³ of Grey Granite for the period of 5 Years from the date of execution of the mining lease.	

The Proponent has furnished affidavit in Hundred Rupees stamp paper attested by the Notary stating that

I, Thiru. P. Gandhi No. 3/483, Jainoor Village Narichettihalli Post Krishnagiri Taluk Krishnagiri District - 635 204, solemnly declare and sincerely affirm that:

I have applied for getting Environmental Clearance to SEIAA, Tamil Nadu for mining lease for mining of Grey Granite Quarry lease over an extent of 1.97.35 ha in S.F.Nos. 745/1A, 745/2, 770/1B2 and 771/2 of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamilnadu.

1. I swear to state and confirm that within 10km area of the mine site, I have applied for Environmental Clearance, none of the following is situated.
 - a. Protected areas notified under the Wild Life (Protection) Act, 1972.
 - b. Critically polluted areas as notified by the Central Pollution Control Board constituted under Water (Prevention and Control of Pollution) Act, 1974.
 - c. Eco - Sensitive areas as notified.
 - d. Interstate boundaries within 10km radius from the boundary of the proposed site.



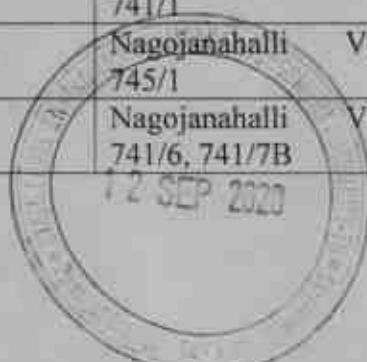
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2. I will complete the following Corporate Environment responsibility (CER) activities before commencement of the quarrying activities.

CER Activity	Project Cost (Rs. In Lakhs)	CER Cost 2.0% of project cost (Rs. In Lakhs)
Development and plantation will be carried out in the Nagojanahalli Village road and providing Solar Lamp facilities to the village.	265.23	5.30
Total cost Allocation	265.23	5.30

3. The total area of following quarries located within 500m radius from the periphery of our quarry site details as shown below:

S.No	Name of the Applicant/Lessee	Name of the Village & S.F.No.	Extent in Ha	Lease period
a. Details of Quarries				
I. Rule 39 Quarries				
1.	Thiru A. Anbaruvi	Nagojanahalli Village 774 (part)	2.02.5	16.05.1995-15.05.2005
2.	Tmt A. Latha	Nagojanahalli Village 774 (part)	0.81.0	
3.	C. Krishnappa Gounder	Nagojanahalli Village 774 (part)	2.02.5	
b. Existing Patta Quarries				
1.	D. Dhanapal	Nagojanahalli Village 741/2, 3B, 743/2	1.68.0	13.05.2015 - 12.05.2035
c. Abandoned Quarries				
1.	Thiru B. Venkatesh	Nagojanahalli Village 609/A (part)	0.81.0	19.05.1995-18.05.2005
2.	M/s. Vishal Enterprise	Nagojanahalli Village 769/1A etc	1.13.5	25.11.1993-24.11.2003
3.	Nova Granites	Nagojanahalli Village 769/4A, 5	0.42.5	17.02.1995-25.06.2005
4.	Venugopal Anitha Granites	Nagojanahalli Village 741/4	0.34.0	26.06.1995-25.06.2005
5.	Roshan Granites	Nagojanahalli Village 775, 777	0.61.0	16.04.1995-04.04.2005
6.	S. Ramanathan	Nagojanahalli Village 741/1	0.39.0	05.04.1995-04.04.2005
7.	Roshan Granites	Nagojanahalli Village 745/1	0.86.0	05.04.1995-04.04.2005
8.	Deepa Traders	Nagojanahalli Village 741/6, 741/7B	0.30.5	09.05.1999-08.05.2005



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d. Present proposed Quarries					
1.	P. Ganthi	Nagojanahalli Village 745/1A etc		1.97.35	Proposed

4. There will not be hindrance or disturbance to the people living no enrouted / nearby our quarry site while transporting the mineral our material and due to quarrying activities.
5. There is no approved habitation within 300m radius from the periphery of our quarry.
6. I swear that afforestation will be carried out during the course of mining operation and maintained.
7. The required insurance will be taken in the name of the labourers working in my quarry site.
8. Approach road belongs to us only and no other private patta roads encountered.
9. I will not engage any child labour in my quarry site and I aware that engaging child labour is punishable under the law.
10. All types of safety / protective equipments will be provided to all the labourers working in my quarry.
11. There is no permanent structures, temples, etc., are located within 500m radius from the periphery of my quarry.

I ensure to do all the social and Environment commitment as mentioned in the Mining Plan to the best of my knowledge.

Details of 500M radius Proposed quarry:

The Project Proponent has submitted a copy of the letter obtained from the Assistant Director, Additional charge, Department of Geology & Mining, Krishnagiri District in his letter Re.No.614/2019/Mines dated: 15.05.2020 has stated that the details of other quarries (Proposed / Existing / Abandoned Quarries) within a radius 500m from the boundary of the proposed quarry site as follows:

S.No	Name of the Applicant/Lessee	Name of the Village & S.F.No	Extent in Ha	Lease period
a. Details of Quarries				
I. Rule 39 Quarries				
1.	Thiru A. Anbaruvi	Nagojanahalli Village 774 (part)	2.02.5	16.05.1995- 15.05.2005
2.	Tmt A. Latha	Nagojanahalli Village 774 (part)	0.81.0	
3.	C. Krishnappa Gounder	Nagojanahalli Village 774 (part)	2.02.5	



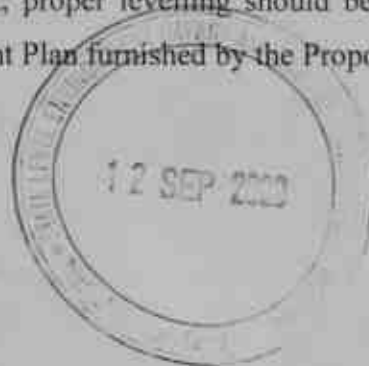

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b. Existing Patta Quarries					
1.	D. Dhanapal	Nagojanahalli 741/2, 3B, 743/2	Village	1.68.0	13.05.2015 - 12.05.2035
c. Abandoned Quarries					
1.	Thiru B. Venkatesh	Nagojanahalli 609/A (part)	Village	0.81.0	19.05.1995- 18.05.2005
2.	M/s. Vishal Enterprise	Nagojanahalli 769/1A etc	Village	1.13.5	25.11.1993- 24.11.2003
3.	Nova Granites	Nagojanahalli 769/4A, 5	Village	0.42.5	17.02.1995- 25.06.2005
4.	Venugopal Anitha Granites	Nagojanahalli 741/4	Village	0.34.0	26.06.1995- 25.06.2005
5.	Roshan Granites	Nagojanahalli 775, 777	Village	0.61.0	16.04.1995- 04.04.2005
6.	S. Ramanathan	Nagojanahalli 741/1	Village	0.39.0	05.04.1995- 04.04.2005
7.	Roshan Granites	Nagojanahalli 745/1	Village	0.86.0	05.04.1995- 04.04.2005
8.	Deepa Traders	Nagojanahalli 741/6, 741/7B	Village	0.30.5	09.05.1995- 08.05.2005
d. Present proposed Quarries					
1.	P. Ganthi	Nagojanahalli 745/1A etc	Village	1.97.35	Proposed
Details of Applied Area					
S.No	Name of the Applicant/Lessee	Name of the Village & S.F.No	Extent in Ha	Lease period	
Nil					

Appraisal by SEAC:-

The project proposal was placed in the 170th SEAC meeting held on 13.08.2020. Based on the presentation made by the proponent and the documents furnished, the SEAC has recommended the proposal to SEIAA for issue of Environmental Clearance subject to the following conditions in addition to the normal conditions:

1. Groundwater level and quality should be monitored once in six months in few wells around the quarry and the record should be maintained and annual report should be submitted to the TNPCB.
2. After mining is completed, proper levelling should be done by the Project proponent & Environmental Management Plan furnished by the Proponent should be strictly followed.




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3. The proponent should erect fencing all around the boundary of the proposed area with gates as per the conditions and shall furnish the photographs/map showing the same before obtaining the CTO from TNPCB.
4. The Project proponent shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which might have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
5. Proper barrier for reducing the Noise level due to transport and to combat the dust pollution shall be established like providing Green Belt along the boundary of the quarrying site, etc. and to prevent dust pollution, suitable working methodology needs to be adopted taking wind direction into consideration.
6. The operation of the quarry should not affect the agriculture activities & water bodies near the project site.
7. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
8. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
9. The proponent shall develop adequate green belt with native species on the periphery of the mine lease area before commencement of the mining activity, in consultation with DFO of the concern district/agriculture university.
10. 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.
11. The recommendation for the issue of Environmental Clearance is subject to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A No.186 of 2016 (M.A.No.350/2016) and O.A.No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No. 758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No.12/2017 & M.A. No. 843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No. 981 /2016, M.A.No.982/2016 & M.A.No.384/2017).



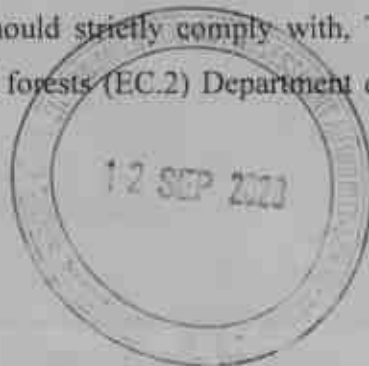
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12. Prior clearance from Forestry & Wild Life including clearance from committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site attracts the NBWL clearance
13. To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of mining operation.
14. The mine closure plan submitted by the project proponent shall be strictly followed after the lapse of the mine.
15. The amount of Rs.5,30,500 in lakhs (2% of the total project cost) shall be utilized as CER activities to carry out the development of the Toilet Facilities & Drinking Water Facilities for Nagojanahalli Village Government School as reported before obtaining the CTO from TNPCB.
16. The project proponent shall strictly follow the conditions stipulated in the precisions area communication issued by the Industries Department vide Lr.No.10265/MME.2/2019-1 dated 26.09.2019.
17. The project proponent shall strictly follow the conditions stipulated in the mining plan approval issued by the Director of Geology and Mining, Chennai vide Rc.No.5233/MM4/2019, dated 15.11.2019.
18. The project proponent shall strictly follow the conditions stipulated in the DFO, Krishnagiri District vide Rc.No.1654/2019, dated 02.07.2019.

Discussion by SEIAA and the Remarks:-

The proposal was placed before the SEIAA in its 394th Meeting held on 10.09.2020 After detailed discussion the Authority decided to grant Environmental Clearance subject to the conditions as recommended by the SEAC and subject to General conditions:

1. All the condition imposed by the precise area communication. All the condition imposed by the Director of Geology and Mining Rc.No.5233/MM4/2019, dated 15.11.2019 should be strictly followed should be strictly followed.
2. The EMP Cost shall be deposited in a nationalized bank by opening separate account and head wise expense statement shall be furnished to TNPCB with a copy to SEIAA annually.
3. 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



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use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986.

4. If there is any change in the production or lease area application for amendment has to be submitted to SEIAA for further approval.
5. A detailed post-COVID health management plan for workers as per ICMR and MHA guidelines or the State Govt. guideline may be followed.

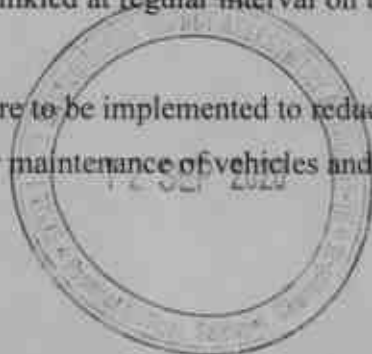
Part-A: Conditions to be Complied before commencing mining operations:-

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
 - I. The project has been accorded Environmental Clearance.
 - II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
 - III. Environmental Clearance may also be seen on the website of the SEIAA.
 - IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.
2. Mining activity should be reviewed by the District Collector after three years and decide for further extension.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.



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SEIAA-TN

9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 50mts. from any civil structure shall be kept from the periphery of any excavation area.
14. 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.
15. 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.
16. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
17. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
18. 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.
19. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF& CC, GoI on 16.11.2009.
20. 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
21. The following measures are to be implemented to reduce Noise Pollution
 - i. Proper and regular maintenance of vehicles and other equipment



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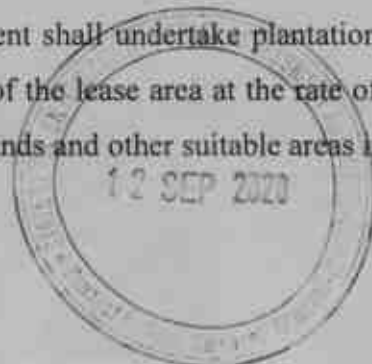
- ii. Limiting time exposure of workers to excessive noise.
 - iii. The workers employed shall be provided with protection equipment and earmuffs etc.
 - iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
 - v. All noise generating machinery the compressor, generator to be enclosed in acoustic enclosure so as to reduce noise in working area.
22. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoEF& CC, Gol to control noise to the prescribed levels.
23. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
24. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
25. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
26. 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.
27. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous& other wastes (Management, and Trans Boundary Movement) Rules, 2016 and its amendments thereof to the recyclers authorized by TNPCB.
28. 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.
29. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
30. 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



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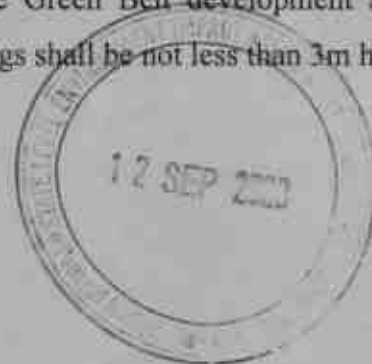
discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.

31. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
32. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
33. 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.
34. It shall be ensured that the total extent of nearby quarries(existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 5 hectares within the mining lease period of this application.
35. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 300m radius from the periphery of the quarry site.
36. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
37. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
38. Bunds to be provided at the boundary of the project site.
39. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.



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40. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
41. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
42. The Project Proponent shall provide solar lighting system to the nearby villages.
43. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
44. Safety equipments to be provided to all the employees.
45. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
46. The Assistant/Deputy Director, Department of Geology & mining shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
47. 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.
48. 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.
49. 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.
50. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
51. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
52. The Proponent shall ensure that the project activity including blasting, mining transportation etc should in no way have adverse impact to the other forests, such as reserve forests and social forests, tree plantation and bio diversity, surrounding water bodies etc.
53. The proponent shall provide Green Belt development at the rate of not less than 400 trees/Hectare. The tree saplings shall be not less than 3m height.

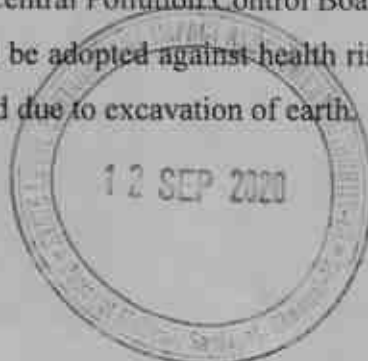


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54. The fugitive emissions should be monitored during the mining activity and should be reported to TNPCB once in a month and the operation of the quarry should no way impact the agriculture activity & water bodies near the project site.
55. All the commitment made by the project proponent in the proposal shall be strictly followed.
56. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
57. The Project proponent has to strictly comply the outcome/direction of the Hon'ble NGT, Principle Bench, New Delhi in the O.A No.186 of 2016 (M.A.No.350/2016), O.A. No.200/2016, O.A.No.580/2016 (M.A.No.1182/2016), O.A.No.102/2017, 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), 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).

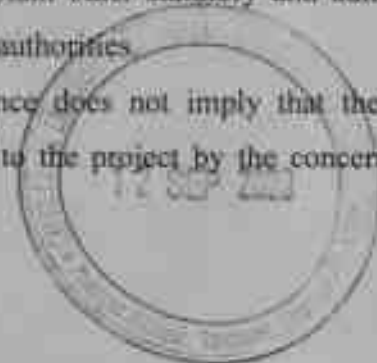
Part B: General Conditions:

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
2. The Proponent shall obtain the Consent from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.



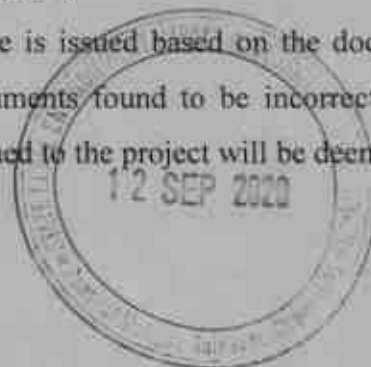
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7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
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



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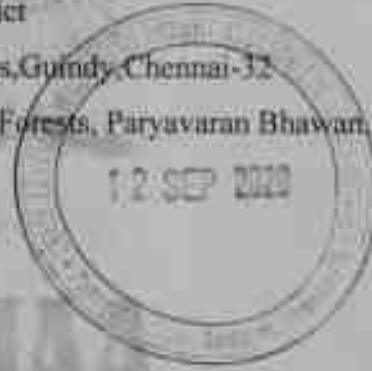
- would be considering the project on merits and be taking decisions independently of the Environmental Clearance
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
 19. The SEIAA, Tamil Nadu may cancel the Environmental Clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this Environmental Clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the Environmental Clearance.
 20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
 21. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act, 2002 and Biological diversity Rules, 2004 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
 22. Any other conditions stipulated by other Statutory/Government authorities shall be complied.
 23. Any appeal against this Environmental Clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
 24. The Environmental Clearance is issued based on the documents furnished by the project proponent. In case any documents found to be incorrect/not in order at a later date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.



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Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Industries Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai - 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, TNPC Board, 76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Krishnagiri District
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. E1 Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Spare.



SEIAA
TN



Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment
Authority(SEIAA), Tamil Nadu)

To,

The Owner
DHANAPAL
D.Dhanapal,
7/395, Melbatchapet,
903 -636903

S/o. Duraisamy Udayar,
Harur Post and Taluk , Dharmapuri-636

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/TN/MIN/194413/2021 dated 23 Jan 2021. The particulars of the environmental clearance granted to the project are as below.

- | | |
|--|--|
| 1. EC Identification No. | EC21B001TN157939 |
| 2. File No. | 8266 |
| 3. Project Type | New |
| 4. Category | B2 |
| 5. Project/Activity including Schedule No. | 1(a) Mining of minerals |
| 6. Name of Project | Thiru.D Dhanapal Grey Granite (Paradiso) Quarry over a total extent of 1.68.0 Ha |
| 7. Name of Company/Organization | DHANAPAL |
| 8. Location of Project | Tamil Nadu |
| 9. TOR Date | N/A |

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 10/11/2021

(e-signed)
Tmt.P.RAJESWARI,IFS
Member Secretary
SEIAA - (Tamil Nadu)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

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STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY- TAMILNADU
3rdFloor, Panagal Maaligai, No.1, Jeemis Road, Saidapet, Chennai-15.

ENVIRONMENTAL CLEARANCE

Lr. No. SEIAA-TN/F.No.8266/1(a)/EC.No:4874/2021 dated: 30.10.2021

Sub: SEIAA-TN – Proposed Grey Granite quarry lease area over an extent 1.68.0Ha at S.F.Nos. 741/8B, 742/2 & 743/2 of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu by Thiru.D.Dhanapal –issue of Environmental Clearance – Regarding.

- Ref:**
1. Online Proposal No. SIA/TN/MIN/194413/2021, Dated: 23.01.2021.
 2. Your Application for Environmental Clearance dated: 25.01.2021.
 3. Minutes of the 232th meeting of SEAC held on 15.09.2021.
 4. Minutes of the 470th SEIAA meeting held on 18.10.2021.

Details of Minor Mineral Activity:-

This has reference to your application second cited. The proposal is for obtaining Environmental Clearance for mining/quarrying of minor minerals based on the particulars furnished in your application as shown below.

1	Name of Project Proponent and address	Thiru.D.Dhanapal S/o.Duraisamy Udayar 7/395, Melbatchapet Harur Post & Taluk Dharmapuri District - 636903
2	Location of the Proposed Activity	
	Survey Number	741/8B, 742/2 & 743/2
	Latitude and Longitude	12°22'38.24" N to 12°22'36.58" N 78°16'58.85" E to 78°16'51.85" E
	Village	Nagojanahalli


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	Taluk	Pochampalli
	District	Krishnagiri
3	Proposed Activity	
	i. Minor mineral	Grey Granite
	ii. Mining Lease Area	1.68.0Ha
	iii. Approved quantity	ROM: 94893 cu.m Recovery 35% - 29866 cu.m of Grey Granite Granite waste: 61679 cu.m
	iv. Depth of Mining	23m
	v. Type of mining	Opencast semi Mechanized Mining Method
	vi. Category(B1/B2)	B2
	vii. Precise area communication approved by the Additional Chief Secretary to Government, Industries Department with date	G.o.(3D).10 Industries (MME.2) Department Dated: 01.04.2015
	viii. Mining Plan approved by the Director Directorate of Geology and Mining with date	Re No.6254/MM4/2020, Dated: 28.11.2020
	ix. Scheme of Mining period	5 Years
4	Whether Project area attracts any General conditions specified in the EIA notification, 2006 as amended:-	Not attracted. Affidavit furnished.
5	Man Power requirement per day:	24 Nos
6	Utilities	
	i. Source of Water :	Existing Bore well and Water Vendors
	ii. Quantity of Water Requirement in KLD:	3.5 KLD
	a. Domestic & Drinking purpose	1.5KLD
	b. Green Belt & Dust Suppression	1.0KLD


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		1.0 KLD
	iii. Power Requirement: a. Domestic Purposes	TNEB
7	Cost i. Project Cost ii. EMP Cost iii. CER Cost	Rs. 72.50 Lakhs Rs. 3.50 Lakhs Rs. 1.52 Lakhs
8	Validity: This Environmental Clearance is granted for the production of ROM: 94893 cu.m Recovery 35% - 29866 cu.m of Grey Granite Granite waste: 61679 cu.m for the period of 5 Years for the first schme of mining plan period from 2020-21 to 2021-25 up to 12.05.2025.	

Affidavit

The Proponent has furnished affidavit in One Hundred Rupees stamp paper attested by the Notary stating that

I, Thiru.D.Dhanapal, S/o.Duraisamy Udayar 7/395, Melbatchapet Harur Post & Taluk Dharmapuri District - 636903, solemnly declare and sincerely affirm that:

I have applied for getting prior Environmental Clearance to SEIAA, Tamil Nadu for the Proposed Grey Granite quarry lease area over an extent 1.68.0Ha at S.F.Nos. 741/8B, 742/2 & 743/2 of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District, Tamil Nadu.

1. I swear to state and confirm that within 10km area of the mine site, I have applied for Environmental Clearance, none of the following in situated.
 - a. Protected areas notified under the Wild Life (Protection) Act, 1972.
 - b. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and control of pollution) Act, 1974.
 - c. Eco – sensitive areas as notified.
 - d. Interstate boundaries and international boundaries within 10km radius from the boundary of the proposed side.
2. I will complete the following corporate environment responsibility (CER) activities before commencement of the quarrying activities.


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CER Activity	Project Cost (Rs.Lakhs)	CER Cost 2.0% of project cost (Rs.Lakhs)
1. Developing the solar facility to the pochampalli Dispensary etc	76.00	1.52
2. If we are instructed by PWD/Competent bodies to desilt the water bodies nearby we assure to spend out CER cost for desilting strengthening the bunds of the nearby water bodies.		
Total cost Allocation	76.00	1.52

3. The following quarries are located within the radius of 500m from the periphery of my quarry.

S.No.	Name and address of the Lessee	S.F.No. Village	Taluk &	Extent (in Hects)	Lease period	Classification of land
Details of Existing quarries:						
1	Thiru D. Dhanapal, 7/395, Harur Harur Taluk Dharmapuri District	741/8B, 742/2, 743/2 Nagojanahalli Pochampalli		1.68.0	13.05.2015 – 12.05.2035	Instant proposal
2	Thiru. P. Gandhi S/o. Paramasivam No. 3/483, Jainoor Village Narichettihalli Post Krishnagiri Taluk Krishnagiri District	745/1A, 745/2, 770/1B2 and 771/2 Nagojanahalli Pochampalli Krishnagiri		1.97.35	31.10.2020 – 30.10.2020	
Total				3.65.35		
Details of Lease Expired Quarries:						
1	Thiru A. Anbaruvi Chennai	774 Nagojanahalli Pochampalli Krishnagiri	Part	2.02.5 govt land	16.05.1995- 15.05.2005 (Rule 39 under Court Order)	06.01.2017
2	Tmt A. Iatha Chennai	609/A Nagojanahalli Pochampalli Krishnagiri	part	0.81.0 Govt land	06.05.1995 – 05.05.2005 (Rule 39 under Court Order)	19.12.2016
3	Thiru Krishnappa Krishnagiri	609/A Nagojanahalli	part	2.02.5 govt	09.05.1995- 08.05.2005	10.01.2017


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		Pochampalli Krishnagiri	land	(Rule 39 under Court Order)	
Details of Abandoned / Old Quarries:					
1	Thiru B. Venkatesh	609/A (P) Nagojanahalli Pochampalli Krishnagiri	0.81.0 Govt land		19.05.1995 18.05.2002 (Rule 39)
2	M/s. Vishal Enterprise	769/A (P) Nagojanahalli Pochampalli Krishnagiri	1.13.5 Govt land		25.11.1993 24.05.2003
3	Nova Granite Corporation	769/4A Nagojanahalli Pochampalli Krishnagiri	0.42.5 patta land		17.02.1995- 16.02.2005
4	Venugopal Anitha	741/4 Nagojanahalli Pochampalli Krishnagiri	0.34.0 patta land		26.06.1995 25.06.2005
5	Roshan Granite	775, 777 Nagojanahalli Pochampalli Krishnagiri	0.61.0 patta land		16.04.1995 15.04.2005
6	S. Ramanathan	741/1(P) Nagojanahalli Pochampalli Krishnagiri	0.39.0 patta land		05.04.1995 04.04.2005
7	Roshan Granites	745/1 Nagojanahalli Pochampalli Krishnagiri	0.86.0 patta land		05.04.1995 04.05.2005
8	Deepa Traders	741/6, 741/7B, Nagojanahalli Pochampalli Krishnagiri	0.30.5 patta land		09.05.1995- 08.05.2005
Total			4.87.5		
Details of Proposed quarries:					
Nil					
Details of applied area:					
Nil					

4. There will not be hindrance or disturbance to the people living during quarrying and transportation.
5. There is No approved habitation within 500m radius from the periphery of my quarry.
6. I swear that afforestation will be carried out during the course of quarrying operation and maintained.
7. The required insurance will be taken in the name of the labourers working in my quarry site.
8. The existing road from the main road to the quarry is in good condition and the same will be maintained and utilized for transportation of Rough Stone.

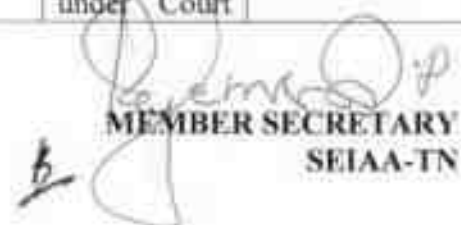

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9. I will not engage any child labour in my quarry site and I aware that engaging child labour is punishable under the law.
10. All types of safety / protective equipments will be provided to all the labourers working in my quarry.
11. No permanent structures, temples, etc., are located within 300m radius from the periphery of my quarry.
- I ensure to do all the social and Environment commitment as mentioned in the Mining Plan to the best of my knowledge.

Details of Quarries located within 500M radius from the proposed quarry:

The Project Proponent has submitted a copy of the letter obtained from the Assistant Director (Additional Charge) Department of Geology & Mining, Krishnagiri District in his letter Rc.No.1215/2020/Mines, Dated: 28.12.2020 has stated that the details of other quarries within a radius 500m from the boundary of the proposed quarry site as follows:

S.No.	Name and address of the Lessee	S.F.No. Village	Taluk &	Extent (in Hects)	Lease period	Classification of land
Details of Existing quarries:						
1	Thiru D. Dhanapal, 7/395, Harur Harur Taluk Dharmapuri District	741/8B, 742/2, 743/2 Nagojanahalli Pochampalli		1.68.0	13.05.2015 – 12.05.2035	Instant proposal
2	Thiru. P. Gandhi S/o. Paramasivam No. 3/483, Jainoor Village Narichettihalli Post Krishnagiri Taluk Krishnagiri District	745/1A, 745/2, 770/1B2 and 771/2 Nagojanahalli Pochampalli Krishnagiri		1.97.35	31.10.2020 – 30.10.2020	
Total				3.65.35		
Details of Lease Expired Quarries:						
1	Thiru A. Anbaruvi Chennai	774 Nagojanahalli Pochampalli Krishnagiri	Part	2.02.5 govt land	16.05.1995- 15.05.2005 (Rule 39 under Court Order)	06.01.2017
2	Tmt A. latha Chennai	609/A Nagojanahalli Pochampalli Krishnagiri	part	0.81.0 Govt land	06.05.1995 – 05.05.2005 (Rule 39 under Court	19.12.2016


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				Order)	
3	Thiru Krishnappa Krishnagiri	609/A part Nagojanahalli Pochampalli Krishnagiri	2.02.5 govt land	09.05.1995- 08.05.2005 (Rule 39 under Court Order)	10.01.2017
Details of Abandoned / Old Quarries:					
1	Thiru B. Venkatesh	609/A (P) Nagojanahalli Pochampalli Krishnagiri	0.81.0 Govt land	19.05.1995 18.05.2002 (Rule 39)	
2	M/s. Vishal Enterprise	769/A (P) Nagojanahalli Pochampalli Krishnagiri	1.13.5 Govt land	25.11.1993 24.05.2003	-
3	Nova Granite Corporation	769/4A Nagojanahalli Pochampalli Krishnagiri	0.42.5 patta land	17.02.1995- 16.02.2005	
4	Venugopal Anitha	741/4 Nagojanahalli Pochampalli Krishnagiri	0.34.0 patta land	26.06.1995 25.06.2005	-
5	Roshan Granite	775, 777 Nagojanahalli Pochampalli Krishnagiri	0.61.0 patta land	16.04.1995 15.04.2005	-
6	S. Ramanathan	741/1(P) Nagojanahalli Pochampalli Krishnagiri	0.39.0 patta land	05.04.1995 04.04.2005	-
7	Roshan Granites	745/1 Nagojanahalli Pochampalli Krishnagiri	0.86.0 patta land	05.04.1995 04.05.2005	-
8	Deepa Traders	741/6, 741/7B, Nagojanahalli Pochampalli Krishnagiri	0.30.5 patta land	09.05.1995- 08.05.2005	
Total			4.87.5		
Details of Proposed quarries:					
Nil					
Details of applied area:					
Nil					



Appraisal by SEAC:

The proposal was placed in the 232nd meeting of SEAC held on 15.09.2021. Based on the presentation made and the documents furnished by the Project proponent, SEAC decided to recommend the project proposal to SEIAA for grant of Environmental Clearance subject to the following specific conditions, in addition to normal conditions:

1. Restricting the depth of mining to 23m ultimate depth and quantity of 29,866 cu.m of grey



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- granite are permitted for mining over five years considering the environmental impacts due to the mining, safety of the working personnel and following the principle of the sustainable mining.
2. The proponent shall form proper benches as per the approved mining plan during the operation of the quarry considering the hydro-geological regime of the surrounding area as well as for safe mining.
 3. The Proponent should install cautionary boards at the entry and important locations of the mining site displaying caution notice to the public about the danger of entering the mining lease.
 4. The proponent shall conduct annual physical fitness test and eye test for all the employees to ensure health & safety during occupation.
 5. The Ambient silica analysis needs to be carried out once in six months and report the same to TNPCB once in six months.
 6. A detail report on the safety and health aspects of the workers and for the surrounding habitations during operation of mining shall be submitted to the AD, Dept. Of Geology & Mining of the concerned district once in a year.
 7. The proponent shall submit waste/reject handling and management /mode of disposal for the proposed mining activity shall be submitted to the AD, Dept. Of Geology & Mining of the concerned district once in a year.
 8. Fugitive emission measurements should be carried out during the mining operation and the report on the same may be submitted to TNPCB once in six months.
 9. The Proponent shall ensure that the Noise level is monitored during mining operation at the project site and adequate noise level reduction measures be undertaken.
 10. The proponent shall erect fencing all around the boundary of the proposed area with gates for entry/exit as per the conditions and shall furnish the photographs/map showing the same before obtaining the CTO from TNPCB.
 11. Greenbelt needs to be developed in the periphery of the mines area preferably adopting Miyawaki scheme of atleast 3m width so that at the closure time the trees would have grown well.
 12. Groundwater quality monitoring should be conducted once every six months and the report should be submitted to TNPCB.
 13. After mining is completed, proper leveling should be done by the Project proponent &


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Environmental Management Plan furnished by the Proponent should be strictly followed.

14. The Project proponent shall strictly adhere to mine closure plan after ceasing mining operations as committed. Also the proponent shall undertake re- grassing of the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition that is fit for the growth of fodder, flora, fauna etc.
15. Proper barrier to reduce noise level, dust pollution and to hold down any possible fly material (debris) should be established by providing greenbelt and/or metal sheets along the boundary of the quarrying site and suitable working methodology to be adopted by considering the wind direction.
16. The operation of the quarry should not affect the agriculture activities & water bodies near the project site and a safety distance of 50m from the water body should be left vacant without any mining activity.
17. Transportation of the quarried materials shall not cause any hindrance to the Village people or damage to the existing Village road.
18. The Project Proponent shall comply with the mining and other relevant rules and regulations wherever applicable.
19. The proponent shall develop an adequate greenbelt with native species on the periphery of the mine lease area before the commencement of the mining activity, in consultation with DFO of the concerned district/agriculture.
20. 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.
21. Prior clearance from Forestry & Wild Life including clearance from committee of the National Board for Wildlife as applicable shall be obtained before starting the quarrying operation, if the project site attracts the NBWL clearance.
22. To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of the mining operation.
23. 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 furnish the detailed EMP mentioning all the activities as proposed in the CER and furnish the same before placing the subject to SEIAA.
24. All the conditions imposed by the Deputy Director, Geology & Mining, Krishnagiri District in the mining plan approval and the precise area communication issued by District Collector,


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Krishnagiri District should be strictly followed.

Discussion by SEIAA and the Remarks:-

The subject was placed before the Authority in its 470th meeting held on 18.10.2021. After detailed discussions, the Authority accepted the recommendation of SEAC and decided to grant Environmental Clearance to the proposed Project subject to the conditions as recommended by SEAC & normal conditions in addition to the following conditions:

1. As per the recommendation of SEAC and as accepted by the proponent, **the restricted depth of mining is 23m and the ROM is 94893cu.m of Grey Granite quantity (35% recovery) is 29866 cu.m** are permitted for mining over five years considering the environmental impacts due to the mining, safety of the working personnel and following the principle of the sustainable mining.
2. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent has furnished the detailed EMP mentioning all the activities in the CER for Rs. 1.52 lakhs. All the activities proposed shall be carried out before obtaining CTO from TNPCB.
3. AD/DD mines shall issue the permit till the validity of the mining scheme. It shall also be ensured that mining is done with valid scheme of mining alone.

Part-A: Conditions to be Complied before commencing mining operations:-

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that

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|---|
| <ol style="list-style-type: none">I. The project has been accorded Environmental Clearance.II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.III. Environmental Clearance may also be seen on the website of the SEIAA.IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA. |
|---|

2. Mining activity should be reviewed by the District Collector after three years and decide for further extension.
3. The mine closure plan submitted by the project proponent shall be strictly followed after the lapse of the mine.


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4. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
5. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
6. **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.**
7. 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.
8. The proponent shall ensure that First Aid Box is available at site.
9. The excavation activity shall not alter the natural drainage pattern of the area.
10. The excavated pit shall be restored by the project proponent for useful purposes.
11. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
12. The quarrying operation shall be restricted between 7AM and 5 PM.
13. 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.
14. A minimum distance of 50mts. from any civil structure shall be kept from the periphery of any excavation area.
15. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
16. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.


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19. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
20. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF& CC, GoI on 16.11.2009.
21. The following measures are to be implemented to reduce Air Pollution during transportation of mineral
 - i. Roads shall be graded to mitigate the dust emission.
 - ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust
22. The following measures are to be implemented to reduce Noise Pollution
 - i. Proper and regular maintenance of vehicles and other equipment
 - ii. Limiting time exposure of workers to excessive noise.
 - iii. The workers employed shall be provided with protection equipment and earmuffs etc.
 - iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
 - v. All noise generating machinery the compressor, generator to be enclosed in acoustic enclosure so as to reduce noise in working area.
23. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoEF& CC, GoI to control noise to the prescribed levels.
24. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
25. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
26. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
27. The following measures are to be adopted to control erosion of dumps:-
 - i. Retention/ toe walls shall be provided at the foot of the dumps.


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- ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.
28. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous & other wastes (Management, and Trans Boundary Movement) Rules, 2016 and its amendments thereof to the recyclers authorized by TNPCB.
29. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
30. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
31. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
32. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
33. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
34. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
35. It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 5 hectares within the mining lease period of this application.


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36. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 300m radius from the periphery of the quarry site.
37. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
38. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
39. Bunds to be provided at the boundary of the project site.
40. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.
41. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
42. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
43. The Project Proponent shall provide solar lighting system to the nearby villages.
44. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
45. Safety equipments to be provided to all the employees.
46. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
47. The Assistant/Deputy Director, Department of Geology & mining shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
48. The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.
49. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.
50. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.


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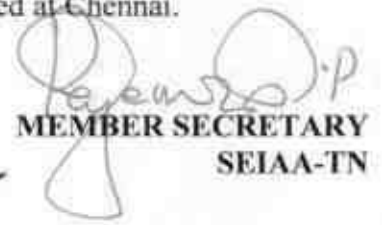
51. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
52. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
53. The Proponent shall ensure that the project activity including blasting, mining transportation etc should in no way have adverse impact to the other forests, such as reserve forests and social forests, tree plantation and bio diversity, surrounding water bodies etc.
54. The proponent shall provide Green Belt development at the rate of not less than 400 trees/Hectare. The tree saplings shall be not less than 3m height.
55. The fugitive emissions should be monitored during the mining activity and should be reported to TNPCB once in a month and the operation of the quarry should no way impact the agriculture activity & water bodies near the project site.
56. All the commitment made by the project proponent in the proposal shall be strictly followed.
57. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
58. The Project proponent has to strictly comply the outcome/direction of the Hon'ble NGT, Principle Bench, New Delhi in the O.A No.186 of 2016 (M.A.No.350/2016), O.A. No.200/2016, O.A.No.580/2016 (M.A.No.1182/2016), O.A.No.102/2017, 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), 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).

Part B: General Conditions:


1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
2. The Proponent shall obtain the Consent from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.


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5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
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.


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16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the Environmental Clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this Environmental Clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the Environmental Clearance.
20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
21. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act, 2002 and Biological diversity Rules, 2004 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
22. Any other conditions stipulated by other Statutory/Government authorities shall be complied.
23. Any appeal against this Environmental Clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
24. The Environmental Clearance is issued based on the documents furnished by the project proponent. In case any documents found to be incorrect/not in order at a later date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.


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Copy to:

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

Signature Not Verified

Digitally signed by
Tmt.P.RAJESWARI, IFS
Member Secretary
Date: 11/10/2021 6:39:38 PM
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ந.க.எண். 355/2015/கனிமம்-1(8)

மாவட்ட ஆட்சியர் அலுவலகம்,
புவியியல் மற்றும் சுரங்கத்துறை,
கிருஷ்ணகிரி மாவட்டம்,
கிருஷ்ணகிரி.

நாள்: .07.2015.

குறிப்பானை

பொருள்:

கனிமங்களும் குவாரிகளும் - சிறுகனிமம் - 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளில் திருத்தம் செய்யப்பட்டு-புதிய விதி எண் 41 மற்றும் 42 சேர்க்கப்பட்டது - வதிமுறைகளை நடைமுறைப்படுத்துதல் - ஏற்கனவே குவாரி குத்தகை வழங்கப்பட்டு குத்தகை காலம் முடிவடைந்தபின்பு மாண்புமிகு சென்னை உயர்நீதிமன்ற ஆணையின்படி செயல்படுத்தப்படும் கிராண்ட் குவாரிகளுக்கு சுற்றுப்புறச் சூழல் துறையின் தடையின்மை சான்றிணை பெற்று சமர்ப்பிக்க கோருதல் - தொடர்பாக.

பார்வை:

1. அரசு ஆணை (3டி).எண். 94, தொழில்துறை, நாள்: 02.05.1995
2. மாண்புமிகு சென்னை உயர்நீதிமன்றம் ரிட் மனு எண் 25401/2005 மற்றும் சிலவற்றின் மீது 06.05.2007 அன்று வழங்கியுள்ள ஆணைகள்.
3. ஆணையர், புவியியல் மற்றும் சுரங்கத்துறை கடித எண் ந.க.எண்.3868/எம்.சி 2012 நாள்:09.10.2012, 24.04.2013 மற்றும் 15.10.2014
4. அரசாணை எண்: 79, தொழில் (எம்.எம்.சி1) துறை, நாள்: 06.04.2015.

திரு. ஏ. அன்பருவி, எண்.16ஏ, சின்னையா தெரு, தியாகராய நகர், சென்னை 17 என்பவருக்கு கிருஷ்ணகிரி மாவட்டம், போச்சம்பள்ளி வட்டம், நாகோஜனஅள்ளி கிராமம், அரசு புல எண் 774 (பகுதி)ல் 2.025 ஹெக்டேர் பரப்பளவில் குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றும் நாளிலிருந்து 10 ஆண்டுகளுக்கு பலவண்ண கிராண்ட் கற்கள் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் பார்வை 1ல் கண்ட அரசு ஆணையின்படி வழங்கப்பட்டு, குவாரி குத்தகை ஒப்பந்த ஆவணம் 16.05.1995 அன்று நிறைவேற்றப்பட்டு குவாரி குத்தகை காலம் 15.05.2005 வரை நடப்பில் இருந்தது. மேற்கண்ட குவாரி குத்தகை தொடர்பாக குவாரி குத்தகை புதுப்பித்தல் விண்ணப்பம் கொடுத்து சென்னை உயர்நீதிமன்றத்தில் வழக்கு தொடுத்து மாண்புமிகு சென்னை உயர்நீதிமன்றம் வழங்கியுள்ள பார்வை 2ல் கண்ட ஆணைகளின்படி குவாரி தொடர்ந்து செயல்பாட்டில் உள்ளது.

பார்வை 3ல் கண்ட அரசாணையில் 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளில் திருத்தம் மேற்கொள்ளப்பட்டு புதிய விதிகள் 41 மற்றும் 42 சேர்க்கப்பட்டுள்ளது.

மேற்கண்ட திருத்தம் செய்யப்பட்ட 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகளின் விதி 42 (III) ன்படி மேற்கண்ட விதிகள் அமுலுக்கு வரும் முன்பு அனுமதி வழங்கப்பட்டு நடைமுறையில் உள்ள அனைத்து கிராண்ட் குவாரி உரிமையாளர்களும் சுற்றுச்சூழல் தடையின்மைச்சான்றிணை திருத்தப்பட்ட விதிகள் அமுலுக்கு வந்த நாளான 06.04.2015 லிருந்து 180 நாட்களுக்குள் சமர்ப்பிக்க வேண்டும் என ஆணையிடப்பட்டுள்ளது.

விதி 42 (IV) ன்படி ஏற்கனவே குவாரி குத்தகை நடைமுறையிலுள்ள குவாரிகளின் குத்தகைதாரர்கள் சுற்றுச்சூழல் தடையின்மை சான்றிணை குறிப்பிட்ட கால கொடுவிற்குள் சமர்ப்பிக்க தவறினால் அவர்களுக்கு மாவட்ட ஆட்சியர் முன்பு நேரில் ஆஜராக வாய்ப்பளித்து குவாரி குத்தகையை ரத்து செய்யலாம் எனவும் ஆணையிடப்பட்டுள்ளது.

எனவே, மேற்கண்ட விதிகளின் படி தங்களுக்கு திருத்தப்பட்ட தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959-ன் விதி 41 மற்றும் 42 ஆகியவை அமுலுக்கு வரும் முன்பு குவாரி குத்தகை வழங்கப்பட்டு மாண்புமிகு சென்னை உயர்நீதிமன்ற ஆணையின்படி செயல்பாட்டில் உள்ள கிருஷ்ணகிரி மாவட்டம், போச்சம்பள்ளி வட்டம், நாகோஜன அள்ளி கிராமம், அரசு புல எண் 774 (பகுதி)ல் 2.02.5 ஹெக்டேர் பரப்பளவில் உள்ள பல வண்ண கிராண்ட் குவாரி தொடர்பாக சுற்றுச்சூழல் மற்றும் வனத்துறை அமைச்சகத்தின்/தமிழ்நாடு மாநில சுற்றுச்சூழல் மதிப்பீட்டு ஆணையத்தின் (Prior Clearance from the Ministry of Environment and Forest/ The State Level Environment Impact Assessment Authority of Tamil Nadu) தடையின்மைச்சான்றை பெற்று 02.10.2015 அன்று அல்லது அதற்குமுன்பு சமர்ப்பிக்கவேண்டும் என இதன் மூலம் தெரிவிக்கப்படுகிறது. தவறினால் விதிகளின் படி உரிய மேல்நடவடிக்கை எடுக்கப்படும் எனவும் தெரிவிக்கப்படுகிறது.

மேலும், தமிழ்நாடு சிறுகனிம சலுகை 1959 விதி 41 (10) (II) ன்படி எதிர்காலத்தில் குவாரி பணி செய்யும்போது அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டத்தின்படி குவாரி பணிகளை மேற்கொள்ள வேண்டும் எனவும், அவ்வாறு செய்யத்தவறினால் குவாரி பணி தற்காலிகமாக இடைநிறுத்தம் செய்யப்பட்டு குவாரி செய்வதில் ஏற்பட்டுள்ள தவறுகளை சரிசெய்து அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டத்தின்படி குவாரிப்பகுதி மாற்றியமைக்கப்பட்ட பின்பே குவாரிப்பணி செய்ய மீண்டும் அனுமதி வழங்கப்படும் எனவும் தெரிவிக்கப்படுகிறது.

மாவட்ட ஆட்சித்தலைவருக்கான,
கிருஷ்ணகிரி.



பெறுநர்:
திரு. ஏ. அன்பருவி,
எண்.16ஏ, சின்னையா தெரு,
தியாகராய நகர்,
சென்னை 17

பதிவுச்சலில் ஒப்புரை அட்டையுடன்

DEPARTMENT OF GEOLOGY AND MINING

From
Thiru Hans Raj Verma, I.A.S.,
Commissioner of Geology and Mining,
Gundy Industrial Estate Post,
Chennai-32

To
Thiru. C. Krishnappa Gounder,
No.337, Bangalore Road,
Krishnagiri Taluk,
Dharmapuri district.

Lr No 2077 MM2/2003 dated 12-07-2004

Sr,

Sub: Approval of mining plan for existing quarry lease submitted under rule 17 of Granite Conservation and Development Rules, 1999 by Thiru. C. Krishnappa Gounder - for multi colour granite - over an extent of 2.024 hecte. in S.F.No. 609/A (Part) of Nagaprahalli village, Krishnagiri Taluk, Dharmapuri district - reg.

- Ref:
1. Minutes dt.4.9.2002 of Granite Development council Meeting held at Bangalore on 24.8.2002
 2. Government Lr.No.19634/MME2/2002-2 Industries Department dt.14.11.02
 3. Lr.No.368A/02 (A-Mines) dt.07-02-2003 from the Assistant Director (G & M), Dharmapuri District
- o0o-----

In exercise of the power conferred by Rules, 15 and 17 of Granite Conservation and Development Rules, 1999 read with G.O.Ms.No.87, Industries (MMC 1) Department Dated 22.2.2001, and pursuance of the letter under first cited, I hereby approve the above said mining plan. This approval is subject to the following conditions:

- (i) That the mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such Laws are made by the Central Government, State Government or any other authority
- (ii) This approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act, 1884 (Central Act IV of 1884) and the rules made thereunder and the Tamil Nadu Minor Mineral Concession Rules, 1959
- (iii) That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- (iv) That the approval of mining plan does not confer any rights for the renewal of quarry lease
- (v) The approval is valid upto the subsistence of the lease period only
- (vi) This approval is subject to the condition that the applicant should obtain permission/rafication for the waste during yard outside the lease hold and
- (vii) As per rule 18 of Granite Conservation and Development Rules, 1999 the lessee should also submit a scheme of mining for every five years after review of mining plans now approved.

Sd HANS RAJ VERMA,
COMMISSIONER OF GEOLOGY AND MINING

[Signature]
for COMMISSIONER OF GEOLOGY AND MINING

Encl: Approved mining plan.

- Copy to:
- 1) District Collector, Dharmapuri District (with AMP)
With a request to ensure that the quarrying operation is undertaken as per the approved mining plan.
 - 2) The Secretary to Government, Industries Department, Chennai-9
 - 3) The Directorate of Mines Safety, Southern Region, Oorjaum Post, Karnataka, Pin. 563 120. (with AMP)



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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ1 – Core Zone
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5615,5623, 6134,6141,6484,6491, 6785,6792, 7097, 7104, 7420,7427, 7636,7643, 8008,8015,8313,8320,8726,8733,9057,9064,9356,9363,9671,9678		
Location Coordinates	12 22'29.71"N 78 17'3.64"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
02.10.2023	7.00am - 7.00am	42.1	20.0	7.3	19.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.10.2023	7.10am - 7.10am	42.7	21.2	4.4	19.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.10.2023	7.00am - 7.00am	43.1	23.4	BDL(DL:4)	17.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.10.2023	7.10am - 7.10am	40.9	22.5	BDL(DL:4)	20.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.10.2023	7.00am - 7.00am	43.3	23.7	4.1	22.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.10.2023	7.10am - 7.10am	41.2	20.8	BDL(DL:4)	21.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.10.2023	7.30am - 7.30am	43.6	22.9	4.7	20.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.10.2023	7.40am - 7.40am	42.1	22.5	6.2	21.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.10.2023	7.30am - 7.30am	41.7	20.4	5.6	21.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
31.10.2023	7.40am - 7.40am	42.1	21.2	4.4	20.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
06.11.2023	7.00am - 7.00am	43.3	22.9	4.1	21.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.11.2023	7.10am - 7.10am	42.6	21.7	BDL(DL:4)	21.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.11.2023	7.15am - 7.15am	41.9	20.8	5.1	22.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.11.2023	7.25am - 7.25am	40.1	19.6	6.2	21.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.11.2023	7.30am - 7.30am	40.1	20.0	5.7	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.11.2023	7.40am - 7.40am	39.7	19.1	7.4	21.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.11.2023	7.30am - 7.30am	44.2	22.9	5.3	19.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.11.2023	7.40am - 7.40am	45.7	24.5	5.5	21.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.12.2023	7.00am - 7.00am	41.8	20.4	7.1	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
05.12.2023	7.10am - 7.10am	41.0	21.2	6.3	20.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.12.2023	7.00am - 7.00am	44.3	22.5	BDL(DL:4)	21.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
12.12.2023	7.10am - 7.10am	43.1	22.5	4.1	21.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.12.2023	7.00am - 7.00am	44.3	23.3	BDL(DL:4)	21.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
19.12.2023	7.10am - 7.10am	43.9	23.3	5.7	21.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.12.2023	7.30am - 7.30am	43.4	22.5	BDL(DL:4)	22.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
26.12.2023	7.40am - 7.40am	42.9	22.1	6.1	21.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Verified by

L. SUDHAPRIYA
Technical Manager



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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ1 – Core Zone
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5615,5623, 6134,6141,6484,6491, 6785,6792, 7097, 7104, 7420,7427, 7636,7643, 8008,8015,8313,8320,8726,8733,9057,9064,9356,9363,9671,9678		
Location Coordinates	12 22'29.71"N 78' 17'3.64"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
02.10.2023	7.00am - 7.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.10.2023	7.10am - 7.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2023	7.00am - 7.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2023	7.10am - 7.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2023	7.00am - 7.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2023	7.10am - 7.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2023	7.30am - 7.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2023	7.40am - 7.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2023	7.30am - 7.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2023	7.40am - 7.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.11.2023	7.00am - 7.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2023	7.10am - 7.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2023	7.15am - 7.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2023	7.25am - 7.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2023	7.30am - 7.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2023	7.40am - 7.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2023	7.30am - 7.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2023	7.40am - 7.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2023	7.00am - 7.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2023	7.10am - 7.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2023	7.00am - 7.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2023	7.10am - 7.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2023	7.00am - 7.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2023	7.10am - 7.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2023	7.30am - 7.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2023	7.40am - 7.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



*****End of Report*****
Page 2 of 2

Verified by

L. SUDHAPRIYA
Technical Manager



Committed to Precision

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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ2 – Near Existing Quarry
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5616,5624,6135,6142,6485,6492,6786, 6793, 7098,7105, 7421, 7428,7637,7644, 8009,8016,8314,8321,8727,9058,9065,9357,9364,9672,9679		
Location Coordinates	12 22'38.41"N 78 16'57.80"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
02.10.2023	7.15am - 7.15am	41.8	21.3	4.1	25.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.10.2023	7.25am - 7.25am	42.8	21.6	4.6	21.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.10.2023	7.20am - 7.20am	42.9	20.8	6.3	23.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.10.2023	7.25am - 7.25am	41.3	22.5	6.0	18.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.10.2023	7.25am - 7.25am	42.7	20.4	5.4	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.10.2023	7.35am - 7.35am	41.6	22.9	BDL(DL:4)	21.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.10.2023	7.45am - 7.45am	41.5	19.6	5.2	20.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.10.2023	7.55am - 7.55am	40.9	20.0	5.4	20.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.10.2023	7.45am - 7.45am	40.6	20.0	5.4	20.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
31.10.2023	7.55am - 7.55am	39.8	17.9	6.2	19.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
06.11.2023	7.15am - 7.15am	42.1	22.5	4.4	22.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.11.2023	7.25am - 7.25am	41.3	27.2	BDL(DL:4)	22.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.11.2023	7.45am - 7.45am	40.2	19.2	4.9	22.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.11.2023	7.55am - 7.55am	39.2	17.9	5.5	20.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.11.2023	7.45am - 7.45am	39.8	19.6	4.9	20.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.11.2023	7.55am - 7.55am	38.6	18.7	BDL(DL:4)	21.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.11.2023	7.45am - 7.45am	43.7	22.5	6.9	21.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.11.2023	7.55am - 7.55am	42.6	21.2	4.9	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.12.2023	7.20am - 7.20am	40.3	19.1	5.7	20.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
05.12.2023	7.25am - 7.25am	39.3	18.3	6.0	19.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.12.2023	7.15am - 7.15am	43.2	23.3	5.7	21.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
12.12.2023	7.20am - 7.20am	42.4	22.5	6.8	20.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.12.2023	7.20am - 7.20am	43.5	22.9	4.1	21.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
19.12.2023	7.25am - 7.25am	42.1	22.1	BDL(DL:4)	21.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.12.2023	7.45am - 7.45am	42.7	22.1	6.9	22.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
26.12.2023	7.55am - 7.55am	41.6	21.6	6.8	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Verified by
L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ2 – Near Existing Quarry
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5616,5624,6135,6142,6485,6492,6786, 6793, 7098,7105, 7421, 7428,7637,7644, 8009,8016,8314,8321,8727,9058,9065,9357,9364,9672,9679		
Location Coordinates	12 22'38.41"N 78 16'57.80"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
02.10.2023	7.15am - 7.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.10.2023	7.25am - 7.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2023	7.20am - 7.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2023	7.25am - 7.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2023	7.25am - 7.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2023	7.35am - 7.35am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2023	7.45am - 7.45am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2023	7.55am - 7.55am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2023	7.45am - 7.45am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2023	7.55am - 7.55am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.11.2023	7.15am - 7.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2023	7.25am - 7.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2023	7.45am - 7.45am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2023	7.55am - 7.55am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2023	7.45am - 7.45am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2023	7.55am - 7.55am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2023	7.45am - 7.45am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2023	7.55am - 7.55am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2023	7.20am - 7.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2023	7.25am - 7.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2023	7.15am - 7.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2023	7.20am - 7.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2023	7.20am - 7.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2023	7.25am - 7.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2023	7.45am - 7.45am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2023	7.55am - 7.55am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



*****End of Report*****

Page 2 of 2

Verified by

L. SUDHAPRIYA
Technical Manager



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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ3 – N.Thattakkal
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5617,5624,5625,6136, 6143,6486,6493,6787, 6794,7099, 7106, 7422,7429, 7638,7645, 8010,8017,8315,8322,8728,8735,9059,9066,9358,9365,9673,9680		
Location Coordinates	12 22'13.18"N 78 17'29.94"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
02.10.2023	7.35am - 7.35am	40.9	22.5	BDL(DL:4)	18.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.10.2023	7.45am - 7.45am	41.7	22.0	7.3	20.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.10.2023	7.40am - 7.40am	42.3	20.8	6.2	17.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.10.2023	7.50am - 7.50am	41.1	21.6	6.3	22.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.10.2023	7.45am - 7.45am	42.5	20.8	4.9	20.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.10.2023	7.50am - 7.50am	41.4	21.2	6.5	21.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.10.2023	8.15am - 8.15am	41.9	19.5	5.7	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.10.2023	8.25am - 8.25am	40.2	20.4	5.4	21.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.10.2023	8.15am - 8.15am	39.7	18.3	6.7	19.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
31.10.2023	8.25am - 8.25am	40.2	18.3	6.4	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
06.11.2023	7.40am - 7.40am	40.8	20.8	6.0	20.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.11.2023	7.50am - 7.50am	39.7	18.3	7.7	20.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.11.2023	8.10am - 8.10am	41.3	20.4	BDL(DL:4)	19.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.11.2023	8.20am - 8.20am	40.4	19.2	5.9	20.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.11.2023	8.15am - 8.15am	38.3	18.3	6.9	20.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.11.2023	8.25am - 8.25am	37.2	17.5	6.6	21.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.11.2023	8.15am - 8.15am	42.9	21.7	6.1	20.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.11.2023	8.25am - 8.25am	41.7	20.8	6.6	19.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.12.2023	7.40am - 7.40am	41.4	21.2	5.5	20.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
05.12.2023	7.50am - 7.50am	40.1	19.6	7.4	20.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.12.2023	7.35am - 7.35am	42.2	20.8	BDL(DL:4)	20.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
12.12.2023	7.40am - 7.40am	41.7	21.2	4.7	21.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.12.2023	7.40am - 7.40am	42.7	22.1	7.1	21.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
19.12.2023	7.50am - 7.50am	41.0	21.2	5.2	20.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.12.2023	8.15am - 8.15am	41.4	21.2	4.4	22.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
26.12.2023	8.25am - 8.25am	40.1	22.9	6.6	21.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Verified by

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ3 – N.Thattakkal
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5617,5624,5625,6136, 6143,6486,6493,6787, 6794,7099, 7106, 7422,7429, 7638,7645, 8010,8017,8315,8322,8728,8735,9059,9066,9358,9365,9673,9680		
Location Coordinates	12 22'13.18"N 78 17'29.94"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
02.10.2023	7.35am - 7.35am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.10.2023	7.45am - 7.45am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2023	7.40am - 7.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2023	7.50am - 7.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2023	7.45am - 7.45am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2023	7.50am - 7.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2023	8.15am - 8.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2023	8.25am - 8.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2023	8.15am - 8.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2023	8.25am - 8.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.11.2023	7.40am - 7.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2023	7.50am - 7.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2023	8.10am - 8.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2023	8.20am - 8.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2023	8.15am - 8.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2023	8.25am - 8.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2023	8.15am - 8.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2023	8.25am - 8.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2023	7.40am - 7.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2023	7.50am - 7.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2023	7.35am - 7.35am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2023	7.40am - 7.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2023	7.40am - 7.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2023	7.50am - 7.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2023	8.15am - 8.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2023	8.25am - 8.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



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*****End of Report*****
Page 2 of 2

L. SUDHAPRIYA
Technical Manager



Committed to Precision

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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ4 - Agaram
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5618,5626, 6137,6144,6487, 6494,6788,6795, 7100,7107, 7423,7430,7639,7646, 8011,8018,8316,8323,8729,8736, 9060,9067,9359,9366,9674,9681		
Location Coordinates	12° 20' 31.05" N 78° 16' 2.65" E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
02.10.2023	8.05am - 8.05am	41.9	20.8	4.1	22.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.10.2023	8.10am - 8.10am	41.1	22.1	6.0	20.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.10.2023	8.10am - 8.10am	41.7	20.4	4.1	19.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.10.2023	8.20am - 8.20am	40.9	22.5	6.0	18.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.10.2023	8.15am - 8.15am	42.1	21.6	7.1	22.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.10.2023	8.20am - 8.20am	41.2	22.5	5.2	21.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.10.2023	8.40am - 8.40am	41.2	19.2	BDL(DL:4)	20.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.10.2023	8.50am - 8.50am	39.8	20.8	5.2	21.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.10.2023	8.40am - 8.40am	40.1	18.7	4.1	22.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
31.10.2023	8.50am - 8.50am	39.6	17.5	5.2	19.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
06.11.2023	8.10am - 8.10am	41.4	21.2	BDL(DL:4)	23.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.11.2023	8.20am - 8.20am	40.7	20.4	BDL(DL:4)	24.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.11.2023	8.40am - 8.40am	40.4	19.6	6.7	20.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.11.2023	8.50am - 8.50am	39.5	18.7	5.9	20.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.11.2023	8.40am - 8.40am	37.6	17.5	5.2	20.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.11.2023	8.50am - 8.50am	36.7	16.2	5.5	22.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.11.2023	8.40am - 8.40am	41.5	20.8	7.4	20.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.11.2023	8.50am - 8.50am	40.3	20.0	4.4	21.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.12.2023	8.10am - 8.10am	39.8	18.3	6.6	20.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
05.12.2023	8.20am - 8.20am	42.1	21.7	6.9	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.12.2023	8.10am - 8.10am	41.6	20.8	6.3	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
12.12.2023	8.20am - 8.20am	40.6	20.0	4.9	20.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.12.2023	8.10am - 8.10am	41.9	20.8	4.9	21.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
19.12.2023	8.20am - 8.20am	40.2	19.6	4.4	20.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.12.2023	8.40am - 8.40am	40.5	20.0	6.0	22.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
26.12.2023	8.50am - 8.50am	39.4	19.2	4.9	22.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ4 - Agaram
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5618,5626, 6137,6144,6487, 6494,6788,6795, 7100,7107, 7423,7430,7639,7646, 8011,8018,8316,8323,8729,8736, 9060,9067,9359,9366,9674,9681		
Location Coordinates	12°20'31.05"N 78°16'2.65"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)	
02.10.2023	8.05am - 8.05am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
03.10.2023	8.10am - 8.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
09.10.2023	8.10am - 8.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
10.10.2023	8.20am - 8.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
16.10.2023	8.15am - 8.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
17.10.2023	8.20am - 8.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
23.10.2023	8.40am - 8.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
24.10.2023	8.50am - 8.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
30.10.2023	8.40am - 8.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
31.10.2023	8.50am - 8.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
06.11.2023	8.10am - 8.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
07.11.2023	8.20am - 8.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
13.11.2023	8.40am - 8.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
14.11.2023	8.50am - 8.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
20.11.2023	8.40am - 8.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
21.11.2023	8.50am - 8.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
27.11.2023	8.40am - 8.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
28.11.2023	8.50am - 8.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
04.12.2023	8.10am - 8.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
05.12.2023	8.20am - 8.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
11.12.2023	8.10am - 8.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
12.12.2023	8.20am - 8.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
18.12.2023	8.10am - 8.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
19.12.2023	8.20am - 8.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
25.12.2023	8.40am - 8.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
26.12.2023	8.50am - 8.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0	

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



*****End of Report*****

Page 2 of 2

Verified by

L. SUDHAPRIYA
Technical Manager

SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ5 - Baleguli
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5619,5627,6138,6145,6488,6495,6789,6796, 7101,7108,7424,7431, 7640,7647, 8012,8019,8317,8324,8730,8737, 9061,9068,9360,9367,9675,9682		
Location Coordinates	12 25'5.04"N 78 16'34.32"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
02.10.2023	8.30am - 8.30am	40.8	19.6	BDL(DL:4)	18.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.10.2023	8.35am - 8.35am	42.0	22.8	5.7	22.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.10.2023	8.40am - 8.40am	42.6	20.0	5.7	21.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.10.2023	8.50am - 8.50am	41.5	21.9	4.3	20.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.10.2023	8.45am - 8.45am	42.9	20.4	5.2	23.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.10.2023	9.15am - 9.15am	41.7	22.1	4.9	20.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.10.2023	9.00am - 9.00am	41.7	20.8	6.0	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.10.2023	9.10am - 9.10am	40.9	21.2	BDL(DL:4)	21.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.10.2023	9.00am - 9.00am	39.6	18.3	4.1	19.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
31.10.2023	9.10am - 9.10am	39.4	17.1	4.6	20.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
06.11.2023	8.30am - 8.30am	39.6	18.3	4.4	20.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.11.2023	8.40am - 8.40am	38.2	17.5	6.2	23.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.11.2023	9.00am - 9.00am	39.7	19.6	6.9	19.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.11.2023	9.10am - 9.10am	38.1	17.9	4.9	23.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.11.2023	9.00am - 9.00am	36.8	16.7	4.7	21.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.11.2023	9.10am - 9.10am	35.1	15.8	4.1	21.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.11.2023	9.00am - 9.00am	40.7	19.5	7.1	21.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.11.2023	9.10am - 9.10am	39.9	21.2	5.8	21.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.12.2023	8.40am - 8.40am	38.3	17.1	4.9	21.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
05.12.2023	8.50am - 8.50am	38.9	16.7	5.2	19.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.12.2023	8.30am - 8.30am	40.3	19.1	7.1	21.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
12.12.2023	8.35am - 8.35am	39.2	19.1	BDL(DL:4)	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.12.2023	8.40am - 8.40am	40.7	20.0	6.8	21.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
19.12.2023	8.50am - 8.50am	39.5	17.5	7.4	20.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.12.2023	9.00am - 9.00am	39.8	19.2	6.5	23.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
26.12.2023	9.10am - 9.10am	37.6	17.5	6.3	21.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Verified by

E. SUDHAPRIYA
Technical Manager



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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ5 - Baleguli
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5619,5627,6138,6145,6488,6495,6789,6796, 7101,7108,7424,7431, 7640,7647, 8012,8019,8317,8324,8730,8737, 9061,9068,9360,9367,9675,9682		
Location Coordinates	12 25'5.04"N 78 16'34.32"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
02.10.2023	8.30am - 8.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.10.2023	8.35am - 8.35am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2023	8.40am - 8.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2023	8.50am - 8.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2023	8.45am - 8.45am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2023	9.15am - 9.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2023	9.10am - 9.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2023	9.10am - 9.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.11.2023	8.30am - 8.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2023	8.40am - 8.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2023	9.10am - 9.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2023	9.10am - 9.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2023	9.10am - 9.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2023	8.40am - 8.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2023	8.50am - 8.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2023	8.30am - 8.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2023	8.35am - 8.35am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2023	8.40am - 8.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2023	8.50am - 8.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2023	9.10am - 9.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



*****End of Report*****

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Verified by

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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ6 - Periyakaradiyur
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5620,5628,6139,6146,6489,6496,6790, 6797,7102,7109, 7425,7432, 7641,7648, 8013,8020,8318,8325,8731,8738, 9062,9069,9361,9368,9676,9683		
Location Coordinates	12 20'24.16"N 78 19'33.22"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
02.10.2023	8.55am - 8.55am	42.3	20.0	4.6	21.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.10.2023	9.00am - 9.00am	41.8	21.3	4.9	23.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.10.2023	9.00am - 9.00am	41.5	20.4	5.5	21.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.10.2023	9.15am - 9.15am	43.0	22.9	5.7	21.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.10.2023	9.10am - 9.10am	41.5	20.0	5.4	21.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.10.2023	8.50am - 8.50am	42.8	22.5	5.6	20.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.10.2023	9.30am - 9.30am	40.8	21.2	6.5	20.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.10.2023	9.40am - 9.40am	41.1	20.8	6.5	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.10.2023	9.30am - 9.30am	41.1	19.2	4.9	21.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
31.10.2023	9.40am - 9.40am	40.7	19.8	BDL(DL:4)	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
06.11.2023	9.00am - 9.00am	38.7	17.9	BDL(DL:4)	20.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.11.2023	9.10am - 9.10am	37.3	17.5	BDL(DL:4)	19.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.11.2023	9.30am - 9.30am	38.3	16.6	6.7	19.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.11.2023	9.40am - 9.40am	37.4	17.0	6.7	21.6	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.11.2023	9.30am - 9.30am	35.8	15.4	6.0	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.11.2023	9.40am - 9.40am	37.5	17.0	6.0	20.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.11.2023	9.30am - 9.30am	39.6	18.7	BDL(DL:4)	19.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.11.2023	9.40am - 9.40am	38.6	20.0	7.1	20.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.12.2023	9.00am - 9.00am	38.5	17.5	4.4	21.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
05.12.2023	9.15am - 9.15am	37.3	16.2	6.6	20.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.12.2023	9.00am - 9.00am	39.5	17.9	5.7	22.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
12.12.2023	9.10am - 9.10am	38.2	17.5	5.5	20.8	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.12.2023	9.00am - 9.00am	38.9	17.9	6.6	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
19.12.2023	9.15am - 9.15am	37.4	16.7	6.3	21.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.12.2023	9.30am - 9.30am	38.6	18.3	6.6	22.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
26.12.2023	9.40am - 9.40am	37.2	16.7	5.5	21.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Verified by

L. SUDHAPRIYA
Technical Manager



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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ6 - Periyakaradiyur
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5620,5628,6139,6146,6489,6496,6790, 6797,7102,7109, 7425,7432, 7641,7648, 8013,8020,8318,8325,8731,8738, 9062,9069,9361,9368,9676,9683		
Location Coordinates	12 20'24.16"N 78 19'33.22"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)
02.10.2023	8.55am - 8.55am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
03.10.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2023	9.15am - 9.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2023	9.10am - 9.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2023	8.50am - 8.50am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2023	9.30am - 9.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2023	9.40am - 9.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2023	9.30am - 9.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2023	9.40am - 9.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
06.11.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2023	9.10am - 9.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2023	9.30am - 9.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2023	9.40am - 9.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2023	9.30am - 9.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2023	9.40am - 9.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2023	9.30am - 9.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2023	9.40am - 9.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2023	9.15am - 9.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2023	9.10am - 9.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2023	9.00am - 9.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2023	9.15am - 9.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2023	9.30am - 9.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2023	9.40am - 9.40am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



*****End of Report*****
Page 2 of 2

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L. SUDHAPRIYA
Technical Manager



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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54.0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ7 - Penneswaramadam
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5621,5629,6140,6147, 6490, 6497,6791,6798, 7103,7110,7426, 7433, 7642,7649, 8014,8021,8319,8326,8732,8739,9063,9070,9362,9369,9677,9684		
Location Coordinates	12 23'36.90"N 78 14'42.54"E		
Report Date	08.01.2024		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
02.10.2023	9.15am - 9.15am	41.5	20.4	6.2	22.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
03.10.2023	9.20am - 9.20am	42.6	22.1	7.1	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
09.10.2023	9.25am - 9.25am	41.2	20.5	4.6	19.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
10.10.2023	9.35am - 9.35am	42.3	22.5	4.1	19.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
16.10.2023	9.30am - 9.30am	41.7	22.5	4.6	22.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
17.10.2023	9.35am - 9.35am	42.6	22.9	6.7	20.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
23.10.2023	10.0am - 10.0am	40.3	21.6	5.2	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
24.10.2023	10.10am - 10.10am	41.4	21.2	5.7	20.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
30.10.2023	10.0am - 10.0am	40.7	20.4	5.9	21.0	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
31.10.2023	10.10am - 10.10am	39.6	19.2	4.4	27.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
06.11.2023	9.15am - 9.15am	39.0	16.6	5.6	21.7	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
07.11.2023	9.25am - 9.25am	31.6	16.7	7.5	19.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
13.11.2023	10.00am - 10.00am	37.9	16.2	6.9	20.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
14.11.2023	10.10am - 10.10am	36.9	16.2	BDL(DL:4)	18.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
20.11.2023	10.0am - 10.0am	36.5	16.6	7.1	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
21.11.2023	10.10am - 10.10am	36.3	16.2	6.3	21.2	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
27.11.2023	10.0am - 10.0am	38.2	18.3	4.2	20.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
28.11.2023	10.10am - 10.10am	37.1	17.5	6.6	20.4	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
04.12.2023	9.25am - 9.25am	36.6	16.2	4.2	21.9	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
05.12.2023	9.30am - 9.30am	35.8	17.1	5.5	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
11.12.2023	9.15am - 9.15am	38.6	17.1	4.4	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
12.12.2023	9.20am - 9.20am	37.4	15.8	4.4	21.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
18.12.2023	9.25am - 9.25am	39.6	18.3	5.5	21.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
19.12.2023	9.35am - 9.35am	38.0	15.8	4.7	20.1	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
25.12.2023	10.0am - 10.0am	37.4	17.5	7.1	21.5	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
26.12.2023	10.10am - 10.10am	35.3	15.8	6.8	23.3	BDL(DL:5.0)	BDL(DL:5.0)	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<100	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



Verified by

L. SUDHAPRIYA
Technical Manager



Committed to Precision

LABORATORY | CONSULTANCY | SUSTAINABILITY

S.F.No.92/3A2, Geetha Nagar,

Alagapuram Pudur,

Salem - 636 016. Tamil Nadu.

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SUMMARY REPORT

Issued To	Tvl. A.A. Enterprises, Managing Partner S.Ramasubramaniam, D.no.93 & 94, Poombugar nagar, Valar nagar, Uthangudi, Madurai District - 625107.		
Site Location	Lease Area :1.54,0Ha S.F.No. 609A(Part)(Bit-5)of Nagojanahalli Village,Pochampalli Taluk, Krishnagiri District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ7 - Penneswaramadam
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/5621,5629,6140,6147, 6490, 6497,6791,6798, 7103,7110,7426, 7433, 7642,7649, 8014,8021,8319,8326,8732,8739,9063,9070,9362,9369,9677,9684		
Location Coordinates	12 23'36.90"N 78 14'42.54"E		
Report Date	08.01.2024		

Date	Period. hrs	Ni (ng/m ³)	As (ng/m ³)	C6H6 (µg/m ³)	BaP (ng/m ³)	Pb (µg/m ³)	
02.10.2023	9.15am - 9.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
03.10.2023	9.20am - 9.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
09.10.2023	9.25am - 9.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
10.10.2023	9.35am - 9.35am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
16.10.2023	9.30am - 9.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
17.10.2023	9.35am - 9.35am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
23.10.2023	10.0am - 10.0am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
24.10.2023	10.10am - 10.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
30.10.2023	10.0am - 10.0am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
31.10.2023	10.10am - 10.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
06.11.2023	9.15am - 9.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
07.11.2023	9.25am - 9.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
13.11.2023	10.00am - 10.00am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
14.11.2023	10.10am - 10.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
20.11.2023	10.0am - 10.0am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
21.11.2023	10.10am - 10.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
27.11.2023	10.0am - 10.0am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
28.11.2023	10.10am - 10.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
04.12.2023	9.25am - 9.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
05.12.2023	9.30am - 9.30am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
11.12.2023	9.15am - 9.15am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
12.12.2023	9.20am - 9.20am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
18.12.2023	9.25am - 9.25am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
19.12.2023	9.35am - 9.35am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
25.12.2023	10.0am - 10.0am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
26.12.2023	10.10am - 10.10am	BDL (DL:1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)	
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0	

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the CPCB standards.



*****End of Report*****

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Verified by

L. SUDHAPRIYA
Technical Manager

TEST REPORT

ULR-TC606023000008421F

Report Number: GLCS/TR/8022/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area: 1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2Liters
Sample Name	Surface Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /8022	Sample Receipt Date	23.11.2023
Location Name	SW -1 - Thenpennai River	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°22'29.36"N 78°16'0.70"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	7.0
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	7.91
4	Electrical Conductivity	IS 3025 PART14	µS/cm	958
5	Turbidity	IS 3025 PART10	NTU	4
6	Total Dissolved Solids	IS 3025 PART16	mg/l	565
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	160.8
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	204
9	Calcium as Ca	IS 3025 PART40	mg/l	44.8

For Global Lab and Consultancy Services



Page 1 of 3


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

TEST REPORT

ULR-TC606023000008421F

Report Number: GLCS/TR/8022/2023-24(1)

Report Date: 28.12.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
10	Magnesium as Mg	IS 3025 PART 46	mg/l	22.3
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	228.6
12	Sulphate as SO ₄ ⁻²	IS 3025 PART 24	mg/l	45.02
13	Iron as Fe	IS 3025 PART 53	mg/l	0.30
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	0.20
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL:2.0)
19	Dissolved Oxygen	IS 3025 PART 38	mg/l	6.6
20	Bio-Chemical Oxygen Demand @ 27°C for 3 days	IS 3025 PART 44	mg/l	15.0
21	Chemical Oxygen Demand	IS 3025 PART 58	mg/l	36.1
22	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)

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

For Global Lab and Consultancy Services




Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 2 of 3

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TEST REPORT

ULR-TC606023000008421F

Report Number: GLCS/TR/8022/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Good
Customer Ref No	3922	Sample Quantity	250 ml
Sample Name	Surface Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS /8022	Date of Analysis	23.11.2023
Location Name	SW -1 - Thenpennai River	Date of Completion	30.11.2023
Sample Receipt Date	23.11.2023	Location Co-ordinates	12°22'29.36"N 78°16'0.70"E

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Total Coliforms	IS 1622	MPN/100ml	33
2	<i>Escherichia coli</i>	IS 1622	MPN/100ml	8

Note: MPN- Most Probable Number..



For Global Lab and Consultancy Services


Authorised Signatory

L. DINESHKUMAR
Technical Manager-Microbiology

*****End of Report*****

Page 3 of 3

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting an E-mail request with report number and report date along with report copy.

TEST REPORT

Report Number: GLCS/TR/8022/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2Liters
Sample Name	Surface Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /8022	Sample Receipt Date	23.11.2023
Location Name	SW -1 - Thenpennai River	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°22'29.36"N 78°16'0.70"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Total Suspended Solids	IS 3025 PART 17	mg/l	9
2	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)
3	Anionic Detergents	IS 13428 ANNEX K	mg/l	BDL(DL:0.05)
4	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
5	Sulphide	GLCS/SOP/W/66	mg/l	4.8
6	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
7	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
8	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
9	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
10	Aluminium as Al	GLCS/SOP/W/62	mg/l	0.012
11	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
12	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
13	Chromium as Cr 6*	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
14	Barium as Ba	GLCS/SOP/W/62	mg/l	0.010
15	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
16	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)

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



For Global Lab and Consultancy Services

*****End of Report*****

Page 1 of 1

Authorised Signatory

L. SUDHAPRIYA

Technical Manager

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TEST REPORT

ULR-TC606023000008422F

Report Number: GLCS/TR/8023/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2Liters
Sample Name	Surface Water -2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /8023	Sample Receipt Date	23.11.2023
Location Name	SW-2- Maruderi Lake	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	23.12.2023
Location Co-ordinates	12°20'45.14"N 78°47'0.08"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	6
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	7.83
4	Electrical Conductivity	IS 3025 PART14	µS/cm	1015
5	Turbidity	IS 3025 PART10	NTU	5
6	Total Dissolved Solids	IS 3025 PART16	mg/l	599
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	168.8
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	224
9	Calcium as Ca	IS 3025 PART40	mg/l	48.1

For Global Lab and Consultancy Services



Page 1 of 3


Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

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TEST REPORT

ULR-TC606023000008422F

Report Number: GLCS/TR/8023/2023-24(1)

Report Date: 28.12.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
10	Magnesium as Mg	IS 3025 PART 46	mg/l	25.2
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	236.8
12	Sulphate as SO ₄ ⁻	IS 3025 PART 24	mg/l	40.3
13	Iron as Fe	IS 3025 PART 53	mg/l	0.30
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	0.20
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL :2.0)
19	Dissolved Oxygen	IS 3025 PART 38	mg/l	7.1
20	Bio-Chemical Oxygen Demand @ 27°C for 3 days	IS 3025 PART 44	mg/l	10.5
21	Chemical Oxygen Demand	IS 3025 PART 58	mg/l	28.1
22	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)

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

For Global Lab and Consultancy Services




Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 2 of 3

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TEST REPORT

ULR-TC606023000008422F

Report Number: GLCS/TR/8023/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Good
Customer Ref No	3922	Sample Quantity	250 ml
Sample Name	Surface Water -2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS /8023	Date of Analysis	23.11.2023
Location Name	SW-2- Maruderi Lake	Date of Completion	30.11.2023
Sample Receipt Date	23.11.2023	Location Co-ordinates	12°20'45.14"N 78°17'0.08"E

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Total Coliforms	IS 1622	MPN/100ml	27
2	<i>Escherichia coli</i>	IS 1622	MPN/100ml	11

Note: MPN- Most Probable Number.

For Global Lab and Consultancy Services



L. Dineshkumar
Authorised Signatory

L. DINESHKUMAR
Technical Manager-Microbiology

*****End of Report*****

Page 3 of 3

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting an E-mail request with report number and report date along with report copy.

TEST REPORT

Report Number: GLCS/TR/8023/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2Liters
Sample Name	Surface Water -2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /8023	Sample Receipt Date	23.11.2023
Location Name	SW-2- Maruderi Lake	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	23.12.2023
Location Co-ordinates	12°20'45.14"N 78°17'0.08"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Total Suspended Solids	IS 3025 PART 17	mg/l	7.0
2	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)
3	Anionic Detergents	IS 13428 ANNEX K	mg/l	BDL(DL:0.05)
4	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
5	Sulphide	GLCS/SOP/W/66	mg/l	3.2
6	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
7	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
8	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
9	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
10	Aluminium as Al	GLCS/SOP/W/62	mg/l	0.066
11	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
12	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
13	Chromium as Cr 6+	ITC/CHN/FD/STP/020	mg/l	BDL(DL:0.01)
14	Barium as Ba	GLCS/SOP/W/62	mg/l	0.326
15	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
16	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)

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

For Global Lab and Consultancy Services



*****End of Report*****

Page 1 of 1

Authorised Signatory
L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000008423F

Report Number: GLCS/TR/8024/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2Liters
Sample Name	Well Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /8024	Sample Receipt Date	23.11.2023
Location Name	Near Project Area	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	23.12.2023
Location Co-ordinates	12°21'59.72"N 78°17'23.00"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	<5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	7.50
4	Electrical Conductivity	IS 3025 PART14	µS/cm	529
5	Turbidity	IS 3025 PART10	NTU	<1
6	Total Dissolved Solids	IS 3025 PART16	mg/l	312
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	144.7
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	168
9	Calcium as Ca	IS 3025 PART40	mg/l	43.2

For Global Lab and Consultancy Services




Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 1 of 3

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TEST REPORT

ULR-TC606023000008423F

Report Number: GLCS/TR/8024/2023-24(1)

Report Date: 28.12.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
10	Magnesium as Mg	IS 3025 PART 46	mg/l	14.5
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	167.4
12	Sulphate as SO ₄ ⁻	IS 3025 PART 24	mg/l	35.15
13	Iron as Fe	IS 3025 PART 53	mg/l	0.20
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	0.10
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL :2.0)
19	Total Suspended Solids	IS 3025 PART 17	mg/l	BDL(DL:2.0)

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

For Global Lab and Consultancy Services




Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 2 of 3

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TEST REPORT

ULR-TC606023000008423F

Report Number: GLCS/TR/8024/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Good
Customer Ref No	3922	Sample Quantity	250 ml
Sample Name	Well Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS /8024	Date of Analysis	23.11.2023
Location Name	Near Project Area	Date of Completion	24.11.2023
Sample Receipt Date	23.11.2023	Location Co-ordinates	11°14'59.78"N 78°17'23.00"E

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Total Coliforms	IS 15185	Per 100ml	Absent
2	Escherichia coli	IS 15185	Per 100ml	Absent

For Global Lab and Consultancy Services




Authorised Signatory

L. DINESHKUMAR
Technical Manager-Microbiology

*****End of Report*****

Page 3 of 3

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TEST REPORT

Report Number: GLCS/TR/8024/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area: 1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2Liters
Sample Name	Well Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /8024	Sample Receipt Date	23.11.2023
Location Name	Near Project Area	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	23.12.2023
Location Co-ordinates	12°21'59.72"N 78°17'23.00"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)
2	Anionic Detergents	IS 13428 ANNEX K	mg/l	BDL(DL:0.05)
3	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
4	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1)
5	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
6	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
7	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
8	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
9	Aluminium as Al	GLCS/SOP/W/62	mg/l	0.073
10	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
11	Zinc as Zn	GLCS/SOP/W/62	mg/l	0.013
12	Chromium as Cr 6+	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)
13	Barium as Ba	GLCS/SOP/W/62	mg/l	0.188
14	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
15	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
16	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)

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

For Global Lab and Consultancy Services



*****End of Report*****

Page 1 of 1

(Signature)
Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

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TEST REPORT

ULR-TC606023000008424F

Report Number: GLCS/TR/8025/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2Liters
Sample Name	Well Water -2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /8025	Sample Receipt Date	23.11.2023
Location Name	Thoppadikuppam	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	23.12.2023
Location Co-ordinates	12°22'40.26"N 78°19'58.82"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	<5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART11	-	7.43
4	Electrical Conductivity	IS 3025 PART14	µS/cm	766
5	Turbidity	IS 3025 PART10	NTU	<1
6	Total Dissolved Solids	IS 3025 PART16	mg/l	452
7	Total Alkalinity as CaCO ₃	IS 3025 PART 23	mg/l	124.6
8	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	180.0
9	Calcium as Ca	IS 3025 PART40	mg/l	44.8



For Global Lab and Consultancy Services


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 1 of 3

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TEST REPORT

ULR-TC606023000008424F

Report Number: GLCS/TR/8025/2023-24(1)

Report Date: 28.12.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
10	Magnesium as Mg	IS 3025 PART 46	mg/l	16.5
11	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	161.3
12	Sulphate as SO ₄ ²⁻	IS 3025 PART 24	mg/l	35.7
13	Iron as Fe	IS 3025 PART 53	mg/l	0.20
14	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
15	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
16	Fluoride as F	GLCS/SOP/W/015	mg/l	0.10
17	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL :2.0)
19	Total Suspended Solids	IS 3025 PART 17	mg/l	BDL(DL :2.0)

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

For Global Lab and Consultancy Services




Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 2 of 2

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TEST REPORT

ULR-TC606023000008424F

Report Number: GLCS/TR/8025/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Good
Customer Ref No	3922	Sample Quantity	250 ml
Sample Name	Well Water -2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS /8025	Date of Analysis	23.11.2023
Location Name	Thoppadikuppam	Date of Completion	24.11.2023
Sample Receipt Date	23.11.2023	Location Co-ordinates	12°22'40.26"N 78°19'58.82"E

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Total Coliforms	IS 15185	Per 100ml	Absent
2	<i>Escherichia coli</i>	IS 15185	Per 100ml	Absent



For Global Lab and Consultancy Services


Authorised Signatory
L. DINESHKUMAR
Technical Manager-Microbiology

*****End of Report*****

Page 3 of 3

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting an E-mail request with report number and report date along with report copy.

TEST REPORT

Report Number: GLCS/TR/8025/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2Liters
Sample Name	Well Water -2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Sample Code	GLCS /8025	Sample Receipt Date	23.11.2023
Location Name	Thoppadikuppam	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	23.12.2023
Location Co-ordinates	12°22'40.26"N 78°19'58.82"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Phenolic Compounds	IS 3025 PART 43	mg/l	BDL(DL:0.1)
2	Anionic Detergents	IS 13428 ANNEX K	mg/l	BDL(DL:0.05)
3	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
4	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1)
5	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
6	Mercury (Hg)	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
7	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
8	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
9	Aluminium as Al	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
10	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
11	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
12	Chromium as Cr 6 ⁺	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)
13	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
14	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
15	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
16	Ammonia as NH ₃	IS 3025 PART 34	mg/l	BDL(DL:1.0)

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



For Global Lab and Consultancy Services

*****End of Report*****

Page 1 of 1

Authorised Signatory
L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000008425F

Report Number: GLCS/TR/8026/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Good
TRF No.	3922	Sample Quantity	2liters
Sample Name	Borewell Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Location	Near Project Area	Date of Analysis	23.11.2023
Sample Code	GLCS /8026	Date of Completion	23.12.2023
Sample Receipt Date	23.11.2023		
Location Co-ordinates	12°22'38.80"N 78°17'16.40"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	< 5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART 11	-	7.62
4	Electrical Conductivity	IS 3025 PART 14	µS/cm	555
5	Turbidity	IS 3025 PART 10	NTU	<1
6	Total Dissolved Solids	IS 3025 PART 16	mg/l	327
7	Total Suspended Solids	IS 3025 PART 17	mg/l	<2

Note: BDL- Below Detection Limit, DL- Detection Limit.

For Global Lab and Consultancy Services



Page 1 of 3


Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

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TEST REPORT

ULR-TC606023000008425F

Report Number: GLCS/TR/8026/2023-24(1)

Report Date: 28.12.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
8	Total Alkalinity	IS 3025 PART 23	mg/l	132.6
9	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	140
10	Calcium as Ca	IS 3025 PART 40	mg/l	36.8
11	Magnesium as Mg	IS 3025 PART 46	mg/l	11.6
12	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	144.9
13	Sulphate as SO ₄ ⁻	IS 3025 PART 24	mg/l	30.3
14	Iron as Fe	IS 3025 PART 53	mg/l	0.21
15	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
16	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
17	Fluoride as F	GLCS/SOP/W/015	mg/l	0.11
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL :2.0)
19	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)

Note: BDL- Below Detection Limit, DL- Detection Limit

For Global Lab and Consultancy Services



Page 2 of 3


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000008425F

Report Number: GLCS/TR/8026/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Good
TRF No.	3922	Sample Quantity	250 ml
Sample Name	Borewell Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS /8026	Date of Analysis	23.11.2023
Location	Near Project Area	Date of Completion	24.11.2023
Sample Receipt Date	23.11.2023	Location Co-ordinates	12°22'38.80"N 78°17'16.40"E

SI. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Total Coliforms	IS 15185	Per 100ml	Absent
2	Escherichia coli	IS 15185	Per 100ml	Absent



For Global Lab and Consultancy Services


Authorised Signatory

L. DINESHKUMAR
Technical Manager-Microbiology

*****End of Report*****

Page 3 of 3

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TEST REPORT

Report Number: GLCS/TR/8026/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Good
TRF No.	3922	Sample Quantity	2liters
Sample Name	Borewell Water -1	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Location	Near Project Area	Date of Analysis	23.11.2023
Sample Code	GLCS /8026	Date of Completion	23.12.2023
Sample Receipt Date	23.11.2023		
Location Co-ordinates	12°22'38.80"N 78°17'16.40"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
2	Ammonia (NH ₃)	IS 3025 PART 34	mg/l	BDL(DL:1.0)
3	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
4	Aluminium as Al	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
5	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
6	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
7	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
8	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)

Note : BDL – Below Detection Limit, DL – Detection Limit;

For Global Lab and Consultancy Services



Page 1 of 2


 Authorised Signatory
 L. SUDHAPRIYA
 Technical Manager

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TEST REPORT

Report Number: GLCS/TR/8026/2023-24(2)

Report Date: 28.12.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
9	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
10	Anionic Detergents	IS 13428 ANNEX K	mg/l	BDL(DL:0.05)
11	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
12	Phenolic Compounds	IS 3025 PART 43	mg/l	BDQ(DL:0.1)
13	Chromium as Cr 6 ⁺	GLCS/SOP/W/62	mg/l	BDL(DL:0.1)
14	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1.0)
15	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
16	Mercury as Hg	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)

Note : BDL – Below Detection Limit, DL – Detection Limit;

For Global Lab and Consultancy Services



(Signature)
Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

*****End of Report*****
 Page 2 of 2

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200 A

TEST REPORT

ULR-TC606023000008426F

Report Number: GLCS/TR/8027/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Good
TRF No.	3922	Sample Quantity	2liters
Sample Name	Borewell Water - 2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Location	Agaram	Date of Analysis	23.11.2023
Sample Code	GLCS /8027	Date of Completion	23.12.2023
Sample Receipt Date	23.11.2023		
Location Co-ordinates	12°20'30.84"N 78°16'3.35"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Color	IS 3025 PART 4	Hazen	< 5
2	Odor	IS 3025 PART 5	-	Agreeable
3	pH	IS 3025 PART 11	-	7.47
4	Electrical Conductivity	IS 3025 PART 14	µS/cm	688
5	Turbidity	IS 3025 PART 10	NTU	<1
6	Total Dissolved Solids	IS 3025 PART 16	mg/l	394
7	Total Suspended Solids	IS 3025 PART 17	mg/l	<2

Note: BDL- Below Detection Limit, DL- Detection Limit.

For Global Lab and Consultancy Services


Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

Page 1 of 3

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TEST REPORT

ULR-TC606023000008426F

Report Number: GLCS/TR/8027/2023-24(1)

Report Date: 28.12.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
8	Total Alkalinity	IS 3025 PART 23	mg/l	104.5
9	Total Hardness as CaCO ₃	IS 3025 PART 21	mg/l	156
10	Calcium as Ca	IS 3025 PART 40	mg/l	44.8
11	Magnesium as Mg	IS 3025 PART 46	mg/l	10.7
12	Chloride as Cl ⁻	IS 3025 PART 32	mg/l	138.8
13	Sulphate as SO ₄ ⁻	IS 3025 PART 24	mg/l	33.0
14	Iron as Fe	IS 3025 PART 53	mg/l	0.19
15	Boron as B	IS 3025 PART 57	mg/l	BDL(DL:0.1)
16	Free Residual Chlorine as Cl ₂	IS 3025 PART 26	mg/l	BDL(DL:1.0)
17	Fluoride as F	GLCS/SOP/W/015	mg/l	0.12
18	Nitrate as NO ₃	IS 3025 PART 34	mg/l	BDL(DL :2.0)
19	Manganese as Mn	IS 3025 PART 59	mg/l	BDL(DL:0.1)

Note: BDL- Below Detection Limit, DL- Detection Limit

For Global Lab and Consultancy Services


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 2 of 3

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202 A

TEST REPORT

ULR-TC606023000008426F

Report Number: GLCS/TR/8027/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Good
TRF No.	3922	Sample Quantity	250 ml
Sample Name	Borewell Water - 2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/M/SOP-05
Sample Code	GLCS /8027	Date of Analysis	23.11.2023
Sample Receipt Date	23.11.2023	Date of Completion	24.11.2023
Location	Agaram	Location Co-ordinates	12°20'30.84"N 78°16'3.35"E

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Total Coliforms	IS 15185	Per 100ml	Absent
2	<i>Escherichia coli</i>	IS 15185	Per 100ml	Absent



For Global Lab and Consultancy Services


Authorised Signatory

L. DINESHKUMAR
Technical Manager-Microbiology

*****End of Report*****

Page 3 of 3

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TEST REPORT

Report Number: GLCS/TR/8027/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Good
TRF No.	3922	Sample Quantity	2liters
Sample Name	Borewell Water - 2	Sampled by	Laboratory
Sample Description	Liquid	Sampling Method	GLCS/SOP/W/028
Location	Agaram	Date of Analysis	23.11.2023
Sample Code	GLCS /8027	Date of Completion	23.12.2023
Sample Receipt Date	23.11.2023		
Location Co-ordinates	12°20'30.84"N 78°16'3.35"E		

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Arsenic as As	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
2	Ammonia (NH ₃)	IS 3025 PART 34	mg/l	BDL(DL:1.0)
3	Zinc as Zn	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
4	Aluminium as Al	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
5	Cadmium as Cd	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
6	Molybdenum as Mo	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
7	Selenium	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)
8	Lead as Pb	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)

Note : BDL – Below Detection Limit, DL – Detection Limit;

For Global Lab and Consultancy Services



Page 1 of 2

(Signature)
Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

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TEST REPORT

Report Number: GLCS/TR/8027/2023-24(2)

Report Date: 28.12.2023

Sl. No.	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
9	Barium as Ba	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
10	Anionic Detergents	IS 13428 ANNEX K	mg/l	BDL(DL:0.05)
11	Cyanide	IS 3025 PART 27	mg/l	BDL(DL:0.02)
12	Phenolic Compounds	IS 3025 PART 43	mg/l	BDQ(DL:0.1)
13	Chromium as Cr 6 ⁺	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
14	Sulphide	GLCS/SOP/W/66	mg/l	BDL(DL:1.0)
15	Copper as Cu	GLCS/SOP/W/62	mg/l	BDL(DL:0.01)
16	Mercury as Hg	GLCS/SOP/W/62	mg/l	BDL(DL:0.002)

Note : BDL – Below Detection Limit, DL – Detection Limit;

For Global Lab and Consultancy Services




 Authorised Signatory
 L. SUDHAPRIYA
 Technical Manager

*****End of Report*****
Page 2 of 2

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TEST REPORT

ULR-TC606023000008427F

Report Number: GLCS/TR/8028/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil -1	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8028	Sample Receipt Date	23.11.2023
Location Name	Adjacent Proposed Area	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°22'24.00"N 78°17'8.39"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	2.30
2	pH	IS 2720 PART 26	-	7.05
3	Specific Electrical Conductivity	IS 14767	µS/cm	378
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	14.0
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.33
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	4.2

For Global Lab and Consultancy Services




Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 1 of 2

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206A

TEST REPORT

ULR-TC606023000008427F

Report Number: GLCS/TR/8028/2023-24(1)

Report Date: 28.12.2023

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	2.2
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	10.4
9	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	18.0
10	Bulk Density	GLCS/SOP/S/017	g/cc	1.05
11	Sand	GLCS/SOP/S/015	%	34.92
12	Silt	GLCS/SOP/S/015	%	44.06
13	Clay	GLCS/SOP/S/015	%	21.01
14	Water Holding Capacity	GLCS/SOP/S/016	%	40.6
15	Available Nitrogen as N	GLCS/SOP/S/029	Kg/ha	200.7
16	Chloride	GLCS/SOP/S/004	meq/l	8.7

For Global Lab and Consultancy Services


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

*****End of Report*****

Page 2 of 2

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TEST REPORT

Report Number: GLCS/TR/8028/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil -1	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8028	Sample Receipt Date	23.11.2023
Location Name	Adjacent Proposed Area	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°22'24.00"N 78°17'8.39"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permiability	By Permeameter	%	42.8
2	Manganese as Mn	USEPA Method	mg/kg	9.15
3	Zinc as Zn	USEPA Method	mg/kg	25.06
4	Cadmium as Cd	USEPA Method	mg/kg	8.06
5	Chromium as Cr 6+	USEPA Method	mg/kg	14.38
6	Copper as Cu	USEPA Method	mg/kg	4.14
7	Lead as Pb	USEPA Method	mg/kg	BDL(DL:0.5)
8	Iron as Fe	USEPA Method	mg/kg	13.00
9	Organic Carbon	GLCS/SOP/S/003	%	1.30
10	Boron as B	USEPA Method	mg/kg	3.70

NOTE: BDL- Below Detection Limit; DL- Detection Limit

For Global Lab and Consultancy Services

*****End of Report*****

Page 1 of 1

Authorised Signatory
L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000008428F

Report Number: GLCS/TR/8029/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1,54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil - 2	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8029	Sample Receipt Date	23.11.2023
Location Name	N-Thattakkal	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°22'9.43"N 78°17'30.23"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	2.04
2	pH	IS 2720 PART 26	-	7.09
3	Specific Electrical Conductivity	IS 14767	µS/cm	395
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	14.0
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.41
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	4.8

For Global Lab and Consultancy Services


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 1 of 2

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting on E-mail request with 209A number and report date along with report copy.

TEST REPORT

ULR-TC606023000008428F

Report Number: GLCS/TR/8029/2023-24(1)

Report Date: 28.12.2023

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	2.4
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	12.6
9	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	22.2
10	Bulk Density	GLCS/SOP/S/017	g/cc	1.07
11	Sand	GLCS/SOP/S/015	%	33.41
12	Slit	GLCS/SOP/S/015	%	44.69
13	Clay	GLCS/SOP/S/015	%	21.90
14	Water Holding Capacity	GLCS/SOP/S/016	%	42.0
15	Available Nitrogen as N	GLCS/SOP/S/029	Kg/ha	125.4
16	Chloride	GLCS/SOP/S/004	meq/l	10.2

For Global Lab and Consultancy Services


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

*****End of Report*****

Page 2 of 2

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting on E-mail request with 210A number and report date along with report copy.

TEST REPORT

Report Number: GLCS/TR/8029/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil - 2	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8029	Sample Receipt Date	23.11.2023
Location Name	N-Thattakkal	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°22'9.43"N 78°17'30.23"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permiability	By Permeameter	%	45.1
2	Manganese as Mn	USEPA Method	mg/kg	9.81
3	Zinc as Zn	USEPA Method	mg/kg	25.06
4	Cadmium as Cd	USEPA Method	mg/kg	14.38
5	Chromium as Cr 6 ⁺	USEPA Method	mg/kg	13.73
6	Copper as Cu	USEPA Method	mg/kg	10.68
7	Lead as Pb	USEPA Method	mg/kg	BDL(DL:0.5)
8	Iron as Fe	USEPA Method	mg/kg	25.28
9	Organic Carbon	GLCS/SOP/S/003	%	1.18
10	Boron as B	USEPA Method	mg/kg	3.27

For Global Lab and Consultancy Services

L. Sudhapriya
Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

*****End of Report*****
 Page 1 of 1

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TEST REPORT

ULR-TC606023000008429F

Report Number: GLCS/TR/8030/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil - 3	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8030	Sample Receipt Date	23.11.2023
Location Name	Agaram	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°20'31.94"N 78°16'2.90"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	2.07
2	pH	IS 2720 PART 26	-	6.54
3	Specific Electrical Conductivity	IS 14767	µS/cm	345
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	14.0
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.67
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	3.8

For Global Lab and Consultancy Services


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 1 of 2

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TEST REPORT

ULR-TC606023000008429F

Report Number: GLCS/TR/8030/2023-24(1)

Report Date: 28.12.2023

SI. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	1.6
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	11.0
9	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	20.1
10	Bulk Density	GLCS/SOP/S/017	g/cc	1.07
11	Sand	GLCS/SOP/S/015	%	37.02
12	Silt	GLCS/SOP/S/015	%	36.85
13	Clay	GLCS/SOP/S/015	%	26.13
14	Water Holding Capacity	GLCS/SOP/S/016	%	45.2
15	Available Nitrogen as N	GLCS/SOP/S/029	Kg/ha	112.8
16	Chloride	GLCS/SOP/S/004	meq/l	9.6

For Global Lab and Consultancy Services

*****End of Report*****

Page 2 of 2

Authorised Signatory

L. SUDHAPRIYA

Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 14 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept any liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test report's issued by us can be verified by submitting an E-mail request with report number and report date along with report copy.

213A

TEST REPORT

Report Number: GLCS/TR/8030/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil - 3	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8030	Sample Receipt Date	23.11.2023
Location Name	Agaram	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°20'31.94"N 78°16'2.90"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permiability	By Permeameter	%	43.3
2	Manganese as Mn	USEPA Method	mg/kg	BDL(DL:0.5)
3	Zinc as Zn	USEPA Method	mg/kg	24.62
4	Cadmium as Cd	USEPA Method	mg/kg	8.93
5	Chromium as Cr 6 ⁺	USEPA Method	mg/kg	12.86
6	Copper as Cu	USEPA Method	mg/kg	10.24
7	Lead as Pb	USEPA Method	mg/kg	1.09
8	Iron as Fe	USEPA Method	mg/kg	28.55
9	Organic Carbon	GLCS/SOP/S/003	%	1.20
10	Boron as B	USEPA Method	mg/kg	2.61

NOTE: BDL- Below Detection Limit; DL- Detection Limit

For Global Lab and Consultancy Services


Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

*****End of Report*****

Page 1 of 1

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TEST REPORT

ULR-TC606023000008430F

Report Number: GLCS/TR/8031/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area: 1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil - 4	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8031	Sample Receipt Date	23.11.2023
Location Name	Baleguli	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°25'5.37"N 78°16'34.60"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	1.65
2	pH	IS 2720 PART 26	-	7.21
3	Specific Electrical Conductivity	IS 14767	µS/cm	258
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	14.2
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.16
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	4.6

For Global Lab and Consultancy Services




Authorised Signatory
L. SUDHAPRIYA
Technical Manager

Page 1 of 2

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TEST REPORT

ULR-TC606023000008430F

Report Number: GLCS/TR/8031/2023-24(1)

Report Date: 28.12.2023

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	2.4
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	10.3
9	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	18.5
10	Bulk Density	GLCS/SOP/S/017	g/cc	1.20
11	Sand	GLCS/SOP/S/015	%	40.00
12	Silt	GLCS/SOP/S/015	%	37.84
13	Clay	GLCS/SOP/S/015	%	21.16
14	Water Holding Capacity	GLCS/SOP/S/016	%	46.8
15	Available Nitrogen as N	GLCS/SOP/S/029	Kg/ha	100.35
16	Chloride	GLCS/SOP/S/004	meq/l	8.3

For Global Lab and Consultancy Services

*****End of Report*****

Page 2 of 2

Authorised Signatory

L. SUDHAPRIYA

Technical Manager

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TEST REPORT

Report Number: GLCS/TR/8031/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil - 4	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8031	Sample Receipt Date	23.11.2023
Location Name	Baleguli	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°25'5.37"N 78°16'34.60"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permiability	By Permeameter	%	44.7
2	Manganese as Mn	USEPA Method	mg/kg	9.81
3	Zinc as Zn	USEPA Method	mg/kg	21.35
4	Cadmium as Cd	USEPA Method	mg/kg	12.86
5	Chromium as Cr 6 ⁺	USEPA Method	mg/kg	10.68
6	Copper as Cu	USEPA Method	mg/kg	BDL(DL:0.5)
7	Lead as Pb	USEPA Method	mg/kg	BDL(DL:0.5)
8	Iron as Fe	USEPA Method	mg/kg	11.11
9	Organic Carbon	GLCS/SOP/S/003	%	0.95
10	Boron as B	USEPA Method	mg/kg	1.31

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

For Global Lab and Consultancy Services

Authorised Signatory
L. SUDHAPRIYA
Technical Manager

*****End of Report*****

Page 1 of

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TEST REPORT

ULR-TC606023000008431F

Report Number: GLCS/TR/8032/2023-24(1)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil - 5	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8032	Sample Receipt Date	23.11.2023
Location Name	Periyakaradiyur	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°20'23.50"N 78°19'33.56"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	2.37
2	pH	IS 2720 PART 26	-	7.11
3	Specific Electrical Conductivity	IS 14767	µS/cm	310
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	14.2
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.46
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	5.0

For Global Lab and Consultancy Services

Page 1 of 2


Authorised Signatory
L. SUDHAPRIYA
 Technical Manager

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218 A

TEST REPORT

ULR-TC606023000008431F

Report Number: GLCS/TR/8032/2023-24(1)

Report Date: 28.12.2023

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	3.2
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	9.6
9	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	16.3
10	Bulk Density	GLCS/SOP/S/017	g/cc	1.11
11	Sand	GLCS/SOP/S/015	%	36.75
12	Silt	GLCS/SOP/S/015	%	38.68
13	Clay	GLCS/SOP/S/015	%	24.57
14	Water Holding Capacity	GLCS/SOP/S/016	%	43.4
15	Available Nitrogen as N	GLCS/SOP/S/029	Kg/ha	175.6
16	Chloride	GLCS/SOP/S/004	meq/l	7.8

For Global Lab and Consultancy Services

*****End of Report*****

Page 2 of 2

Authorised Signatory

L. SUDHAPRIYA

Technical Manager

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TEST REPORT

Report Number: GLCS/TR/8032/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil - 5	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8032	Sample Receipt Date	23.11.2023
Location Name	Periyakaradiyur	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°20'23.50"N 78°19'33.56"E		

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permiability	By Permeameter	%	40.9
2	Manganese as Mn	USEPA Method	mg/kg	8.72
3	Zinc as Zn	USEPA Method	mg/kg	20.48
4	Cadmium as Cd	USEPA Method	mg/kg	14.16
5	Chromium as Cr 6*	USEPA Method	mg/kg	16.34
6	Copper as Cu	USEPA Method	mg/kg	10.90
7	Lead as Pb	USEPA Method	mg/kg	BDL(DL:0.5)
8	Iron as Fe	USEPA Method	mg/kg	12.20
9	Organic Carbon	GLCS/SOP/S/003	%	1.37
10	Boron as B	USEPA Method	mg/kg	2.61

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

For Global Lab and Consultancy Services

Authorised Signatory
L. SUDHAPRIYA
Technical Manager

*****End of Report*****

Page 1 of 1

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TEST REPORT

ULR-TC606023000008432F

Report Number: GLCS/TR/8033/2023-24(1)

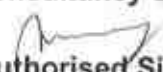
Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil - 6	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8033	Sample Receipt Date	23.11.2023
Location Name	Thoppadikuppam	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°22'42.37"N 78°19'59.52"E		

SI. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Organic Matter	GLCS/SOP/S/003	%	2.78
2	pH	IS 2720 PART 26	-	7.03
3	Specific Electrical Conductivity	IS 14767	µS/cm	283
4	Available Phosphorous	GLCS/SOP/S/005	mg/kg	14.3
5	Available Potassium	GLCS/SOP/S/026	meq/l	1.33
6	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020	meq/100g	2.0

For Global Lab and Consultancy Services

Page 1 of 2


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000008432F

Report Number: GLCS/TR/8033/2023-24(1)

Report Date: 28.12.2023

Sl. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
7	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021	meq/100g	1.6
8	Sulphate as SO ₄	GLCS/SOP/S/009	mg/100g	9.0
9	Cation Exchange Capacity	GLCS/SOP/S/024	meq/100g	17.0
10	Bulk Density	GLCS/SOP/S/017	g/cc	1.09
11	Sand	GLCS/SOP/S/015	%	42.91
12	Silt	GLCS/SOP/S/015	%	32.69
13	Clay	GLCS/SOP/S/015	%	24.40
14	Water Holding Capacity	GLCS/SOP/S/016	%	41.6
15	Available Nitrogen as N	GLCS/SOP/S/029	Kg/ha	213.2
16	Chloride	GLCS/SOP/S/004	meq/l	7.6

For Global Lab and Consultancy Services

*****End of Report*****

Page 2 of 2


Authorised Signatory
L. SUDHAPRIYA
Technical Manager

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TEST REPORT

Report Number: GLCS/TR/8033/2023-24(2)

Report Date: 28.12.2023

Issued To: Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address: Lease Area: 1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	-	Sample Receipt Condition	Ambient – Good
Customer Ref No	3922	Sample Quantity	2 kg
Sample Name	Soil - 6	Sampled by	Laboratory
Sample Description	Powder	Sampling Method	GLCS/SOP/S/014
Sample Code	GLCS / 8033	Sample Receipt Date	23.11.2023
Location Name	Thoppadikuppam	Date of Analysis	23.11.2023
Sampling Date	21.11.2023	Date of Completion	22.12.2023
Location Co-ordinates	12°22'42.37"N 78°19'59.52"E		

SI. No	TEST PARAMETERS	TEST METHOD	UNIT	RESULTS
1	Permiability	By Permeameter	%	43.2
2	Manganese as Mn	USEPA Method	mg/kg	13.29
3	Zinc as Zn	USEPA Method	mg/kg	21.57
4	Cadmium as Cd	USEPA Method	mg/kg	15.25
5	Chromium as Cr 6 ⁺	USEPA Method	mg/kg	16.34
6	Copper as Cu	USEPA Method	mg/kg	5.67
7	Lead as Pb	USEPA Method	mg/kg	BDL(DL:0.5)
8	Iron as Fe	USEPA Method	mg/kg	16.56
9	Organic Carbon	GLCS/SOP/S/003	%	1.61
10	Boron as B	USEPA Method	mg/kg	5.23

NOTE: BDL- Below Detection Limit; DL- Detection Limit

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L. SUDHAPRIYA
 Technical Manager

*****End of Report*****

Page 1 of 1

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TEST REPORT

ULR-TC606023000006484F

Report Number: GLCS/TR/5631/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.		
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active	
TRF No	3558	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Ambient Noise	Sample Code	GLCS/5631	
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023	
Sampling Date	02.10.2023-03.10.2023	Date of Analysis	12.10.2023	
		Date of Completion	02.11.2023	
Location Name	AN1- Project Area	Location Coordinates - 12° 22' 25.34" N 78° 17' 6.60" E		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06.05	38.5	46.5	44.13
2	07.05	39.6	49.1	46.55
3	08.05	39.5	48.5	46.00
4	09.05	41.5	53.2	50.47
5	10.05	41.2	54.5	51.69
6	11.05	41.5	52.5	49.82
7	12.05	39.8	53.6	50.77
8	13.05	39.5	51.5	48.76
9	14.05	35.8	51.4	48.51
10	15.05	36.9	50.3	47.48
11	16.05	37.1	54.2	51.27
12	17.05	40.1	48.5	46.08
13	18.05	35.6	47.5	44.76
14	19.05	35.6	45.6	43.00
15	20.05	34.6	44.3	41.73



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Technical Manager

Page 1 of 2

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TEST REPORT

ULR-TC606023000006484F

Report Number: GLCS/TR/5631/2023-24

Report Date: 03.11.2023

Issued To : <i>Tvl.A.A.Enterprises,</i> Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active
TRF No	3558	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Ambient Noise	Sample Code	GLCS/5631
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023
Sampling Date	02.10.2023-03.10.2023	Date of Analysis	12.10.2023
		Date of Completion	02.11.2023

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
16	21.05	32.6	43.5	40.83
17	22.05	31.5	41.5	38.90
18	23.05	32.6	38.9	36.80
19	00.05	30.5	35.5	33.68
20	01.05	31.4	35.6	33.99
21	02.05	30.3	33.6	32.26
22	03.05	30.4	34.2	32.70
23	04.05	31.7	33.1	32.46
24	05.05	30.8	34.5	33.03
Day Mean dB(A)				47.0
Night Mean dB(A)				34.2



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*****End of Report*****

Page 2 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000006485F

Report Number: GLCS/TR/5632/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.		
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active	
TRF No	3558	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Ambient Noise	Sample Code	GLCS/5632	
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023	
Sampling Date	02.10.2023-03.10.2023	Date of Analysis	12.10.2023	
		Date of Completion	02.11.2023	
Location Name	AN2- Near Existing Quarry	Location Coordinates - 12°22'38.31"N 78°16'58.15"E		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06.20	40.5	48.5	46.13
2	07.20	41.6	50.1	47.66
3	08.20	41.5	53.6	50.85
4	09.20	42.5	53.5	50.82
5	10.20	43.6	57.5	54.66
6	11.20	42.8	55.6	52.81
7	12.20	41.7	56.2	53.34
8	13.20	40.5	52.6	49.85
9	14.20	41.8	55.9	53.06
10	15.20	41.2	56.1	53.23
11	16.20	40.5	58.1	55.16
12	17.20	40.3	52.6	49.84
13	18.20	41.5	55.9	48.09
14	19.20	42.5	56.1	45.53
15	20.20	40.9	58.1	43.56



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Technical Manager

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TEST REPORT

ULR-TC606023000006485F

Report Number: GLCS/TR/5632/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner,S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active
TRF No	3558	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Ambient Noise	Sample Code	GLCS/5632
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023
Sampling Date	02.10.2023-03.10.2023	Date of Analysis	12.10.2023
		Date of Completion	02.11.2023

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
16	21.20	38.4	42.5	40.92
17	22.20	32.1	41.5	38.96
18	23.20	30.4	37.5	35.26
19	00.20	31.5	36.3	34.53
20	01.20	30.6	35.5	33.71
21	02.20	31.1	35.7	33.98
22	03.20	30.5	35.6	33.76
23	04.20	31.4	36.2	34.43
24	05.20	30.9	35.1	33.49
Day Mean dB(A)				49.7
Night Mean dB(A)				35.4



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*****End of Report*****

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L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000006486F

Report Number: GLCS/TR/5633/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.		
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active	
TRF No	3558	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Ambient Noise	Sample Code	GLCS/5633	
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023	
Sampling Date	02.10.2023-03.10.2023	Date of Analysis	12.10.2023	
		Date of Completion	02.11.2023	
Location Name	AN3- N.Thattakkal	Location Coordinates - 12°22'12.77"N 78°17'29.95"E		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06.40	38.9	50.1	47.41
2	07.40	40.8	51.8	49.12
3	08.40	40.1	52.5	49.73
4	09.40	41.5	53.7	50.94
5	10.40	40.9	54.9	52.06
6	11.40	42.5	54.2	51.47
7	12.40	41.7	53.9	51.14
8	13.40	42.6	52.4	49.82
9	14.40	43.6	53.7	51.09
10	15.40	41.2	54.1	51.31
11	16.40	40.8	53.7	50.91
12	17.40	39.5	50.5	47.82
13	18.40	37.5	45.6	43.22
14	19.40	36.6	42.8	40.72
15	20.40	37.1	45.3	42.90



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TEST REPORT

ULR-TC606023000006486F

Report Number: GLCS/TR/5633/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active
TRF No	3558	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Ambient Noise	Sample Code	GLCS/5633
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023
Sampling Date	02.10.2023-03.10.2023	Date of Analysis	12.10.2023
		Date of Completion	02.11.2023

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
16	21.40	35.8	46.3	43.66
17	22.40	32.5	42.4	39.81
18	23.40	31.7	40.5	38.03
19	00.40	30.9	37.5	35.35
20	01.40	30.2	36.3	34.24
21	02.40	31.5	36.7	34.84
22	03.40	30.8	35.6	33.83
23	04.40	31.4	35.7	34.06
24	05.40	31.5	36.3	34.53
Day Mean dB(A)				47.8
Night Mean dB(A)				35.6

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*****End of Report*****
Page 2 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000006487F

Report Number: GLCS/TR/5634/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner,S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.		
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active	
TRF No	3558	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Ambient Noise	Sample Code	GLCS/5634	
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023	
Sampling Date	02.10.2023-03.10.2023	Date of Analysis	12.10.2023	
		Date of Completion	02.11.2023	
Location Name	AN4- Agaram	Location Coordinates - 12° 20' 30.30" N 78° 16' 3.60" E		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06.10	42.1	53.6	50.89
2	07.10	43.5	54.1	51.45
3	08.10	44.3	55.5	52.81
4	09.10	43.6	56.9	54.09
5	10.10	44.1	53.5	50.96
6	11.10	45.2	54.8	52.24
7	12.10	43.9	54.1	51.49
8	13.10	44.1	55.2	52.51
9	14.10	43.6	52.9	50.37
10	15.10	42.2	51.6	49.06
11	16.10	40.9	50.1	47.58
12	17.10	40.2	49.5	46.97
13	18.10	38.2	48.5	45.88
14	19.10	36.6	40.1	38.69
15	20.10	33.5	38.8	36.91



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Page 1 of 2


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TEST REPORT

ULR-TC606023000006487F

Report Number: GLCS/TR/5634/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area: 1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active
TRF No	3558	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Ambient Noise	Sample Code	GLCS/5634
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023
Sampling Date	02.10.2023-03.10.2023	Date of Analysis	12.10.2023
		Date of Completion	02.11.2023

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
16	21.10	34.1	39.1	37.28
17	22.10	32.3	36.6	34.96
18	23.10	33.8	37.1	35.76
19	00.10	31.5	36.5	34.68
20	01.10	32.5	36.1	34.66
21	02.10	33.3	35.6	34.60
22	03.10	31.7	34.8	33.52
23	04.10	40.2	49.8	47.24
24	05.10	41.9	50.2	47.79
Day Mean dB(A)				48.64
Night Mean dB(A)				35.30

For Global Lab and Consultancy Service



*****End of Report*****

Page 2 of 2


Authorised Signatory

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000006488F

Report Number: GLCS/TR/5635/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner,S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.		
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active	
TRF No	3558	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Ambient Noise	Sample Code	GLCS/5635	
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023	
Sampling Date	03.10.2023-04.10.2023	Date of Analysis	12.10.2023	
		Date of Completion	02.11.2023	
Location Name	AN5- Baleguli	Location Coordinates - 12°25'5.07"N 78°16'34.61"E		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06.40	40.2	48.9	46.44
2	07.40	40.6	49.1	46.66
3	08.40	41.5	51.5	48.90
4	09.40	42.9	50.6	48.27
5	10.40	43.5	52.1	49.65
6	11.40	45.5	52.7	50.45
7	12.40	43.7	53.6	51.01
8	13.40	42.5	54.1	51.38
9	14.40	43.8	51.9	49.52
10	15.40	41.9	50.2	47.79
11	16.40	40.7	49.1	46.68
12	17.40	39.6	48.6	46.10
13	18.40	38.5	49.2	46.54
14	19.40	40.1	49.8	47.23
15	20.40	33.6	41.5	39.14

For Global Lab and Consultancy Services



Page 1 of 2

Authorised Signatory

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000006488F

Report Number: GLCS/TR/5635/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active
TRF No	3558	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Ambient Noise	Sample Code	GLCS/5635
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023
Sampling Date	03.10.2023-04.10.2023	Date of Analysis	12.10.2023
		Date of Completion	02.11.2023

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
16	21.40	34.1	42.1	39.73
17	22.40	33.5	37.9	36.23
18	23.40	32.2	36.1	34.57
19	00.40	30.9	36.4	34.47
20	01.40	30.5	35.3	33.53
21	02.40	31.4	36.1	34.36
22	03.40	32.5	35.8	34.46
23	04.40	31.3	36.1	34.33
24	05.40	39.9	45.9	43.86
Day Mean dB(A)				47.48
Night Mean dB(A)				35.21

For Global Lab and Consultancy Service



*****End of Report*****

Page 2 of 2


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L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000006489F

Report Number: GLCS/TR/5636/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner,S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.		
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active	
TRF No	3558	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Ambient Noise	Sample Code	GLCS/5636	
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023	
Sampling Date	03.10.2023-04.10.2023	Date of Analysis	12.10.2023	
		Date of Completion	02.11.2023	
Location Name	AN6- Periyakaradiyur	Location Coordinates - 12°20'24.31"N 78°19'32.92"E		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06.10	38.9	48.5	45.94
2	07.10	39.1	49.1	46.50
3	08.10	40.5	50.9	48.27
4	09.10	40.9	51.3	48.67
5	10.10	41.7	53.1	50.39
6	11.10	42.6	54.9	52.14
7	12.10	39.8	55.9	53.00
8	13.10	42.3	56.3	53.46
9	14.10	43.6	55.1	52.39
* 10	15.10	42.1	53.8	51.07
11	16.10	44.3	54.4	51.79
12	17.10	43.7	52.9	50.38
13	18.10	39.5	51.2	48.47
14	19.10	40.2	49.5	46.97
15	20.10	38.9	48.9	46.30



For Global Lab and Consultancy Services

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L. SUDHAPRIYA
Technical Manager

Page 1 of 2

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TEST REPORT

ULR-TC606023000006489F

Report Number: GLCS/TR/5636/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.		
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active	
TRF No	3558	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Ambient Noise	Sample Code	GLCS/5636	
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023	
Sampling Date	03.10.2023-04.10.2023	Date of Analysis	12.10.2023	
		Date of Completion	02.11.2023	
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
16	21.10	37.4	45.5	43.12
17	22.10	34.6	41.5	39.30
18	23.10	33.5	37.4	35.87
19	00.10	32.1	35.6	34.19
20	01.10	33.8	34.2	34.00
21	02.10	32.9	35.2	34.20
22	03.10	31.7	36.1	34.43
23	04.10	30.3	34.5	32.89
24	05.10	32.5	35.9	34.52
Day Mean dB(A)			49.30	
Night Mean dB(A)			35.84	

For Global Lab and Consultancy Service



*****End of Report*****

Page 2 of 2


Authorised Signatory

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000006490F

Report Number: GLCS/TR/5637/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.		
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active	
TRF No	3558	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Ambient Noise	Sample Code	GLCS/5637	
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023	
Sampling Date	03.10.2023-04.10.2023	Date of Analysis	12.10.2023	
		Date of Completion	02.11.2023	
Location Name	AN7- Penneswaramadam	Location Coordinates - 12°23'37.06"N 78°14'42.38"E		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06.25	41.4	50.9	48.35
2	07.25	43.2	52.3	49.79
3	08.25	43.9	52.8	50.32
4	09.25	43.4	53.1	50.53
5	10.25	44.8	54.3	51.75
6	11.25	45.3	54.7	52.16
7	12.25	43.8	53.6	51.02
8	13.25	45.1	53.9	51.43
9	14.25	42.5	51.1	48.65
10	15.25	41.4	50.3	47.82
11	16.25	40.7	49.9	47.38
12	17.25	38.3	48.4	45.79
13	18.25	39.8	47.2	44.92
14	19.25	38.1	46.6	44.16
15	20.25	37.7	45.2	42.90

For Global Lab and Consultancy Services



Page 1 of 2


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TEST REPORT

ULR-TC606023000006490F

Report Number: GLCS/TR/5637/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner,S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active
TRF No	3558	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Ambient Noise	Sample Code	GLCS/5637
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023
Sampling Date	03.10.2023-04.10.2023	Date of Analysis	12.10.2023
		Date of Completion	02.11.2023

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
16	21.25	35.3	41.5	39.42
17	22.25	34.8	38.9	37.32
18	23.25	33.1	37.1	35.55
19	00.25	32.2	36.9	35.16
20	01.25	31.5	35.9	34.23
21	02.25	33.7	37.1	35.72
22	03.25	34.2	39.7	37.77
23	04.25	33.6	38.5	36.71
24	05.25	40.9	49.2	46.79
Day Mean dB(A)				47.83
Night Mean dB(A)				37.20



For Global Lab and Consultancy Services


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*****End of Report*****

Page 2 of 2

L. SUDHAPRIYA
Technical Manager

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TEST REPORT

ULR-TC606023000006491F

Report Number: GLCS/TR/5638/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner,S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.		
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active	
TRF No	3558	Sampled by	Laboratory	
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014	
Sample Description	Ambient Noise	Sample Code	GLCS/5638	
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023	
Sampling Date	03.10.2023-04.10.2023	Date of Analysis	12.10.2023	
		Date of Completion	02.11.2023	
Location Name	AN8 - Thoppadikuppam	Location Coordinates - 12°22'42.84"N 78°19'58.32"E		
S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
1	06.00	40.2	48.4	46.00
2	07.00	41.9	50.2	47.79
3	08.00	43.6	52.6	50.10
4	09.00	42.2	51.1	48.62
5	10.00	43.1	54.7	51.98
6	11.00	44.6	55.2	52.55
7	12.00	44.1	55.3	52.61
8	13.00	45.7	56.9	54.241
9	14.00	45.2	55.2	52.60
10	15.00	43.9	54.9	52.22
11	16.00	42.3	52.9	50.25
12	17.00	42.9	53.8	51.13
13	18.00	41.1	52.2	49.51
14	19.00	40.8	48.5	46.17
15	20.00	39.4	45.1	43.12



For Global Lab and Consultancy Services

Page 1 of 2


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Report Number: GLCS/TR/5638/2023-24

Report Date: 03.11.2023

Issued To : Tvl.A.A.Enterprises, Managing Partner, S.Ramasubramaniam, D.No.93 & 94, Poombugar Nagar, Valar Nagar, Uthangudi, Madurai District, Tamilnadu - 625 107.		Site Address : Lease Area:1.54.0Ha S.F.No.609A(Part)(Bit-5) of Nagojanahalli Village, Pochampalli Taluk, Krishnagiri District.	
Attention	S.Ramasubramaniam	Sampling Condition	Good - Active
TRF No	3558	Sampled by	Laboratory
Sample Name	Noise Level Monitoring	Sampling Method	GLCS/SOP/N/014
Sample Description	Ambient Noise	Sample Code	GLCS/5638
Sampling Time	Every 60 minutes	Sample Receipt Date	12.10.2023
Sampling Date	03.10.2023-04.10.2023	Date of Analysis	12.10.2023
		Date of Completion	02.11.2023

S. No	Time(Hrs)	Min dB(A)	Max dB(A)	Leq dB(A)
16	21.00	36.1	44.1	41.73
17	22.00	34.5	40.1	38.15
18	23.00	34.9	39.8	38.01
19	00.00	33.1	38.5	36.59
20	01.00	33.1	40.1	37.88
21	02.00	30.8	36.6	34.60
22	03.00	32.4	36.1	34.63
23	04.00	31.8	35.5	34.03
24	05.00	32.2	36.7	35.01
Day Mean dB(A)				48.75
Night Mean dB(A)				36.74

For Global Lab and Consultancy Services



(Signature)
Authorised Signatory

*****End of Report*****

Page 2 of 2

L. SUDHAPRIYA
Technical Manager

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National Accreditation Board for Education and Training



Certificate of Accreditation

Geo Exploration & Mining Solutions, Salem

No. 17, Advaita Ashram Road, Fairlands, Salem – 636 004, Tamilnadu, India.

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

S.No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals opencast only	1	1 (a) (i)	A
2	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	B
3	Building and construction projects	38	8(a)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated Jan 06, 2023 and posted on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no QCI/NABET/ENV/ACO/23/2684 dated Feb 20, 2023. The accreditation needs to be renewed before the expiry date by Geo Exploration & Mining Solutions, Salem following due process of assessment.

Sr. Director, NABET
Dated: Feb 20, 2023

Certificate No.
NABET/EIA/2225/RA 0276

Valid up to
August 06, 2025

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

