

**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 –
OWN PATTA LAND**

CLUSTER EXTENT = 6.62.5 ha (2 Proposed + 1 Existing quarries)

THIRU. S. ABDUL JABBAR ROUGH STONE AND GRAVEL QUARRY

At

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P)

Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District

Extent : 2.16.5 ha

PROJECT PROPONENT

Thiru. S. Abdul Jabbar,

S/o. Shand Mohammed Rawther, No.3/33, Vadachithur Post,

Kinathukadavu Taluk, Coimbatore District,

Tamil Nadu State – 641 202

Obtained ToR

Lr.No. SEIAA-TN/F.No.8763/SEAC/ToR-1100/2021 Dated: 21.03.2022

Environmental Consultant



GEO EXPLORATION AND MINING SOLUTIONS

Old No. 260-B, New No. 17,

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Accredited for sector 1 Cat ‘A’ & 31 & 38 Cat ‘B’

Certificate No : NABET/EIA/2225/RA 0276



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Laboratory

CHENNAI METTEX LAB PRIVATE LIMITED

**(Approved by AAI, AGMARK, APEDA, BIS, EIC FSSAI, GAFTA,
IOPEPC, MOEF & TEA BOARD)**

Jothi Complex, 83,

M.K.N Road, Guindy,

Chennai – 600 032

Baseline Monitoring Period : OCTOBER 2022 to DECEMBER 2022

AUGUST 2023

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 in Ha	Status	Remarks
P1	Thiru.S.Abdul Jabbar	44/9 (P), 45 (P), 46/1 & 47/3 (P) & Kurunallipalayam		2.16.5	Lr.No. SEIAA-TN/F.No.8763/SEA C/ToR-1100/2021 Dated: 21.03.2022	-
P2	Thiru.S.Abdul Jabbar	43/4(P), 43/5(P), 43/10, 44/6, 44/7, 44/8, 45(P), 47/1(P), 47/2(P) & Kurunallipalayam		2.80.0	Under Examination of SEIAA	
TOTAL EXTENT				4.96.5		
EXISTING QUARRIES						
CODE	Name of the Owner	S.F. Nos & Village		Extent in Ha	Status	Remarks
E1	Thiru.S.Abdul Jabbar	107/1(P) & 108/1(P) & Andipalayam		1.66.0	EC obtained on 20.03.2020	-
TOTAL EXTENT				1.66.0		
EXPIRED QUARRIES						
CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status	Remarks
-	-	-	-	-	-	-
TOTAL CLUSTER EXTENT				6.62.5		

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

TERMS OF REFERENCE (ToR) COMPLIANCE**P1 – Thiru.S.Abdul Jabber****“ToR issued vide Letter No. SEIAA-TN/F.No.8763/SEAC/ToR-1100/2021 Dated:21.03.2022”**

SPECIFIC CONDITIONS		
1.	The Proponent shall carry out the cumulative & comprehensive impact study due to mining operations carried out in the quarry cluster specifically with reference to the environment in terms of air pollution, water pollution. & Health impacts, accordingly the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	Noted and agreed Detailed in chapter-7 and Emp studies in chapter-10
2	The project proponent shall furnish certified EC compliance report along with photographs of fencing and green belt provided to the site	Noted and agreed, already EC clearance no Lr.No.SEIAA-TN/F.No.2388/EC/1(a)/1397/2014 dated: 25.06.2014
3	If the proponent has already carried out the mining actively in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines, a) What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD,/DD mines? b) Quantity of minerals mined out. c) Highest production achieved in any one year d) Detail of approved depth of mining. e) Actual depth of the mining achieved earlier. f) Name of the person already mined in that leases area. g) If EC and CTO already obtained, the copy of the same shall be submitted. h) Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	It is an existing quarry, the applied area has been considered quarrying operation earlier. The quarry lease was previously granted in the favour of Thiru.Abdul Jabbar, Environmental clearance Lr.No.SEIAA-TN/F.No.2388/EC/1(a)/1397/2014 dated: 25.06.2014 CTO: Proceedings No. F.1765CBS/RS/DEE/TNPCB/CBS/W/2017 Dated: 01/08/2017.
4	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).	Map showing – Project area is superimposed on Satellite imagery is enclosed in Figure No. 2.7 Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3, Surface Features around the project area covering 10km radius – Figure No. 2.8, Geology map of the project area covering 10km radius - Figure No. 2.11, Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.12,
5	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	Noted and agreed
6	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	Noted and agreed
7	A safety distance of 10 m should be provided for the vari passing on the western and southern side of the applied area.	Noted and agreed

8	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment	Noted and agreed
9	The Project Proponent shall conduct the hydro-geological study considering the contour map, of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, ' it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	Detailed waterbodies and bore well and open well details in chapter 3
10	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study	Detailed in chapter 3- Baseline environmental details
11	A tree Survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the minirrg lease applied area & 300m buffer zone and its management during mining activity.	Noted and agreed
12	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Detailed in chapter 2 mine closure plan for the proposed project
13	The Public hearing advertisement shall be published in one major National daily and one most circulated vemacular daily	Noted and agreed
14	The recommendation lor the issue of "Terms of Reference" is subjected to the outcome of the Hon'bl-q NGT, Principal Bench, New Delhi in O.A No.186 of 2016 (M.A.No.350/2016) and O.A. No.2b0/2d16 and O.A.No.58012016 (M.A.No.118212016) and O.A.No.102/2017 and O.A.No.40412016 (M.A.No. 75812016, M.A.No.92012016, M.A.No.112212016, M.A.No.1212017 & M.A. No. 843/2017) and O.A.No.40512016 md O.A.No.520 of 2016, (M.A.No. 981/2016,M.A.No.982/2016 & M.A.No.384/2017).	Noted and agreed
15	The purpose of green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees altemating with shrubs should be planted in a mixed manner.	Noted and agreed
16	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper spacing as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the	Noted and agreed

	boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	
17	A Disaster management Plan shall be prepared and included in the EIA/EMP Report	Detailed in chapter -7
18	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report	Detailed in chapter -7
19	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Detailed in chapter -3
20	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	Noted and agreed
21	The PP shall use drone video to cover the cluster area showing clearly the extent of, operation and the surrounding environment and submit the video as part of EIA report	Noted and agreed
22	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted and agreed
ADDITIONAL CONDITIONS		
1	As per the MoEF& CC office memorandum F.No.22-65/2017- A.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.	Noted and agreed
2	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	Detailed in chapter -7
3	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	Detailed in chapter -3
4	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Detailed in chapter -3
5	The project proponent shall study impact on fish habitats and the water body and Reservoir	Detailed in chapter -3- Water environment
6	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components	Detailed in chapter -3-Soil environment and lab details with soil mapping
7	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	Detailed in chapter -3
8	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Noted and agreed

9	The Environmental Impact Assessment should study on wetlands, water bodies. Rivers streams, lakes and farmer sites.	Detailed in chapter -3
10	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan	Detailed in chapter -6 and Chapter-10
11	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock	Noted and agreed
12	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site	Noted and agreed
13	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	Details in Land environment in chapter-3
14	The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities	Noted and agreed
15	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts	Noted and agreed
16	The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported	Noted and agreed
17	The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.	Noted and agreed
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 Own Patta Land. Document is enclosed along with Approved Mining Plan as Annexure Volume 1.
3	All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee	Noted & agreed.
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)	Map showing – Project area is superimposed on Satellite imagery is enclosed in Figure No. 2.7 Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3, Surface Features around the project area covering 10km radius – Figure No. 2.8, Geology map of the project area covering 10km radius - Figure No. 2.11, Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.12,

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	Map showing – Geology map of the project area covering 10km radius - Figure No. 2.11, Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.12,
6	Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority	The applied area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government.
7	It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report	The proponent has framed their Environmental Policy and the same is discussed in the Chapter No 10.1A,
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided	It is an opencast quarrying operation proposed to operate in Mechanized method. The rough stone formation is a hard, compact and homogeneous body. The height and width of the bench will be maintained as 5m with 90° 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 2.4,
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. No need R&R plan
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,	Not Applicable. There is no Forest Land involved in the proposed project area. The proposed project area is a patta land.

	<p>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</p>	<p>Approved Mining Plan is enclosed as Annexure Volume 1.</p>
13	<p>Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.</p>	<p>Not Applicable. The proposed project area does not involve any Forest Land.</p>
14	<p>Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers Recognition of Forest Rights) Act, 2006 should be indicated.</p>	<p>Not Applicable. The project doesn't attract Recognition of Forest Rights Act, 2006.</p>
15	<p>The vegetation in the RF / PF areas in the study area, with necessary details, should be given</p>	<p>No Reserve Forest within the Study Area.</p>
16	<p>A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted</p>	<p>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.</p>
17	<p>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.</p>	<p>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.</p>
18	<p>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.</p>	<p>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</p> <p>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.</p>
19	<p>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</p>	<p>Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range'.</p>

	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).	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 socioeconomic 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 predominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the predominant downwind direction. The mineralogical composition of PM ₁₀ , particularly for free silica, should be given.	Baseline Data were collected for One Season (Oct 2022 to Dec 2022) as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3.
23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly, indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.	Air Quality 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: 5.3 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 minwater 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. Ground water. 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 65-60m below ground level. The ultimate depth of quarry is 47m bgl. This proposal of 47 m below ground level will not intersect the ground water table, which is inferred from the hydro-geological studies 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.	Highest elevation of the project area is 355m AMSL. Ultimate depth of the mine is 47m BGL Water level of the area is 65-60 m BGL
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	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.

	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.	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.
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 42 people directly and 28 people indirectly. Details in Chapter 4.
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. 62,63,000/- CER Cost is Rs.5,00,000/- In order to implement the environmental protection measures, an amount of Rs.62.63 lakhs as capital cost and recurring cost as Rs.2.5 lakhs as recurring cost is proposed considering present market price considering present market scenario for the proposed project.
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Details in Chapter 7.3.
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 reports should be available during appraisal of the Project	Baseline monitoring reports are enclosed with This report in Chapter 3. 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. 2.4 Working Plan – Figure No 2.13 Closure Plan – Figure No.2.16

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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.

Rough Stone and Gravel are the major requirements for construction industry. This EIA report is prepared by considering Cumulative load of proposed & existing quarries of Thiru.S.Abdul Jabbar Rough Stone and Gravel Quarry consisting of two Proposed and one Existing Quarries with total extent of Cluster of **6.62.5 Ha** in Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District and Tamil Nadu State, cluster area calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016.

This EIA Draft is prepared in compliance with ToR obtained vide: **Lr.No. SEIAA-TN/F.No.8763/SEAC/ToR-1100/2021 Dated: 21.03.2022 for P1**

The Baseline Monitoring study has been carried out during Post Moonsoon season (October 2022 to December 2022) and 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

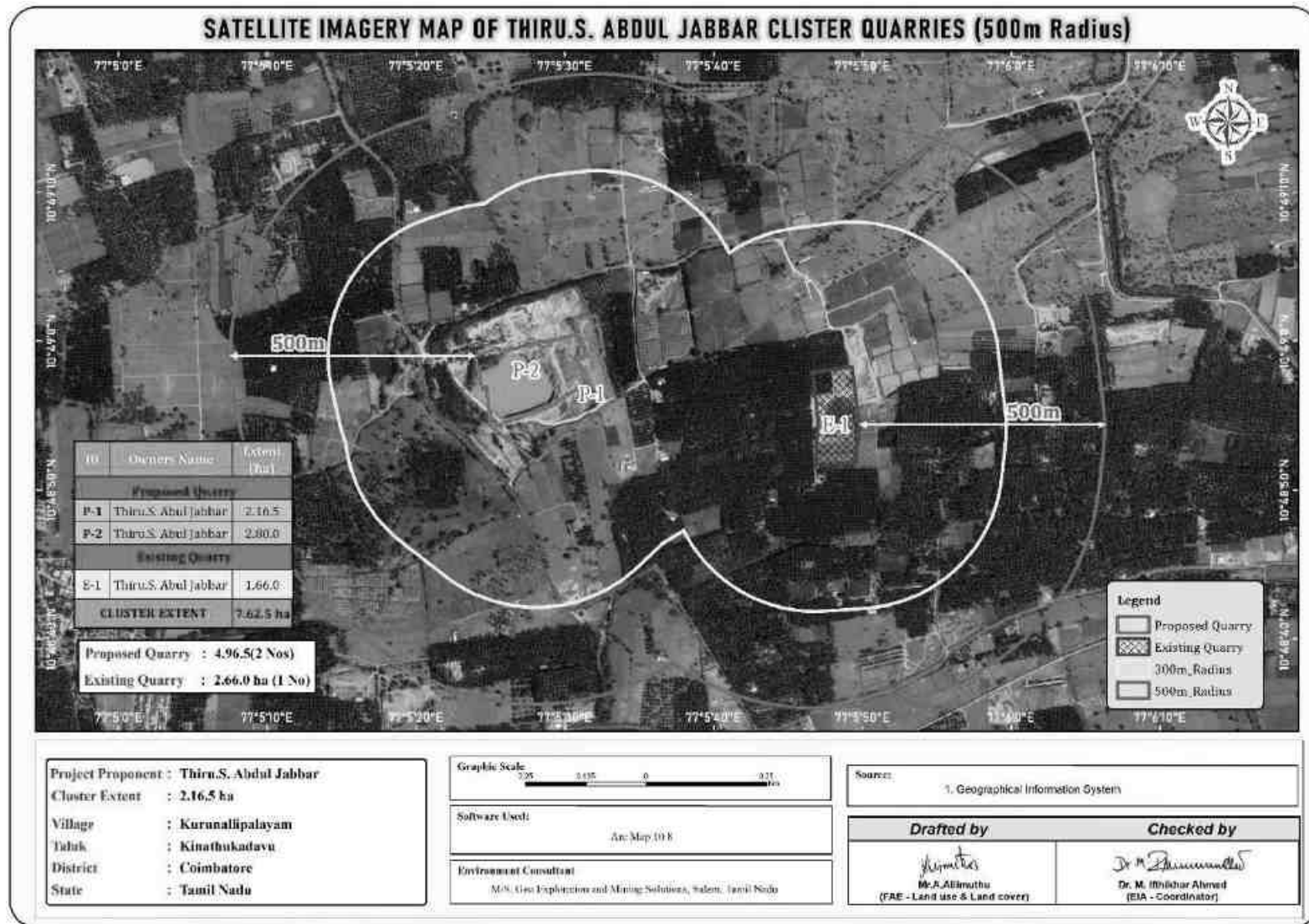
The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533 (E) of 14th September 2006 and its subsequent amendments as per Gazette Notification S.O. 3977 (E) of 14th August 2018, Mining Projects are classified under two categories i.e. A (> 100 Ha) and B (\leq 100 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 B1 and appraised by SEAC/ SEIAA as well as for cluster situation.

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

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

FIGURE 1.1 SATELLITE IMAGERY CLUSTER QUARRIES



1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENTS

1.2.1 Identification of Project

TABLE 1.1: SALIENT FEATURES OF THE PROPOSED PROJECT

Name of the Project	Thiru.S. Abdul Jabbar Rough Stone and Gravel Quarry
S.F. No.	44/9 (P), 45 (P), 46/1 & 47/3 (P)
Extent	2.16.5 ha
Land Type	Patta Land
Village Taluk and District	Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District

Source: Approved Mining Plan

1.2.2 Identification of Project Proponent

TABLE 1.2: DETAILS OF PROJECT PROPONENT

Name of the Project Proponent	Thiru.S. Abdul Jabbar
Address	S/o. S.Abdul Jabbar, S/o. Shand Mohammed Rawther, No.3/33, Vadachithur Post, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State – 641 202
Mobile	+91 9842256677
Status	Individual

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 Jack Hammer Drilling & Slurry Explosive during blasting. Hydraulic Excavator and tippers are used for Loading and transportation. Rock Breakers are deployed to avoid secondary blasting.

TABLE 1.3: BRIEF DESCRIPTION OF THE PROJECT

Name of the Project	Thiru.S. Abdul Jabbar Rough Stone and Gravel Quarry		
Toposheet No	58-F/01		
Latitude between	10° 48' 51.86" N to 10° 49' 01.67" N		
Longitude between	77° 05' 25.09" E to 77° 05' 33.44" E		
Highest Elevation	355 m AMSL		
Existing Pit Dimension	Pit – I - 71 m (L) * 53 m (W) * 6 m (D) bgl Pit – II - 62 m (L) * 46 m (W) * 1 m (D) bgl		
Proposed Depth of Mining	47 m bgl (2 m Gravel + 45 m Rough Stone)		
Mining Plan Period	Five Years		
Geological Resources	Rough Stone in m ³	Gravel m ³	
	10,01,579	31,463	
Mineable Reserves	Rough Stone in m ³	Gravel m ³	
	3,47,734	22,478	
Yearwise production recommended in ToR	Rough Stone in m ³	Gravel m ³	Existing Gravel Dump m ³
	3,47,734	22,478	7,170
Environmental Clearance	Lr.No. SEIAA-TN/F.No.2388/EC/1(a)/1397/2014 dated: 25.06.2014		
Consent to Operate (CTO) from TNPCB	Proceedings No. F.1765CBS/RS/DEE/TNPCB/CBS/W/2017 Dated: 01/08/2017.		
Existing Dump Dimension	Dump – I – 37 m (L) * 5 m (W) * 2 m (H) - Volume – 370 m ³ Dump – II – 175 m (L) * 4 m (W) * 2 m (H) – Volume – 1400 m ³ Dump – III – 60 m (L) * 45 m (W) * 2 m (H) – Volume – 5400 m ³		
Ultimate Pit Dimension	217m (L) x 103m (W) x 47m (D) bgl		
Water Level measured in the surrounding area	65m-60m bgl		
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting		

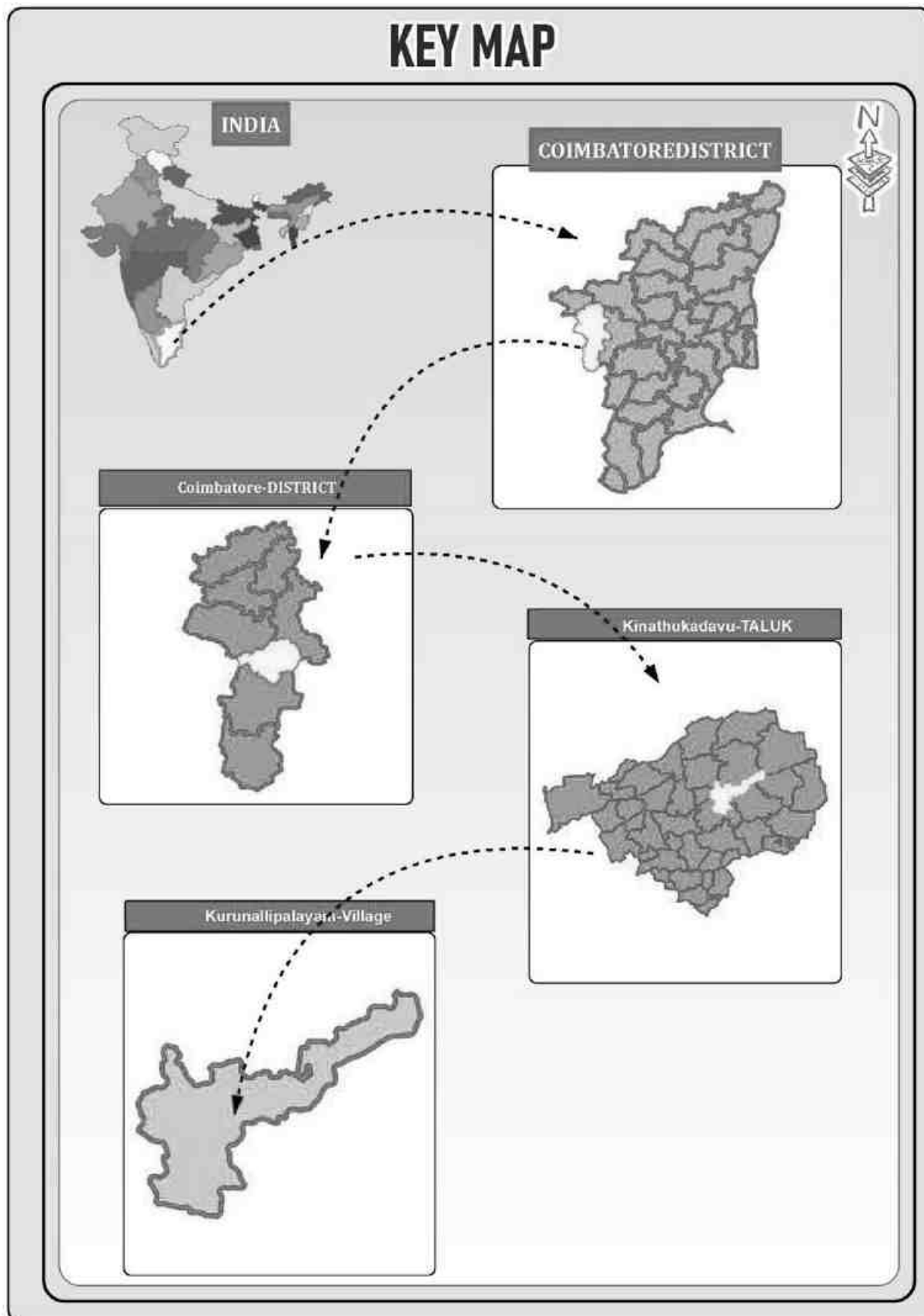
Topography	The lease applied area exhibits plain topography. The area has gentle sloping towards Western side. The altitude of the area is 355m (max) above mean sea level. The area is covered by 2m thickness of Gravel formation. Massive Charnockite is found after 2m of Gravel formation which is clearly inferred from the existing quarrying pit.	
Machinery proposed	Jack Hammer	8 Nos
	Compressor	2 Nos
	Hydraulic Excavator with Bucket and Rock breaker	2 Nos
	Tipplers	5 Nos
Blasting method and type of Explosives proposed	Controlled Blasting Method by shot hole drilling (30-32mm dia hole) and small dia of 25mm slurry explosive are proposed to use for winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	42 Nos	
Project Cost	Rs.62,63,000/-	
EMP Cost	Rs. 3,80,000/-	
CER Cost	Rs.5,00,000/-	
Nearby Water Bodies	Canal	130 m-SE
	Canal	900 m-SE
	Canal	2.0 Km-NW
	Kodavadi River	2.70 Km-SE
	P.A.P. canal	7.5 km-SE
Greenbelt Development Plan	1060 trees will be planned in safety area, approach road and panchayat roads	
Proposed Water Requirement	5.3 KLD	
Nearest Habitation	650m SouthEast	

Source: Approved Mining Plan

1.3.2 Location of the Project

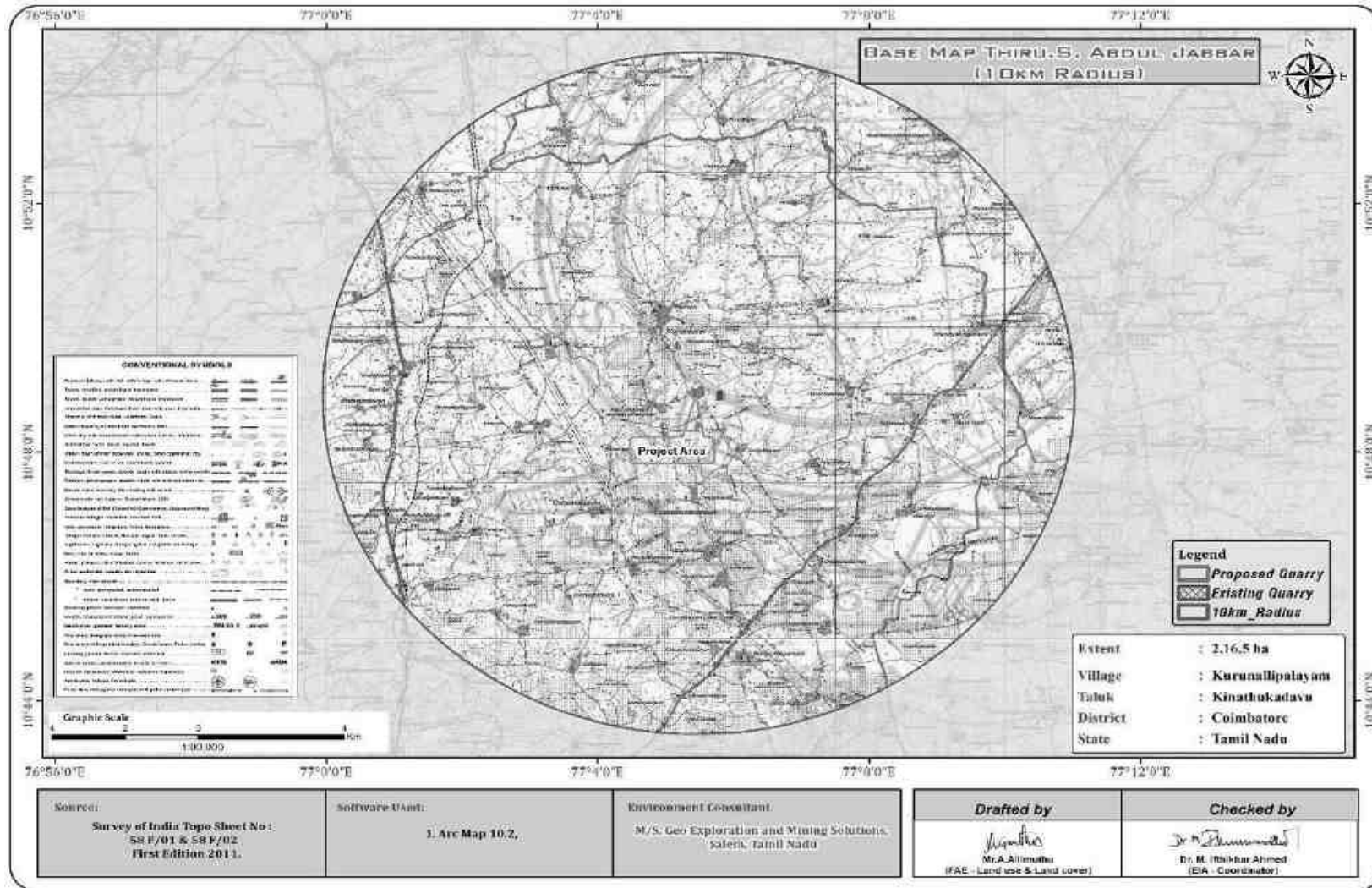
- The Proposed project fall in Kurunallipalayam Village, Kinathukadavu Taluk and Coimbatore District.
- The project is located about 17.0 km Southeast of Coimbatore town and 7 km East of Kinathukadavu and 760 m Northeast side of Kurunallipalayam Village.

FIGURE 1.2 KEY MAP SHOWING THE LOCATION OF THE CLUSTER SITE



Source: Survey of India Toposheet 58-F/01

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



Source: Survey of India Toposheet 58-F/01

1.4 ENVIRONMENTAL CLEARANCE

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

- Screening,
- Scoping
- Public consultation &
- Appraisal

SCREENING –

PROPOSAL	Thiru. S.Abdul Jabbar
<ul style="list-style-type: none"> ▪ The proponent applied for Rough Stone Quarry Lease Dated: 23.07.2020 ▪ Precise Area Communication Letter was issued by the District Collector, Coimbatore Rc.No. 337/Mines/2020, Dated: 08.02.2021. ▪ The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Coimbatore District, vide Rc.No.337/Mines/2020, Dated: 03.08.2021 ▪ The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 ▪ Proponent applied for ToR for Environmental Clearance vide online Proposal No. SIA/TN/MIN/67101/2021 Date: 30.08.2021. 	

SCOPING –

PROPOSAL
<ul style="list-style-type: none"> ▪ The proposal was placed in 250th SEAC meeting held on 03.03.2022 and the committee recommended for issue of ToR. ▪ The proposal was considered in 494th SEIAA meeting held on 21.03.2022 and issued ToR vide Letter No SEIAA-TN/F.No. 8763/SEAC/ToR-1100/2021 Dated: 21.03.2022.

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, 2010
 - EIA Notification, 14th September, 2006
 - Letter No SEIAA-TN/F.No. 8763/SEAC/ToR-1100/2021 Dated: 21.03.2022-P1
 - Approved Mining Plan of Proposed Project.

1.5 TERMS OF REFERENCE (ToR)

Compliance to ToR issued vide –

- ToR Lr.No SEIAA-TN/F.No. 8763/SEAC/ToR-1100/2021 Dated: 21.03.2022.
(Detailed in Page No. a – j)

1.6 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.

1.7 GENERIC STRUCTURE OF EIA DOCUMENT

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

1.8 THE SCOPE OF THE STUDY

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for 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 Post monsoon season (October 2022 to December 2022) 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 8 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 6 locations – 1 Surface water and 5 Ground water samples; once during study period.
4	Ecology	Existing terrestrial and aquatic flora and fauna within 10 km radius circle.	Limited primary survey and secondary data was collected from the Forest department.
5	Noise levels	Noise levels in dB(A)	8 locations – data monitored once for 24 hours during EIA study
6	Soil Characteristics	Physical and Chemical Parameters	Once at 6 locations during study period
7	Land use	Existing land use for different categories	Based on Survey of India topographical sheet and satellite imagery and primary survey.
8	Socio-Economic Aspects	Socio-economic and demographic characteristics, worker characteristics	Based on primary survey and secondary sources data like census of India 2011.
9	Hydrology	Drainage pattern of the area, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected from secondary sources as well as hydro-geology study report prepared.
10	Risk assessment and Disaster Management Plan	Identify areas where disaster can occur by fires and explosions and release of toxic substances	Based on the findings of Risk analysis done for the risk associated with mining.

Source: Field Monitoring Data

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

- Application for Quarrying Lease as per Tamil Nadu Minor Mineral Concession Rules, 1959
- Obtained Precise Area Communication Letter as per Tamil Nadu Minor Mineral Concession Rules, 1959 for Preparation of Mining Plan and obtaining Environmental Clearance
- The Mining Plan has been approved under Rule 41 & 42 as amended of Tamil Nadu Minor Mineral Concession Rules, 1959
- ToR Lr.No SEIAA-TN/F.No. 8763/SEAC/ToR-1100/2021 Dated: 21.03.2022.

2. PROJECT DESCRIPTION

2.0 GENERAL

The Proposed Rough Stone and Gravel Quarry requires Environmental Clearance. There are 2 proposal, 1 existing quarries forming a cluster; calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016 and the total extent of cluster is **6.62.5 ha**.

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

2.1 DESCRIPTION OF THE PROJECT

The proposed project is site specific and there is no additional area required for this project. There is no effluent generation/discharge from the proposed quarry.

Rough Stone and gravel is proposed to be excavated by opencast mechanized method involving splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone and gravel from pithead to the needy crushers and rock breakers to avoid secondary blasting.

2.2 LOCATION OF THE PROJECT

- The proposed quarry project is located in Kurunallipalayam-village, Kinathukadavu- Taluk, Coimbatore -District.
- The project is located about 17.0 km Southeast of Coimbatore town and 7 km East of Kinathukadavu and 760 m Northeast side of Kurunallipalayam Village.

The project does not fall within 10 km radius of any Eco – sensitive zone, National Park, Tiger Reserve, Elephant Corridor and Biosphere Reserves.

TABLE 2.1: SITE CONNECTIVITY

Nearest Roadway	National Highway (NH-83) Coimbatore –Pollachi-7.74 km - Northwest State Highway (SH-19) -Palladam - Pollachi – 5.08 km - Southeast.
Nearest Village	Kurunallipalayam – 760 m – SW
Nearest Town	Kinathukadavu – 7.70 Km – West
Nearest Railway Station	Kinathukadavu Railway station – 7.30 Km – NW
Nearest Airport	Coimbatore Airport – 24.50 Km – NW
Seaport	Kochi- 132 km – South West

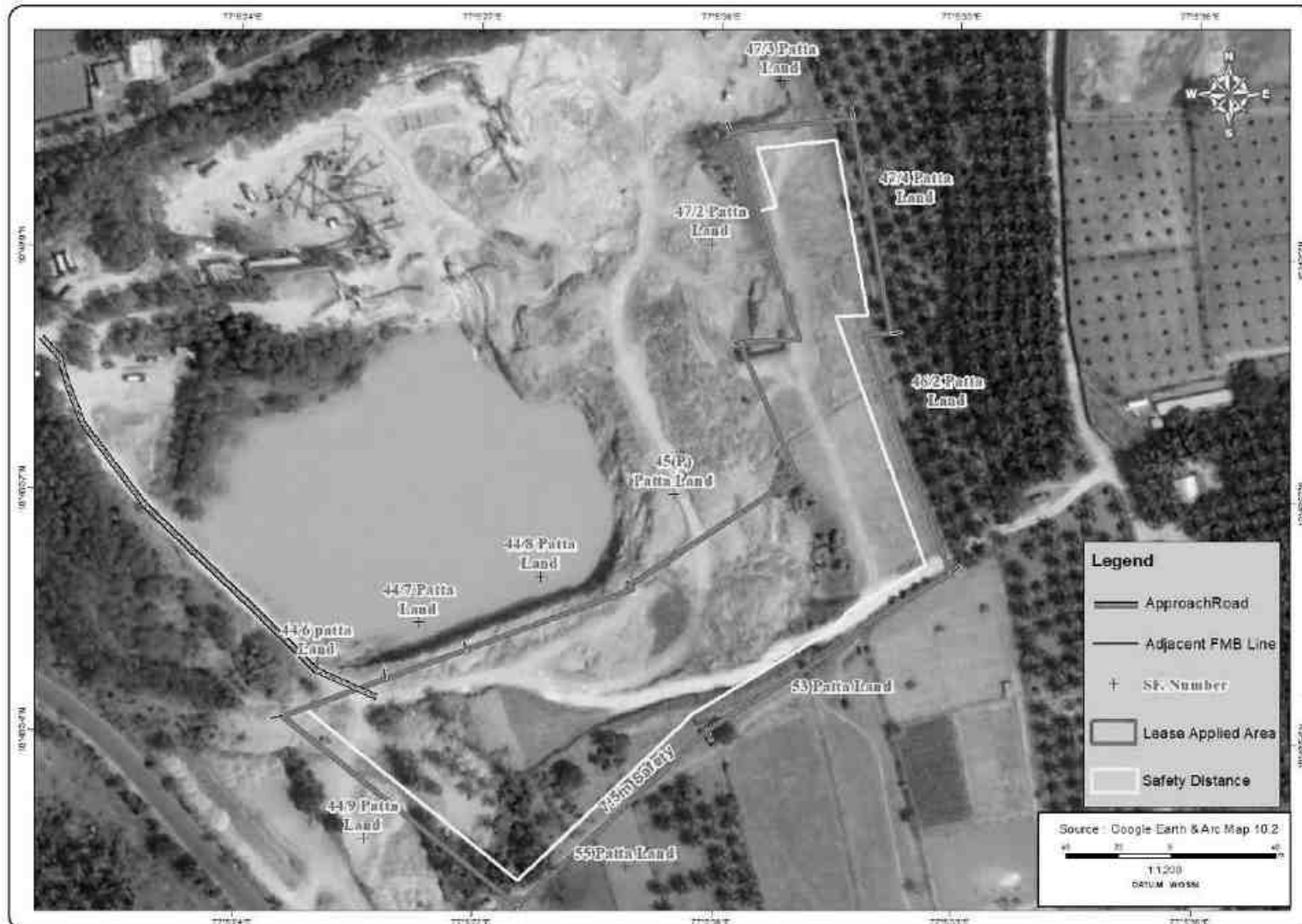
Source: Survey of India Toposheet

TABLE 2.2: BOUNDARY CO-ORDINATES OF PROPOSED PROJECT

PROJECT – P1		
Corner Nos.	Latitude	Longitude
1	10 ^o 48'51.86"N	77 ^o 05'28.08"E
2	10 ^o 48'54.18"N	77 ^o 05'25.09"E
3	10 ^o 48'55.80"N	77 ^o 05'29.46"E
4	10 ^o 48'55.85"N	77 ^o 05'29.43"E
5	10 ^o 48'57.23"N	77 ^o 05'31.50"E
6	10 ^o 48'58.87"N	77 ^o 05'30.77"E
7	10 ^o 48'58.93"N	77 ^o 05'31.51"E
8	10 ^o 49'01.48"N	77 ^o 05'30.62"E
9	10 ^o 49'01.67"N	77 ^o 05'32.15"E
10	10 ^o 48'59.01"N	77 ^o 05'32.66"E
11	10 ^o 48'58.99"N	77 ^o 05'32.32"E
12	10 ^o 48'56.05"N	77 ^o 05'33.44"E
13	10 ^o 48'55.38"N	77 ^o 05'32.34"E
14	10 ^o 48'55.19"N	77 ^o 05'32.20"E
15	10 ^o 48'54.08"N	77 ^o 05'30.42"E

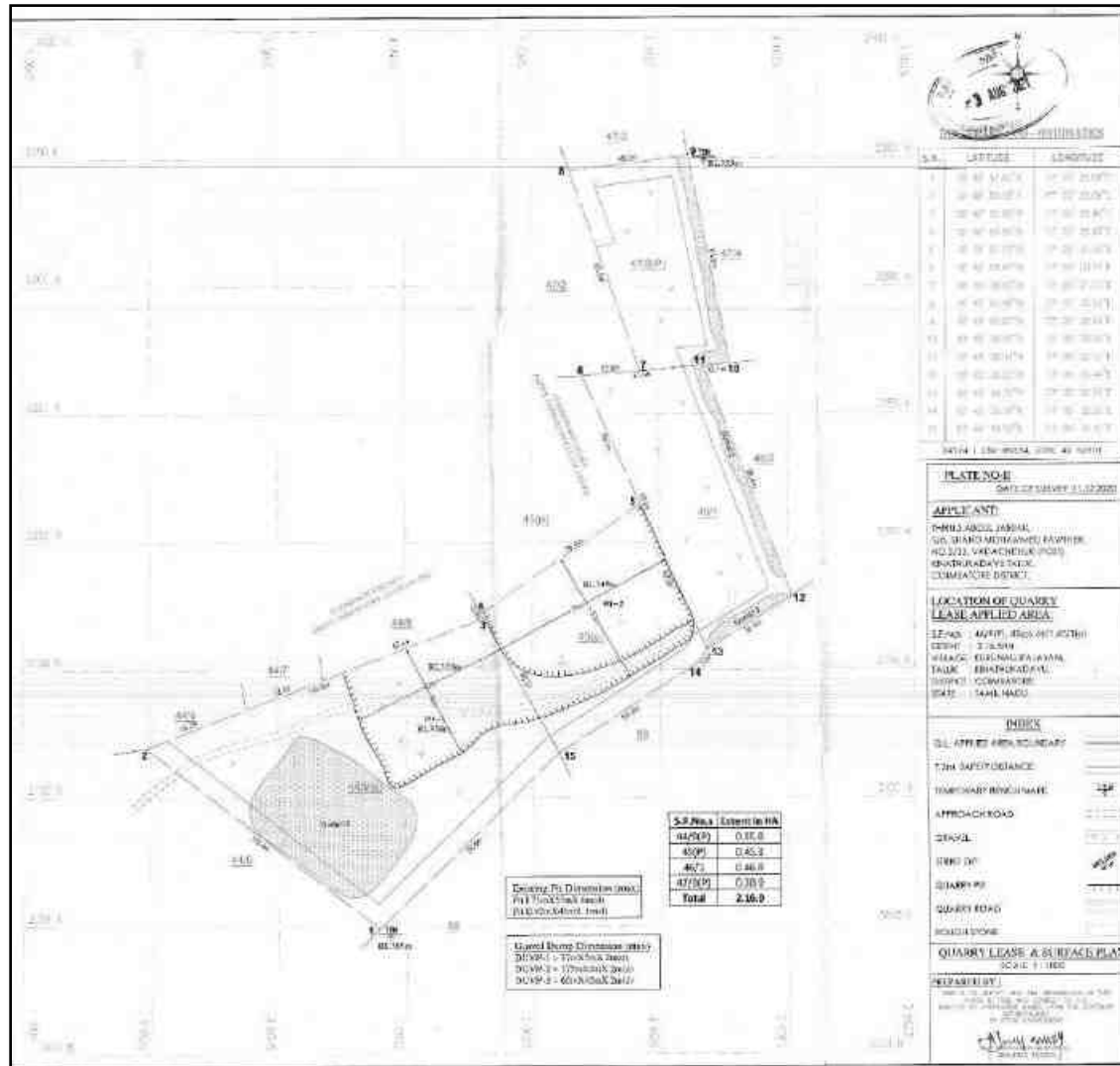
Source: Approved Mining Plan

FIGURE 2.1: GOOGLE IMAGE OF THE PROJECT AREA – P1



Source: Google Earth Imagery

FIGURE 2.2: QUARRY LEASE PLAN / SURFACE PLAN – P1



Source: Approved Mining Plan

FIGURE 2.3: VILLAGE MAP SUPERIMPOSED ON GOOGLE EARTH IMAGE

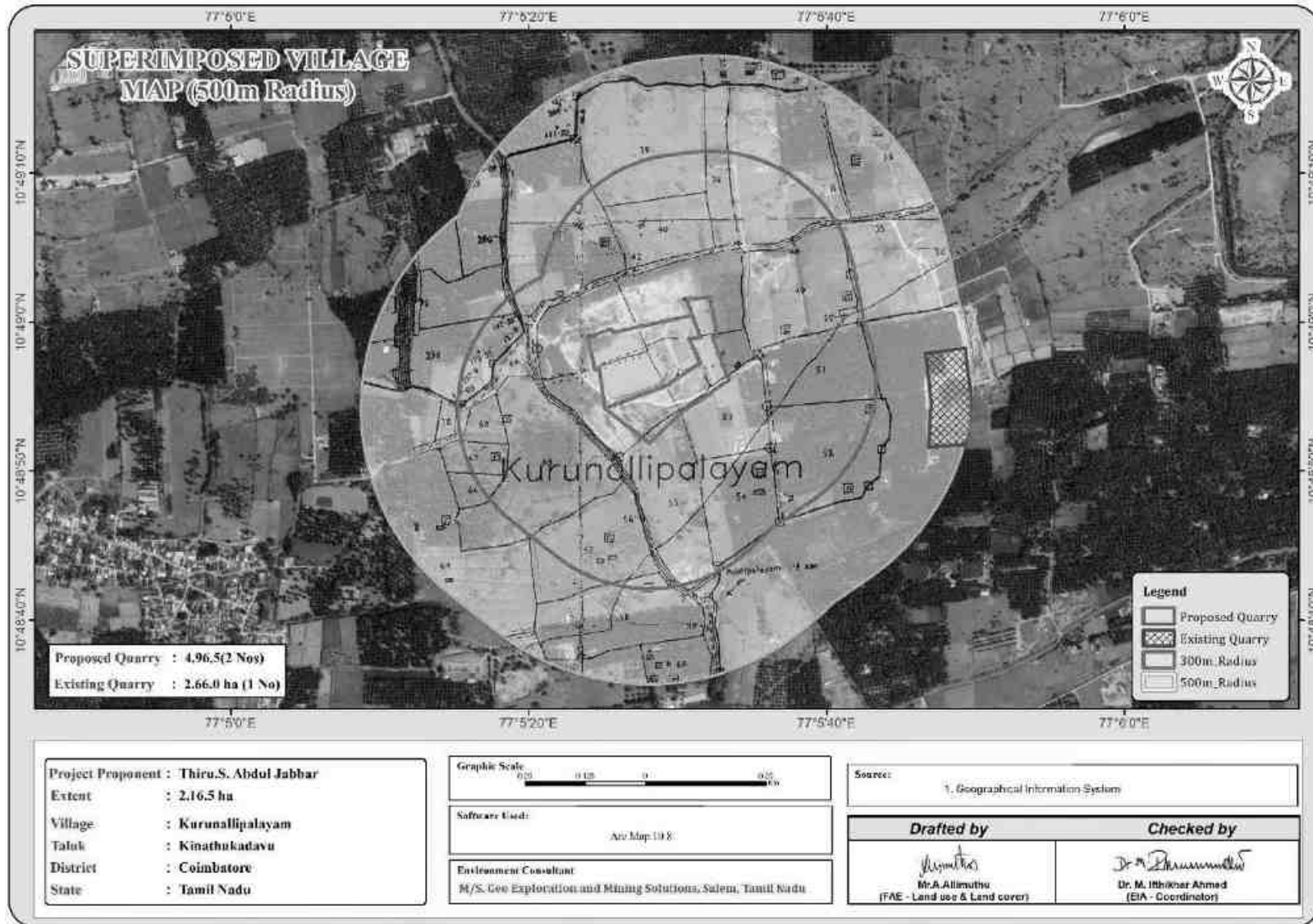


FIGURE 2.4: IMAGE SHOWING SURFACE FEATURES AROUND 10 KM RADIUS

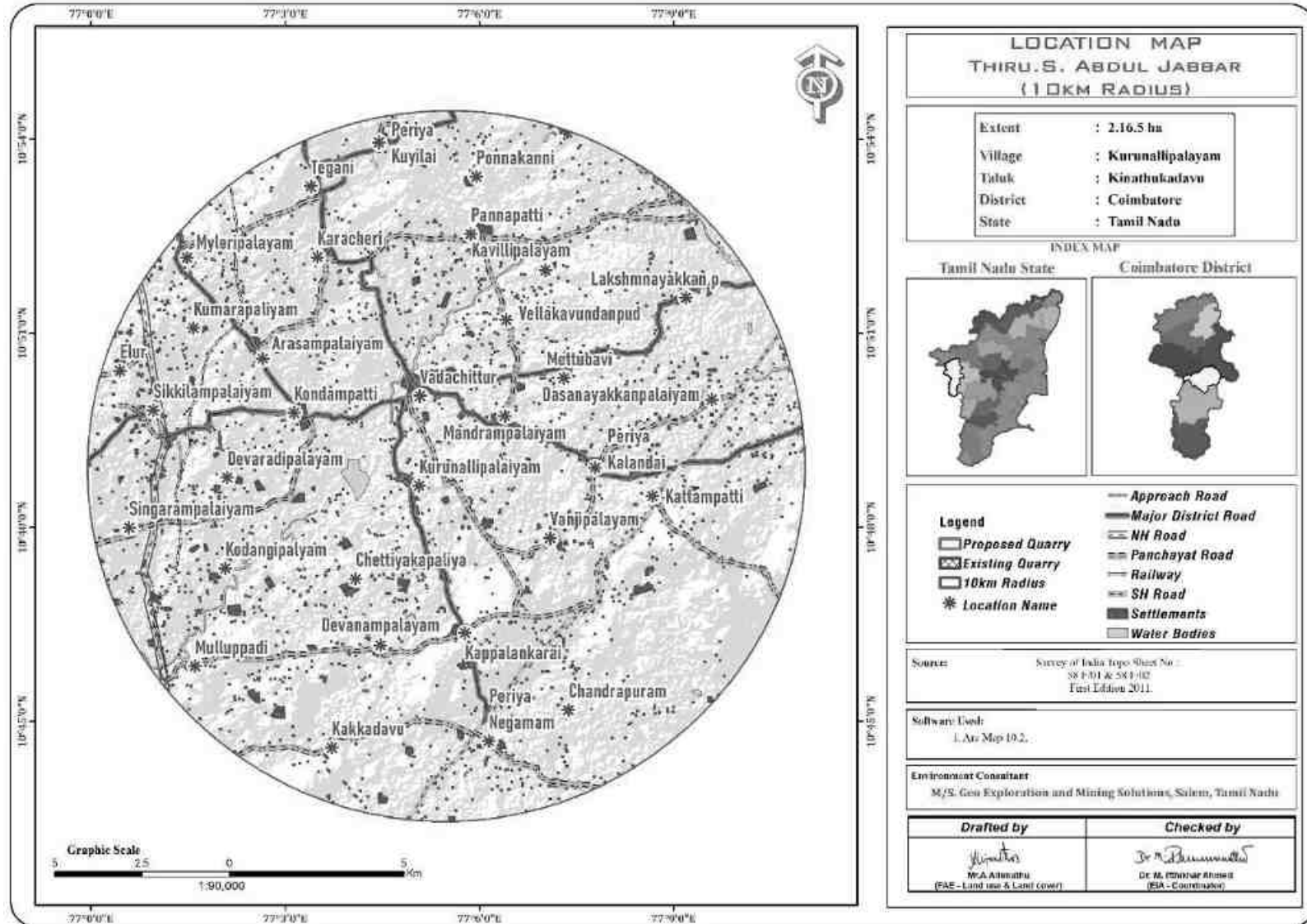


FIGURE 2.5: IMAGE SHOWING SURFACE FEATURES AROUND 5KM RADIUS

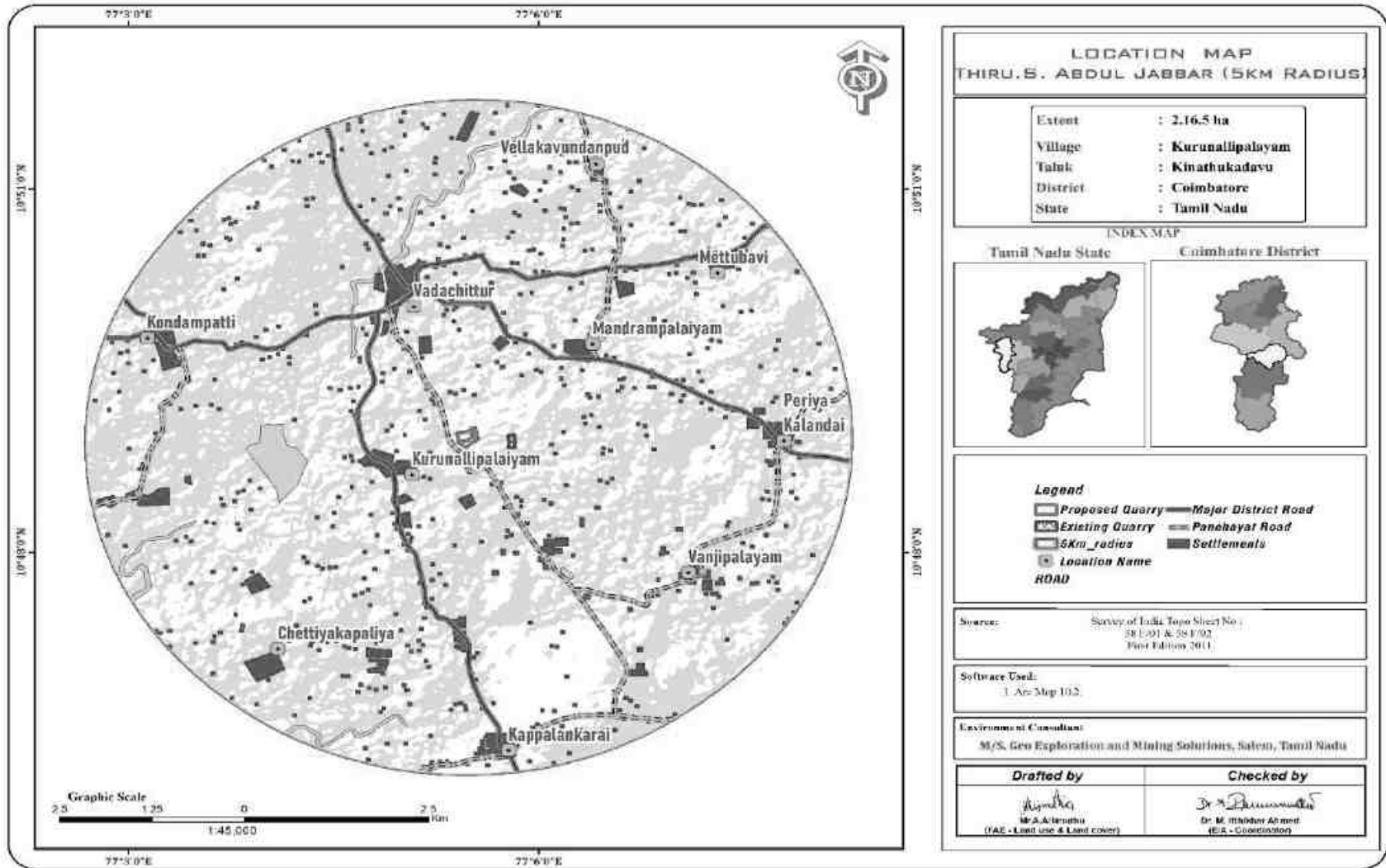
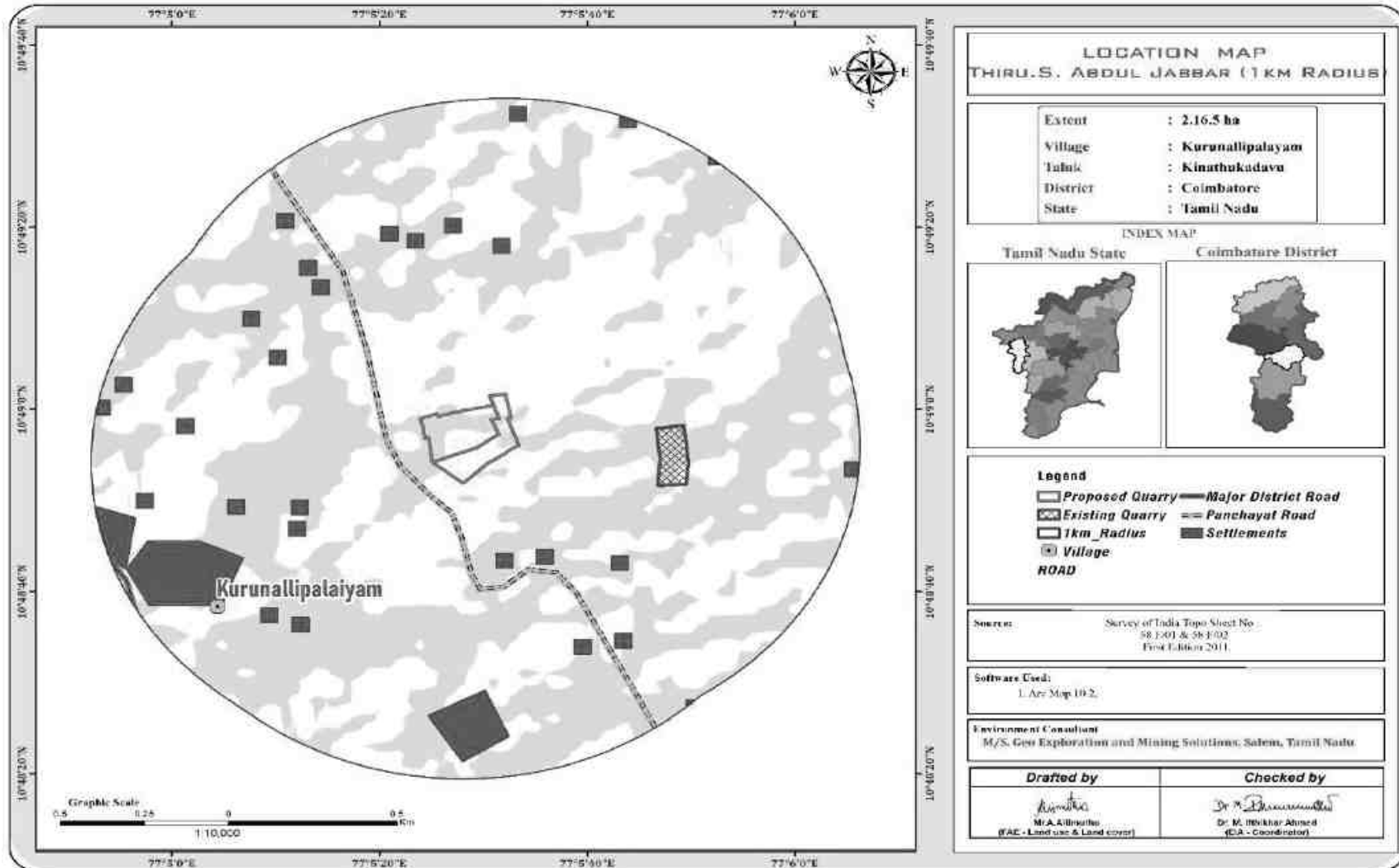


FIGURE 2.6: IMAGE SHOWING SURFACE FEATURES AROUND 1 KM RADIUS



2.2.1 Project Area

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

TABLE 2.3: LAND USE PATTERN OF THE PROPOSED PROJECT

PROJECT – P1		
Description	Present area in (ha)	Area at the end of life of quarry (Ha)
Area under quarry	0.66.9	1.80.9
Dump	0.33.8	Nil
Infrastructure	Nil	0.01.0
Roads	0.01.0	0.02.0
Green Belt	Nil	0.17.7
Unutilized area	1.14.8	0.14.9
Grand Total	2.16.5	2.16.5

Source: Approved Mining Plan

2.2.2 Size or Magnitude of Operation

TABLE 2.4: OPERATIONAL DETAILS FOR PROPOSED PROJECT

PROJECT – P1			
PARTICULARS	DETAILS		
	Rough Stone in m ³ (5Year Plan period)	Gravel in m ³ (3 Year Plan period)	Existing Gravel Dump in m ³ (2 Year Plan period)
Geological Resources	10,01,579	31,463	
Mineable Reserves	3,47,734	22,478	
Production for five-year plan period as per ToR	3,47,734	22,478	7,170
Mining Plan Period	5 Years		
Number of Working Days	300 Days		
Production per day	232	25	
No of Lorry loads (6m ³ per load)	39	4	
Total Depth of Mining	47m bgl		

Source: Approved mining plan

2.3 GEOLOGY

2.3.1 Regional Geology

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

i.	Charnockite Group represented by Charnockite, Pyroxene Granulite and Magnetite Quartzite
ii	Peninsular Gneissic Complex (II) comprising hornblende-biotite gneiss
iii	Peninsular Gneissic Complex (II) comprising hornblende-biotite gneiss
iv	Younger intrusive comprising, Nepheline-Syenite, Pink Granite, Pegmatite and Quartz veins and
v	Younger intrusive comprising, Nepheline-Syenite, Pink Granite, Pegmatite and Quartz veins and
vi	Quaternary sediments of Kankar and soil

Stratigraphy of the area –

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

Geologically, the district is covered by rocks belonging to Archean age comprising the khondalite group, Charnockite Group, migmatite group, Sathayamangalam group, Bhavani Group and Alkali complex of Proterozoic age and Recent to Late Pleistocene rocks of Cainozoic age.

The Charnockite Group of rocks consisting of Charnockite, pyroxene granulites and associated magnetite quartzite, the Knodalite Group comprising gametiferous – sillimanite gneiss, calc-granulite, crystalline limestone, sillimanite quartzites and associated migmatitic gneisses. The rocks are restricted to the central and southern portions of the district, especially around Sulur, Madukkarai and Pollachi taluks.

The fissile hornblende gneisses (Peninsular gneiss – younger phase) of Bhavani Group with enclaves of schistose, micaceous and amphibolitic rocks, fuchsite – kyanite quartzites, ferruginous quartzite (Sathayamangalam Group) intruded by a number of ultramafic and basic rocks and granites are seen in the Northern portions of the district especially around Mettupalayam and Northern areas of Coimbatore. The granites are Proterozoic age and occupy the Western end and Eastern Part of the District as separate bodies and are recognized as Maruthamalai Granite and Punjapuliampatti Granites respectively. The quaternary alluvium is seen in the Western areas of Coimbatore town. The alluvium is more than 30m thick in the Chinnathadagam valley northwest of Coimbatore and in the Siruvani valley west of Coimbatore.

Source: District Survey Report for Minor Minerals Coimbatore District – May 2019.

(<https://www.tnmines.tn.gov.in/pdf/dsr/9.pdf>)

2.3.2 Local Geology: -

The study area follows the regional trend and mainly comprises of Hard Rock Formation as a homogeneous formation / Batholith formation of Charnockite. The project areas are plain terrain, The project areas are covered with Gravel formation of 2m thickness; Massive Charnockite formation is found after 2m gravel formation which is clearly inferred from the existing quarry pit.

2.3.3 Hydrogeology

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

Quaternary - Laterites, Sands and Clays

Tertiary - Sandstone, Gravels and Clays

Cretaceous - Limestone, Calcareous Sandstone and Clay unconformity.

Archaean - Charnockites, Gneisses, Granites, Dolerites and Pegmatite

- The major part of the area is covered by metamorphic crystalline rocks of charnockite, granitic gneiss of Archaean age intruded by dolerite dykes and pegmatite veins. These rocks are highly metamorphosed and have been subjected to very severe folding, crushing and faulting.

- Ground Water occurs under the phreatic condition and wherever there are deep seated fractures, it occurs under semi-confined to confined conditions.

- Occurrence of Ground Water in hard rock depends upon the intensity and depth of weathering, fractures and fissures present in the rocks.

- Granites and gneisses yield moderately compared to the yield in Charnockites.

- Depth of well in hard rock generally ranges between 8 and 15m below ground level.

- Generally yield in open wells ranges from 30 to 250m³ /day and in bore well between 260 and 430m³ /day.

The weathered thickness varies from 2.5 m to 42m in general there are 3 to 5 fracture zones within 100 m and 1 to 4 fracture zones between 100 and 200 m.

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

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

2.2.2.3 Aquifer Systems:

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

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

2.2.2.3 Alluvial Formations

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

Tertiary Cuddalore sandstone

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

Cretaceous Formations

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

Hard Rock Formations

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

Granitic Gneiss

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

Charnockite

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

Aquifer Parameters

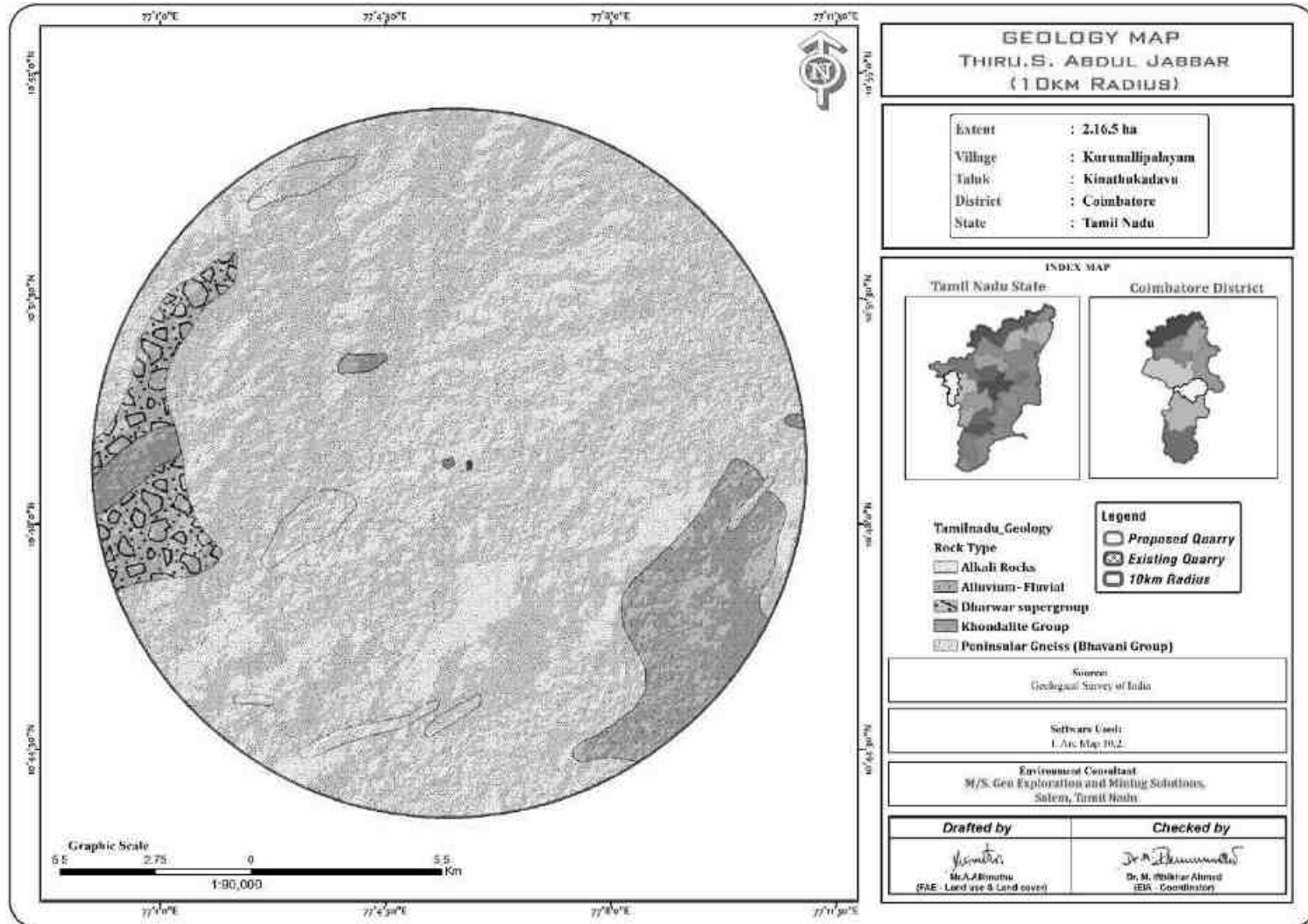
The thickness of aquifer in this district is highly erratic and varies between 15m to 40m below ground level. The intergranular Porosity is essentially dependent on the intensity and degree of weathering and fracture development in the bed rock. As discussed earlier deep weathering has developed in Gneissic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

TABLE 2.5: RANGE OF AQUIFER PARAMETERS

Type of Aquifer	Water Table conditions in hard rock areas
Aquifer paramters yield	50 to 300 Lpm
Transmissivity (T)	1.49 to 164.18 m ² /day
Permeability (K)	0.25 to 26.75 m/day
Depth of water level	7m to 25m

Source: <http://nwm.gov.in/sites/default/files/Notes%20on%20Coimbatore%20District.pdf>
and <https://www.twadboard.tn.gov.in/content/coimbatore>

FIGURE 2.7: REGIONAL GEOLOGY MAP



From the above map it is inferred that the cluster quarries fall in the hard rock terrain (Peninsular Gneiss)

FIGURE 2.8: GEOMORPHOLOGY MAP

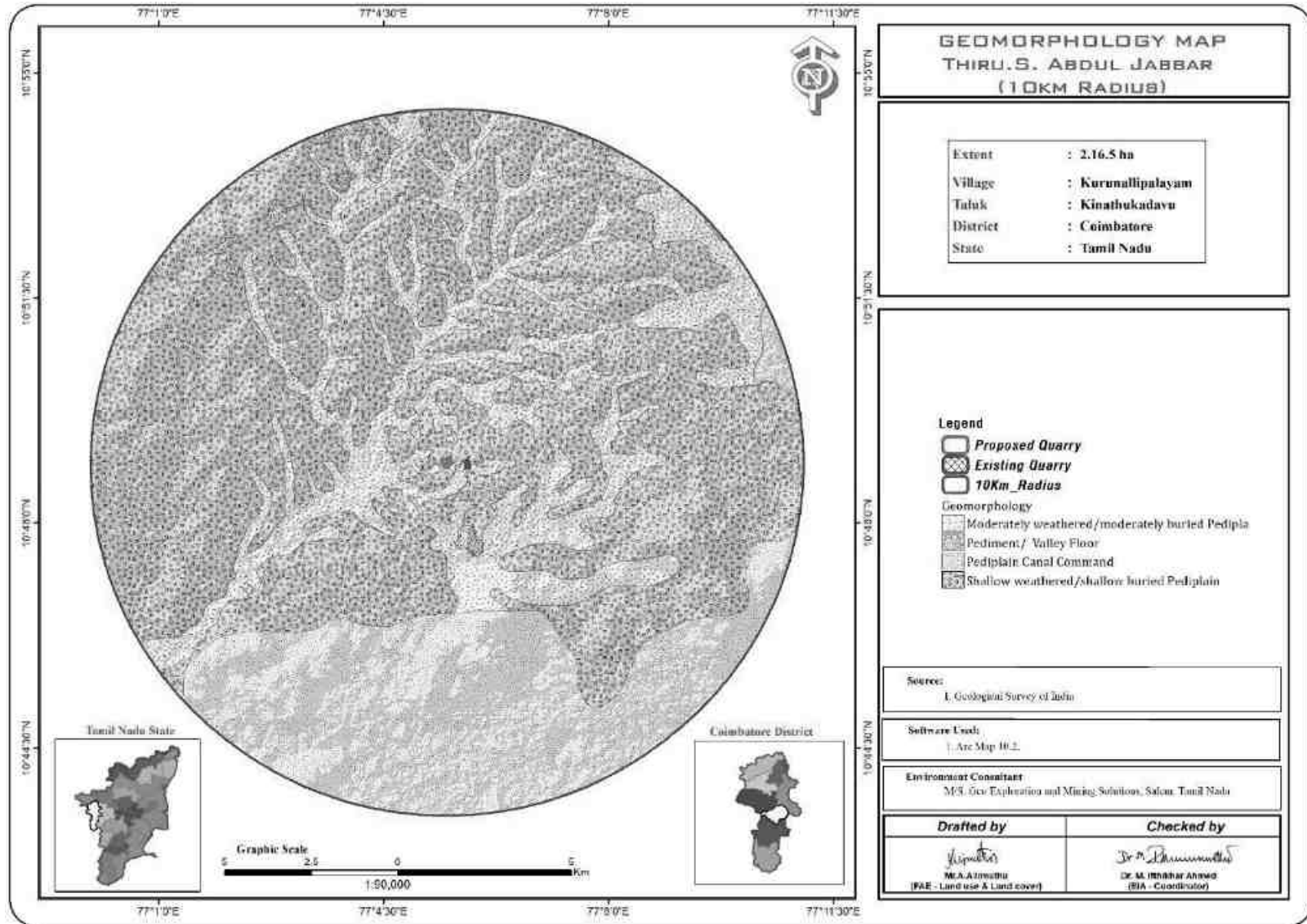
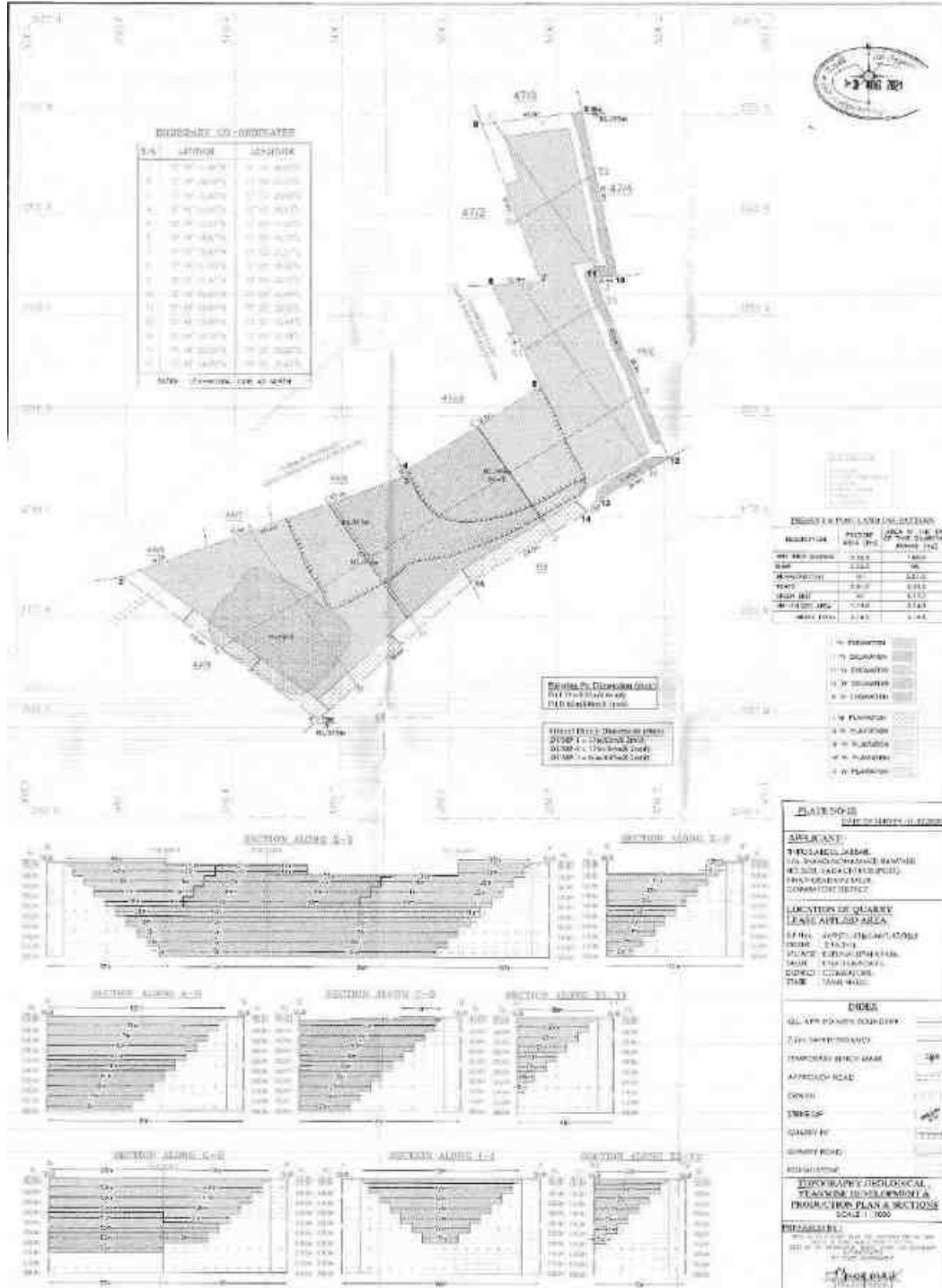
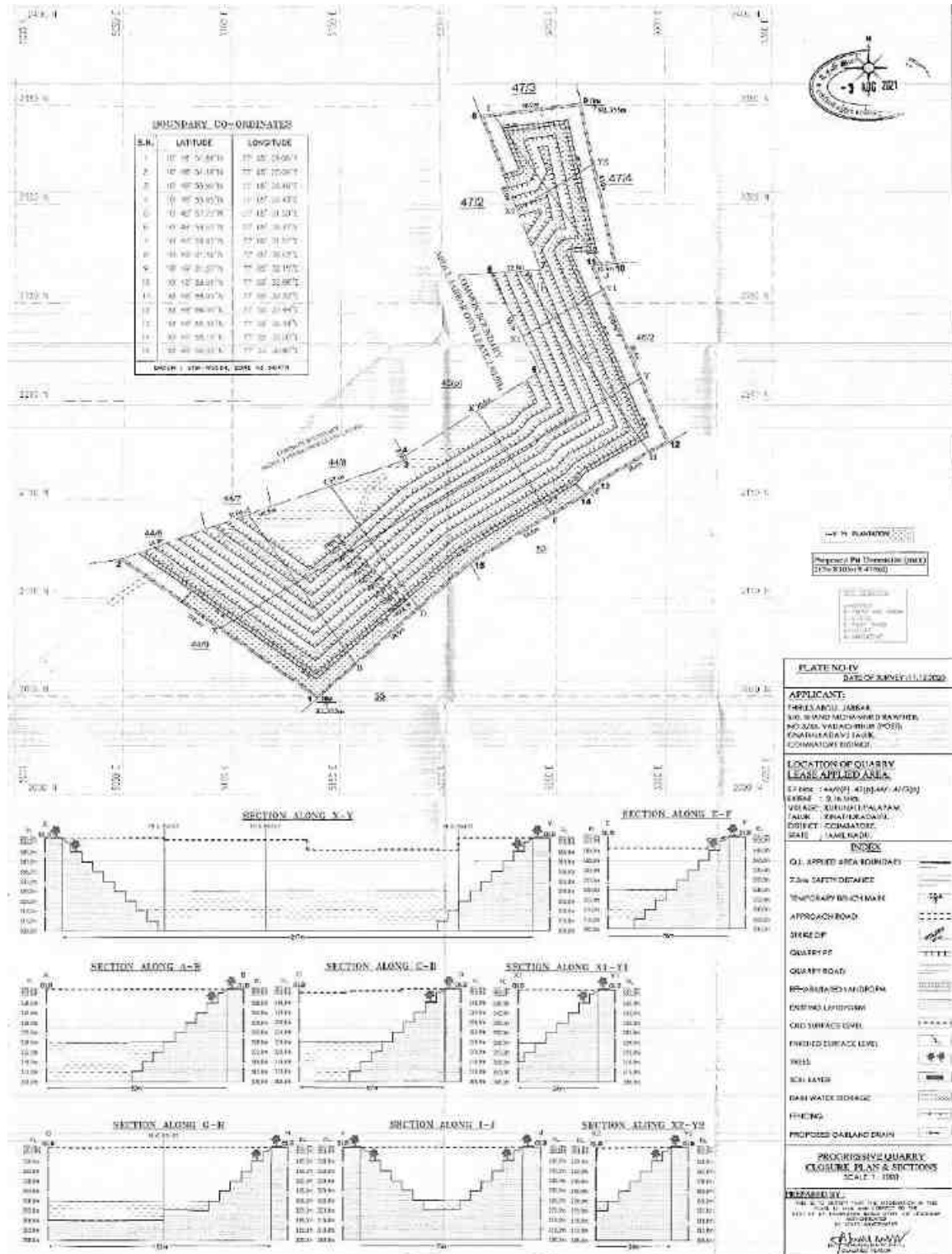


FIGURE 2.9: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS – P1



Source: Approved Mining Plan

FIGURE 2.10: CLOSURE PLAN AND SECTIONS – P1



Source: Approved Mining Plan

2.4 RESOURCES AND RESERVES

The Resources and Reserves of Rough Stone were calculated based on Cross-Section Method by plotting sections to cover the maximum lease area for all the proposed projects.

Based on the availability of Geological Resources the Mineable Reserves are calculated by considering excavation system of bench formation and leaving essential safety distance of 7.5 m (Safety Barrier all around the applied area) and safety distance as per precise area communication letter and deducting the locked up reserves during bench formation (Also called as Bench Loss) and the Mineable Reserves is calculated considering there is no waste / overburden / side burden (100% Recovery Anticipated) for all the proposed projects.

TABLE 2.6: AVAILABLE GEOLOGICAL RESOURCES OF PROPOSED PROJECT

PROPOSAL – P1		
Description	Rough Stone	Gravel
Geological Resource in m ³	10,01,579	31,463
Mineable Resource in m ³	3,47,734	22,478

Source: Approved Mining Plan

TABLE 2.7: YEAR-WISE PRODUCTION PLAN

YEAR	ROUGH STONE (m ³)	Gravel (m ³)	Existing Gravel Dump in m ³ (2 Year Plan period)
I	69,220	9,156	1,770
II	68,302	1,454	5,400
III	67,402	11,868	
IV	67,070	-	
V	75,740	-	
TOTAL	3,47,734	22,478	7,170

Source: Approved Mining Plan

Disposal of Waste

There is no waste anticipated in these Rough Stone quarrying operation. The entire quarried out materials will be utilized (100%).

Conceptual Mining Plan/ Final Mine Closure Plan

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

TABLE 2.8: ULTIMATE PIT DIMENSION

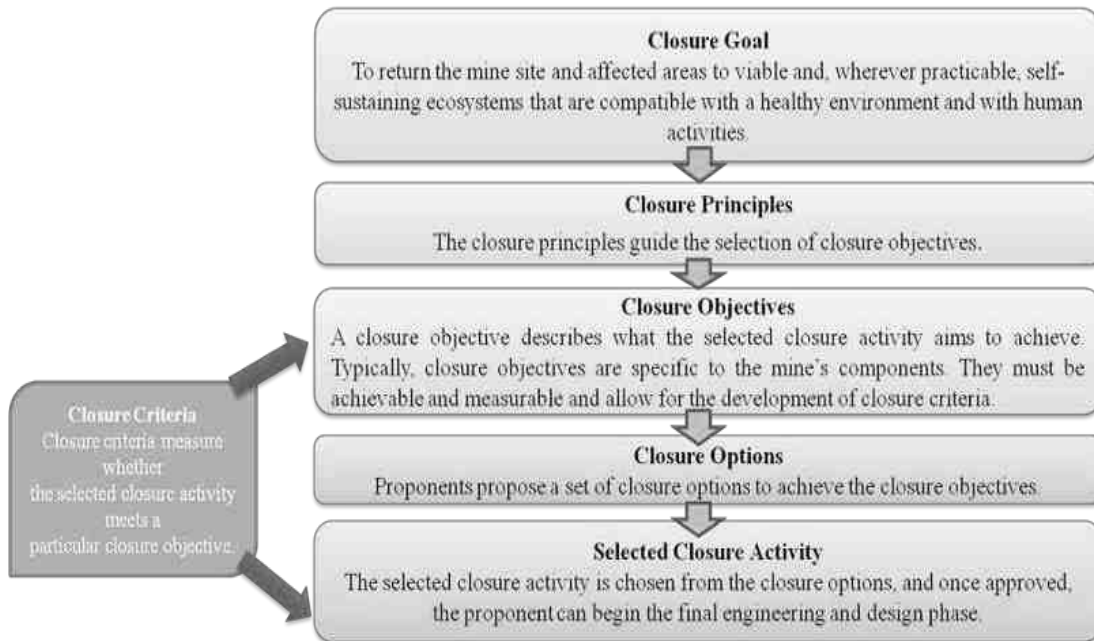
PROPOSAL – P1			
Pit	Length (Max) (m)	Width (Max) (m)	Depth (Max) (m)
1	217	103	47

Source: Approved Mining Plan

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

Closure Objectives –

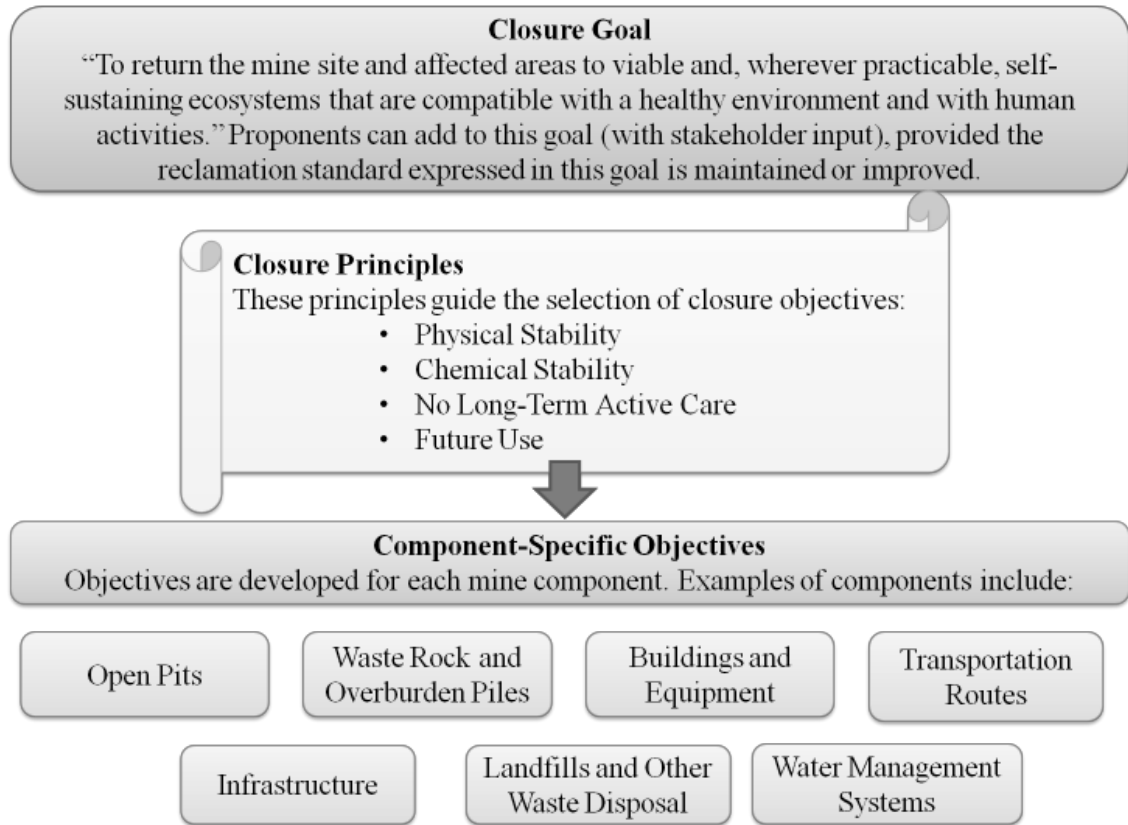
- Access to be limited, for the safety of humans and wildlife.
- The open pit mine workings and pit boundary are physically and geo-technically stable.
- Water quality in flooded pits is safe for humans, aquatic life, and wildlife.
- Discharge of contaminated drainage has been minimized and controlled.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



Closure Planning & Options Considerations in Mine Design –

- The closure of mine is well planned at the initial stage of planning & design consideration by the internal and external stake holders
- Construction of 2m height bund all along the mine pit boundary and ensure its stability all time & construction of garland drain along the natural slope to avoid sliding and collection of soil to the pit & surface runoff during rainfall
- After complete exploitation of mineral, the lowest bench foot wall side will be maintained as plain surface without any sump pits to avoid any accidents
- All the sharp edges will be dressed to smoother face before the closure of mine and ensure no loose debris on hanging wall side
- There is a canal on Western side of the cluster project area. The river canal will not be hindered by any of mine closure activities
- The project proponent as a part of social responsibilities assures to supply the stored mine pit water to the nearby villages after effective treatment process as per the standards of TNPCB & TWAD
- Native species will be planted in 3 row patterns on the boundary barriers and 1st bench, a full-time sentry will be appointed at the gate to prevent inherent entry of public & cattle.
- The access road to the quarry will be cut-off immediately after the closure
- The layout design shall be prepared and get approved from Department of Geology and Mining.
- The proponent is instructed to construct as per the layout approved

- Physical and chemical stability of structures left in place at the site, the natural rehabilitation of a biologically diverse, stable environment, the ultimate land use is optimized and is compatible with the surrounding area and the requirements of the local community, and taking the needs of the local community into account and minimizing the socio-economic impact of closure
- There will be a positive change in the environmental and ecology due to the mine closure.



Post-Closure Monitoring –

The purpose of post-closure monitoring with respect to open pit mine workings is to ensure the attainment of closure objectives.

- Monitor physical and geotechnical stability of remnant pit walls.
- Monitor the ground regime in pit walls to confirm achievement of design objectives.
- Monitor water level in pit to confirm closure objectives regarding fish, fish habitat, and wildlife safety are being achieved.
- Sample water quality and quantity at controlled pit discharge points.
- Identify and test unanticipated areas where water management is an issue.
- Inspect integrity of barriers such as berms & fences.
- Monitor wildlife interactions with barriers to determine effectiveness.
- Inspect aquatic habitat in flooded pits where applicable.
- Monitor dust levels.

Post-Closure Monitoring –

The purpose of post-closure monitoring with respect to open pit mine workings is to ensure the attainment of closure objectives

TABLE 2.9: MINE CLOSURE BUDGET

PROPOSAL- P1							
Activity	Year					Cost (Rs)	Total Cost (Rs)
	I	II	III	IV	V		
Plantation in Nos inside of the site	600	-	-	-	-	@ 200 Rs/ Saplings	Rs. 1,20,000
Plantation in Nos outside of the site	600	-	-	-	-	@ 200 Rs/ Saplings	Rs. 1,20,000
Renovation of Wire Fencing (590 meters)	177000	-	-	-	-	@ Rs.300 per meter	Rs. 1,77,000
Renovation of Garland Drain (550 meters)	165000	-	-	-	-	@ Rs.300 per meter	Rs.1,65,000
Total							Rs. 5,82,000

Source: Proposed by FAE's and EC

2.5 METHOD OF MINING

The method of mining is Opencast Mechanized Mining Method is being proposed by formation of 5.0-meter height bench with a bench width not less than the bench height. However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 106 (2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with the Regulation 106 (2) (b) of MMR-1961, under Mine Act – 1952.

The Rough Stone is a batholith formation and the splitting of rock mass of considerable volume from the parent rock mass will be carried out by deploying jackhammer drilling and Slurry Explosives will be used for blasting. Hydraulic Excavators attached with Rock Breakers unit will be deployed for breaking large boulders to required fragmented sizes to avoid secondary blasting and hydraulic excavators attached with bucket unit will be deployed for loading the Rough Stone into the tippers and then the stone is transported from pithead to the nearby crushers.

2.5.1 Drilling & Blasting Parameters

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

Spacing	–	1.2m
Burden	–	1.0 m
Depth of hole	–	1.5 m
Charge per hole	–	0.50 – 0.75kg
Powder factor	–	6.0 tonnes/kg
Diameter of hole	–	32 mm

Type of Explosives to be used –

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

Storage of Explosives –

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

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

2.5.2 Extent of Mechanization

TABLE 2.10 PROPOSED MACHINERY DEPLOYMENT

S.NO.	TYPE	NOS	SIZE/CAPACITY	MOTIVE POWER
1	Jack hammers	8	1.2m to 2.0m	Compressed air
2	Compressor	2	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker	2	300 HP	Diesel Drive
4	Tippers	5	20 Tonnes	Diesel Drive

Source: Approved Mining Plan

2.6 GENERAL FEATURES

2.6.1 Existing Infrastructures

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

2.6.2 Drainage Pattern

Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin over time that reveals characteristics of the kind of rocks and geological structures in a landscape. They are governed by the topography of the land, whether a particular region is dominated by hard or soft rocks, and the gradient of the land.

Dendritic drainage pattern is one of the most common types that develop in areas where the rock (or unconsolidated material) beneath the stream has no particular fabric or structure and can be easily eroded equally in all directions.

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

2.6.3 Traffic Density

The traffic survey conducted based on the transportation route of material, the Rough Stone is proposed to be transported mainly through Palladam – Chettipalayam State Highway(163) 6.5km Northeast side and Tegani – Chettipalayam District Road 1.5km Southwest Side.

Traffic density measurements were performed at two locations

1. Vadasithur-Chandrapuram (Panchayat Road) 450m Northwest side.
2. Palladam-Vadapudur (District Road) 2.2 km Northeast side.

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.

TABLE.2.11: TRAFFIC SURVEY LOCATIONS

Station Code	Road Name	Distance and Direction	Type of Road
TS1	Vadasithur-Chandrapuram Road	450m Northwest	Panchayat Road
TS2	Palladam-Vadapudur Road	2.2km Northeast	District Road

Source: On-site monitoring by GEMS FAE & TM

TABLE 2.12: EXISTING TRAFFIC VOLUME

Station code	HMV		LMV		2/3 Wheelers		Total PCU
	No	PCU	No	PCU	No	PCU	
TS1	92	276	42	42	166	83	401

TS2	150	450	205	205	232	116	771
-----	-----	-----	-----	-----	-----	-----	-----

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 2.13: ROUGH STONE & GRAVEL HOURLY TRANSPORTATION REQUIREMENT

Transportation of Rough Stone per day		
Capacity of trucks	No. of Trips per day Cumulatively	Volume in PCU
10/20 tonnes	39	117

Source: Data analysed from Approved Mining Plan

FIGURE.2.11: MINERAL TRANSPORTATION ROUTE MAP

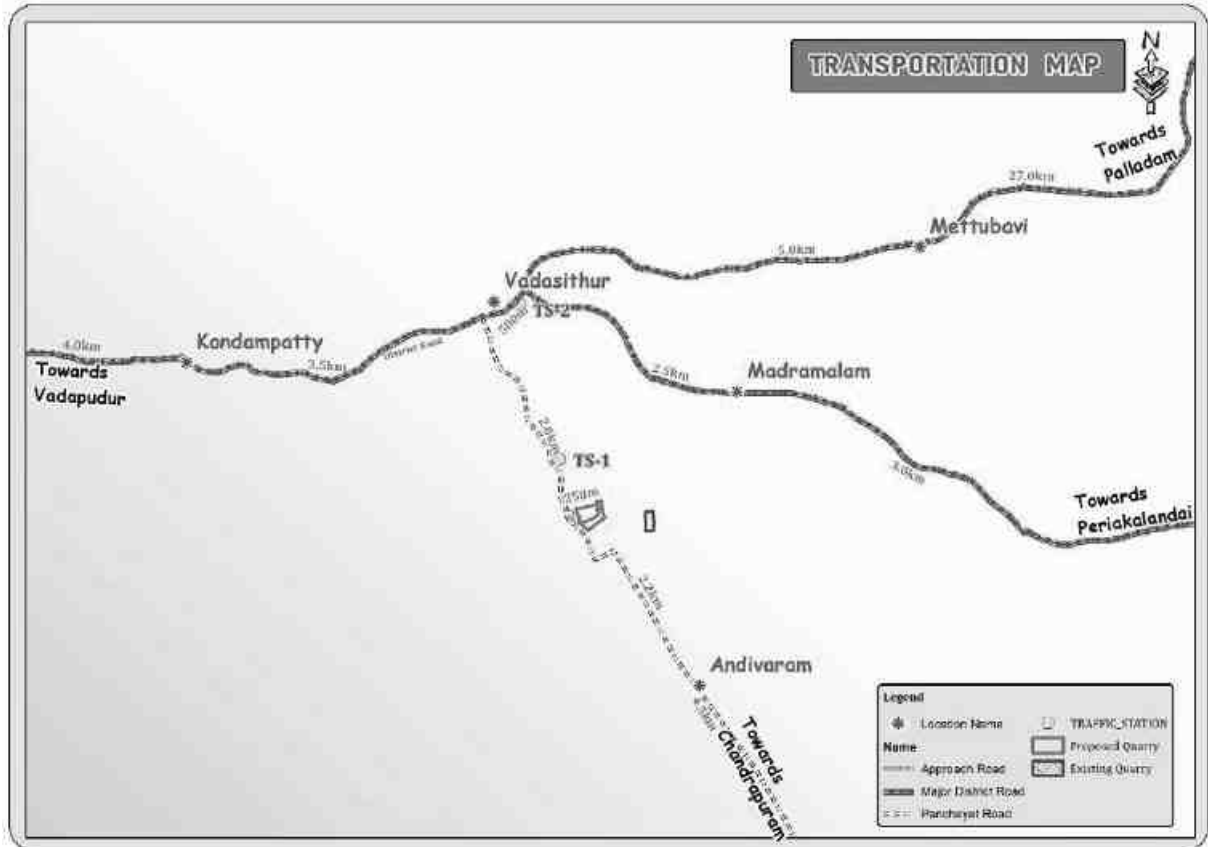


TABLE 2.14: SUMMARY OF TRAFFIC VOLUME

Route	Existing Traffic volume in PCU	Incremental traffic due to the project	Total traffic volume	Hourly Capacity in PCU as per IRC – 1960 guidelines
TS-1	771	117	888	1500
TS-2	401	117	518	1200

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

- Due to these 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 any of the proposed project.

2.7 PROJECT REQUIREMENT (MAN POWER REQUIREMENT)

2.7.1 Water Source & Requirement

Detail of water requirements in KLD as given below:

TABLE 2.15: WATER REQUIREMENT FOR THE PROJECT

PROPOSAL – P1		
*Purpose	Quantity	Source
Dust Suppression	1.5 KLD	Source
Green Belt development	2.0 KLD	Rainwater accumulated in Mine Pit/ Water Tanker
Domestic purpose	1.8 KLD	Rainwater accumulated in Mine Pit/ Water Tanker
Total	5.3 KLD	Water Tankers

Source: Prefeasibility report

* Drinking water will be sourced from Approved Water Vendors

2.7.2 Power and Other Infrastructure Requirement

No proposed projects 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 SEB by respective project proponent.

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

2.7.3 Fuel Requirement

High speed Diesel (HSD) will be used for mining machineries. Diesel will be brought from nearby Fuel Stations. Average diesel consumption is around = 200 Liters of HSD / day per proposed project.

2.7.4 Project Cost

TABLE 2.16: PROJECT COST OF PROPOSED PROJECTS

PROPOSAL – P1	
Project Cost	66,43,000/-

Source: Approved Mining Plan & Prefeasibility Report

2.8 EMPLOYMENT REQUIREMENT:

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

TABLE 2.17: PROPOSED MANPOWER DEPLOYMENT

PROPOSAL – P1	
Mines Foreman	1
Mate/Blaster	1
Excavator Operator & Driver	7
Jack hammer operator	16
Secutiry	2
Labour & Helper	6
Co-Operator and Cleaner	9
Total	42

Source: Approved Mining Plans of respective Project

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 2.18: 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

3. DESCRIPTION OF ENVIRONMENT

3.0 GENERAL

This chapter presents a regional background to the baseline data at the very onset, which will help in better appreciation of micro-level field data, generated on several environmental and ecological attributes of the study area. The baseline status of the project environment is described section wise for better understanding of the broad-spectrum conditions. The baseline environment quality represents the background environmental scenario of various environmental components such as Land, Water, Air, Noise, Biological and Socio-economic status of the study area. Field monitoring studies to evaluate the base line status of the project site were carried out covering October 2022, November 2022 and December 2022 with CPCB guidelines. Environmental data has been collected with reference to cluster quarries by CHENNAI METTEX LAB PRIVATE LIMITED Approved by AAI, AGMARK, APEDA, BIS, EIC FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD Certified & MoEF Notified Laboratory, for the below attributes –

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

Study Area

An area of 10 km radius (aerial distance) from the periphery of the cluster is considered for EIA study. The data collection has been used to understand the existing environment scenario around the cluster against which the potential impacts of the project can be assessed. The study area has been divided into two zones viz **core zone** and **buffer zone** where core zone is considered as cluster and 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. October 2022 to December 2022.

Study Methodology

- The project area was surveyed in detail with the help of Total Station and the boundary pillars were picked up with the help of GPS. 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, exchangeable Cations, nutrients & micro nutrients etc., in order to assess the impact due to mining activities and to recommend saplings for Greenbelt development.
- Ground water samples were collected during the study period from the existing bore wells, while surface water was collected from ponds in the buffer zone. The samples were analysed for parameters necessary to determine water quality (based on IS: 10500:2012 criteria) and those which are relevant from the point of view of environmental impact of the proposed mines.
- 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.
- In order to assess the Ambient Air Quality (AAQ), samples of ambient air 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's 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 (1 surface water & 5 ground water)	IS 10500& CPCB Standards
Meteorology	Wind Speed Wind Direction Temperature Cloud cover Dry bulb temperature Rainfall	1Hourly continuous Mechanical/Auto matic Weather Station	1	Site specific primary data& Secondary Data from IMD Station
*Ambient Air Quality	PM10 PM2.5 SO2 NOX Fugitive Dust	24 hourly twice a week (March 2022 to May 2022)	8 (1 core & 7 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient Noise	Hourly observation for 24 Hours per location	8 (1 core & 7 buffer zone)	IS 9989 As per CPCB Guidelines
Ecology	Existing Flora and Fauna	Through field visit during the study period	Study Area	Primary Survey by Quadrate & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio–Economic Characteristics, Population Statistics and Existing Infrastructure in the study area	Site Visit & Census Handbook, 2011	Study Area	Primary Survey, census handbook & need based assessments.

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited in association with GEMS

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

3.1 LAND ENVIRONMENT

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

3.1.1 Land Use/ Land Cover

A visual interpretation technique has been adopted for land use classification based on the keys suggested in the chapter – V of the guidelines issued by NNRMS Bangalore & Level III classification with 1:50,000 scale for the

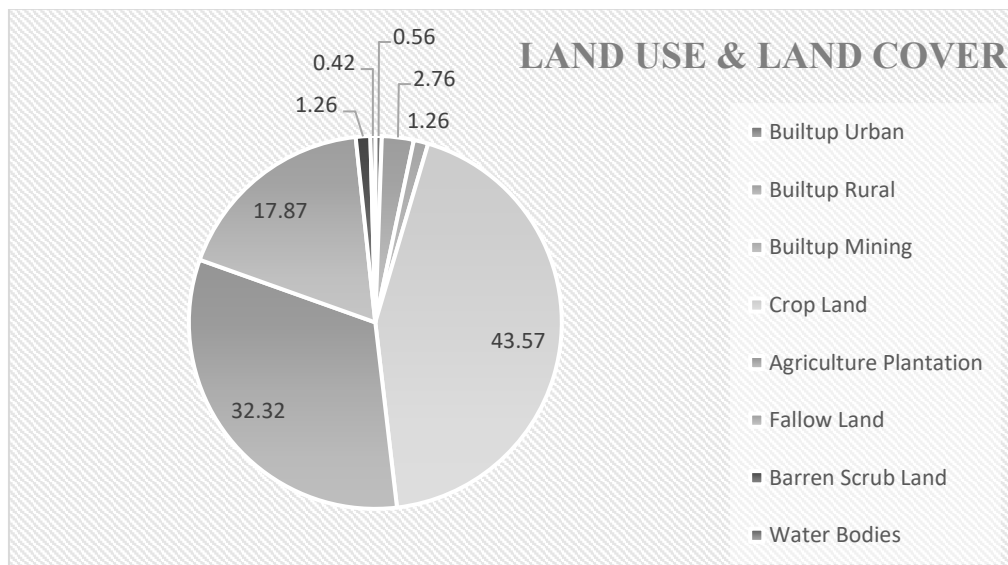
preparation of land use mapping. Land use pattern of the area was studied through LISS III imagery of Bhuvan (ISRO). The 10 km radius map of study area was taken for analysis of Land use cover.

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

S.No	CLASSIFICATION	AREA_HA	AREA_%
BUILTUP			
1	URBAN	181.69	0.56
2	RURAL	889.66	2.76
3	MINING	407.94	1.26
AGRICULTURAL LAND			
4	CROP LAND	14055.33	43.57
5	PLANTATION	10426.07	32.32
6	FALLOW LAND	5757.70	17.85
BARREN/WASTE LANDS			
7	SCRUB LAND	407.31	1.26
WETLANDS/ WATER BODIES			
8	WATER BODIES/LAKE/RIVER	134.31	0.42
TOTAL		32260.02	100.00

Source: Survey of India Toposheet and Landsat Satellite Imagery

FIGURE 3.1: PIE DIAGRAM OF LAND USE AND LAND IN STUDY AREA



Source: Table 3.2

From the above table, pie diagram and land use map it is inferred that the majority of the land in the study area is Agriculture and fallow land (includes crop land) 93.74 % followed by Built-up Lands - 4.58 %, Scrub lands – 1.26%, and Water bodies 0.42%.

The total mining area within the study area is 407.94 ha i.e., 1.26%. The cluster area of 6.62.0 ha contributes about 0.016% of the total mining area within the study area. This small percentage of Mining Activities shall not have any significant impact on the environment.

3.1.2 Topography

The proposed project area is undulated terrain, covered with gravel formation of 2m thickness; Massive Charnockite formation is found after 2m gravel formation which is clearly inferred from the existing quarry pits.

3.1.3 Drainage Pattern of the Area

Drainage pattern are created by stream erosion over time that reveals characteristics of the kind of rocks and geological structures in a landscape region drained by streams.

Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin. They are governed by the topography of the land, whether a particular region is dominated by hard or soft rocks, and the gradient of the land.

Dendritic patterns, which are by far the most common, develop in areas where the rock (or unconsolidated material) beneath the stream has no particular fabric or structure and can be eroded equally easily in all directions.

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

3.1.4 Seismic Sensitivity

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

(Source: https://moes.gov.in/writereaddata/files/LS_EN_20032020_385.pdf)

3.1.5 Environmental Features in the Study Area

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

FIGURE 3.2: LAND USE LAND COVER MAP 10KM RADIUS

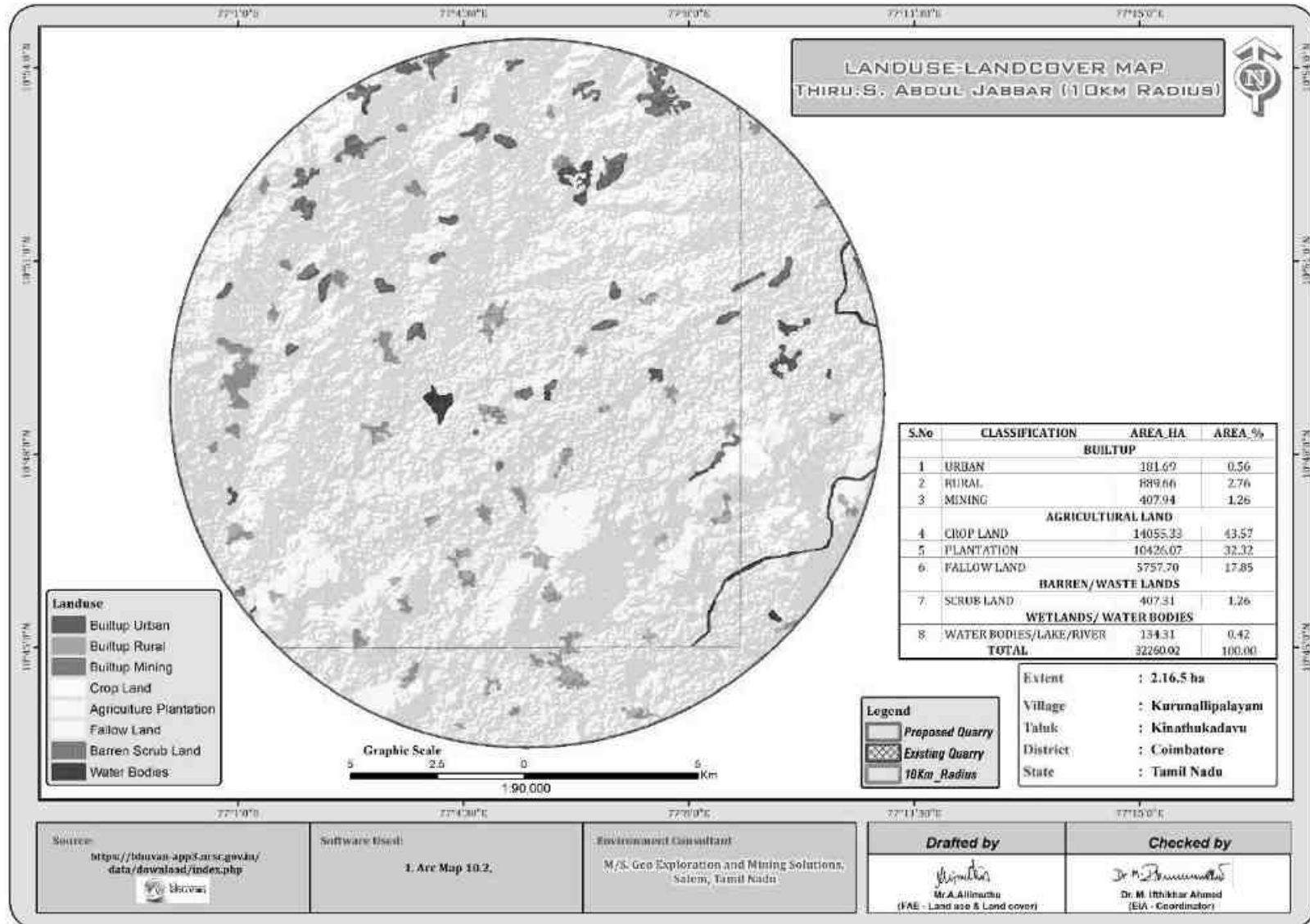


TABLE 3.3: DETAILS OF ENVIRONMENT SENSITIVITY AROUND THE CLUSTER

Sl.No	Sensitive Ecological Features	Name	Arial Distance in km from Cluster
1	National Park / Wild life Sanctuaries	None	Nil within 10km Radius
2	Reserve Forest	Bolampatti Block – I	19.02 km Northwest
3	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10Km Radius
4	Critically Polluted Areas	None	Nil within 10km Radius
5	Mangroves	None	Nil within 10km Radius
6	Mountains/Hills	None	Nil within 10km Radius
7	Notified Archaeological Sites	None	Nil within 10km Radius
8	Industries/ Thermal Power Plants	None	Nil within 10km Radius
9	Defence Installation	None	Nil within 10km Radius

Source: Survey of India Toposheet

TABLE 3.4: NEARBY WATER BODIES FROM THE PROPOSED PROJECT SITE

PROPOSAL – P1		
Sl.No	NAME	DISTANCE & DIRECTION
1	Canal	130m SE
2	Kodavadi Odai	2km NW
3	Canal	900m SE
4	PAP Canal	7.5km SE

Source: Village Cadastral Map and Field Survey

3.1.6 Soil Environment

Soil quality of the study area is one of the important components of the land environment. The composite soil samples were collected from the study area and analysed for different parameters. The locations of the monitoring sites are detailed in Table 3.5 and Figure 3.3.

The objective of the soil sampling is -

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

TABLE 3.5: SOIL SAMPLING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	S-1	Core Zone	Project Area	10°48'54.08"N 77° 5'29.85"E
2	S-2	Kurunallipalayam	1.2km SW	10°48'49.56"N 77° 4'47.31"E
3	S-3	Periyakalandai	3.8km East	10°48'54.03"N 77° 7'43.71"E
4	S-4	Mettuvavi	4km NE	10°50'21.95"N 77° 7'12.56"E
5	S-5	Jakkarpalayam	6.2km SE	10°47'24.98"N 77° 8'29.05"E
6	S-6	Kothavadi	4.0km SW	10°48'32.61"N 77° 3'18.80"E

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited in association with GEMS

Methodology –

For studying soil quality, sampling locations were selected to assess the existing soil conditions in and around the project site representing various land use conditions. The samples were collected by auger boring into the soil up to 90-cm depth. Six (6) locations were selected for soil sampling on the basis of soil types, vegetative cover, industrial & residential activities including infrastructure facilities, which would accord an overall idea of

the soil characteristics. The samples were analysed for physical and chemical characteristics. The samples were sent to laboratory for analysis. The samples were filled in Polythene bags, coded and sent to laboratory for analysis and the details of methodology in respect are given in below Table 3.6.

TABLE 3.6: METHODOLOGY OF SAMPLING COLLECTION

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

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited in association with GEMS

Soil Testing Result –

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

FIGURE 3.3: SOIL SAMPLING LOCATIONS AROUND 10 KM RADIUS

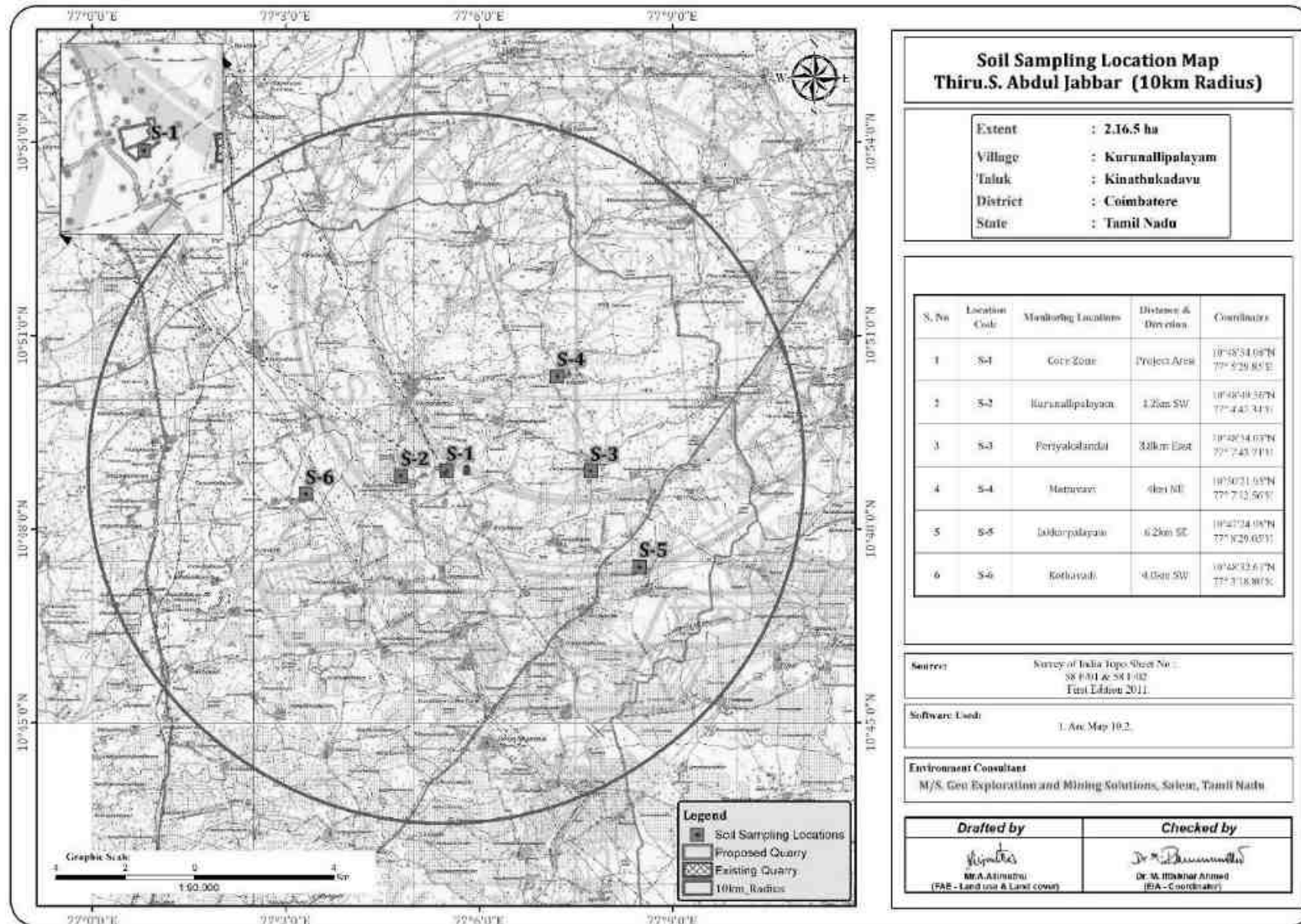


FIGURE 3.4: SOIL MAP

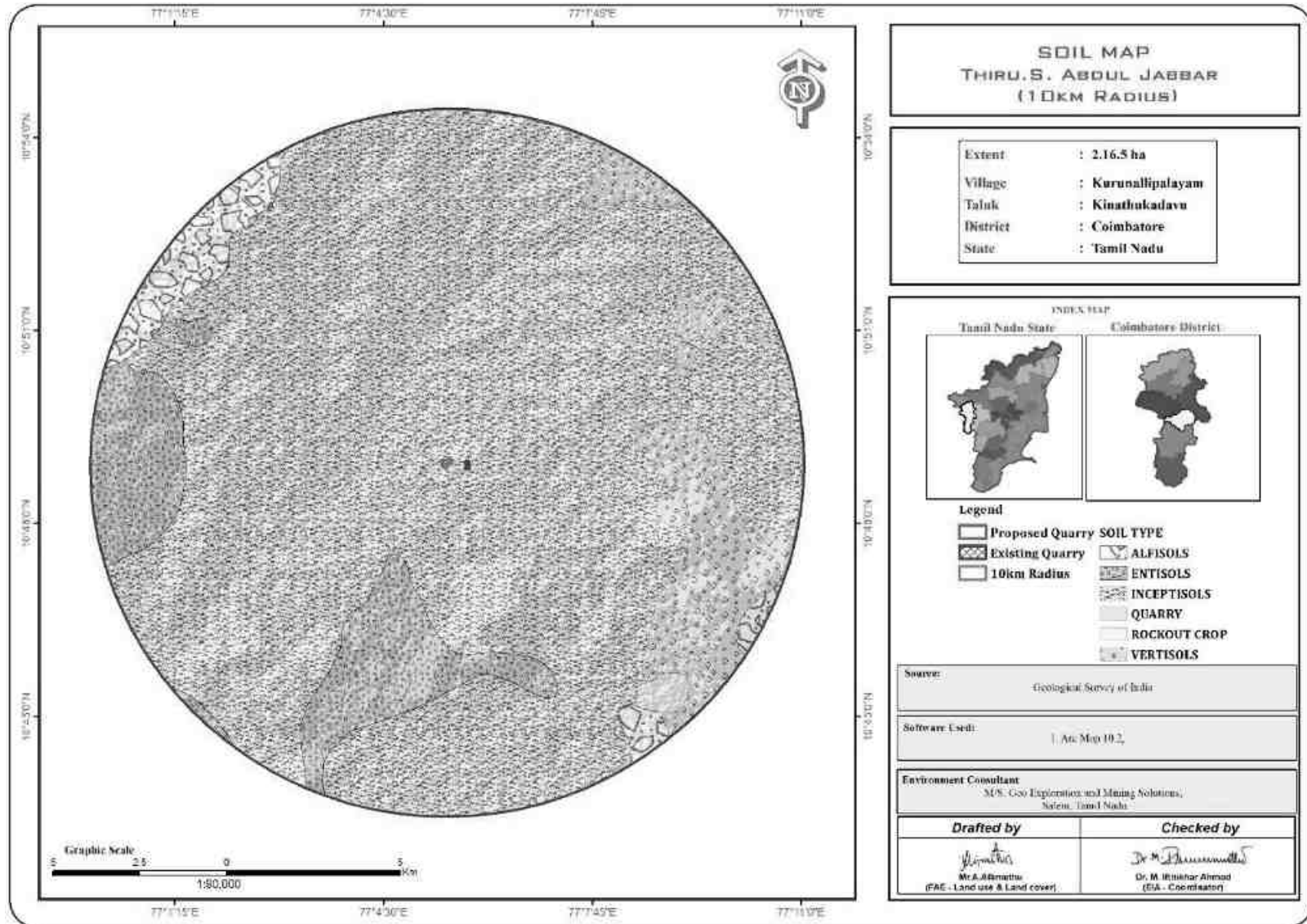


TABLE 3.7: SOIL QUALITY OF THE STUDY AREA

Parameter		Unit	S-1 Project Area	S-2 Ponakani	S-3 Chettipalayam	S-4 Edayarpalaya m	S-5 Karachery	S-6 Tegani
1	Soil Colour	-	Brown	Dark brown	Brown	Brown	Brown	Brown
2	pH at 27°C	-	8.74	8.19	8.50	8.23	8.01	8.93
3	Electrical Conductivity at 25°C	µs/cm	410	600	550	483	315	578
4	Water activity	-	Medium	Medium	Medium	Medium	Medium	Medium
5	Texture	-	Clay Loam	Sandy loam	Clay	Clay	Sandy Loam	Sandy Loam
6	Clay	%	33.8	32.2	36.9	44.2	34.9	36.7
7	Sand	%	36.4	35.5	32.4	32.6	37.3	35.3
8	Silt	%	29.4	32.3	30.7	23.2	27.8	28.0
9	Water Holding Capacity	%	44.7	46	47.8	44.6	44.6	43.2
10	Bulk Density	g/cc	1.08	1.22	1.3	1.16	1.01	1.2
11	Porosity	%	45.4	43.01	47.1	34.2	45.9	41.8
12	Exchangeable Calcium (as Ca)	mg/Kg	177	180	266	198	167	176.5
13	Exchangeable Magnesium (as Mg)	mg/Kg	80.7	136	80.6	155	127.3	122
14	Exchangeable Manganese (as Mn)	mg/Kg	25	27	17.4	34.2	20	19.7
15	Exchangeable Zinc as Zn	mg/Kg	1.1	1.06	2.4	0.98	2.1	1.17
16	Available Boron (as B)	mg/Kg	1.5	1.8	1.6	0.82	1.4	2
17	Soluble Chloride (as Cl)	mg/Kg	127	210	179	168	154	141
18	Soluble Sulphate (as So ₄)	%	0.016	0.028	0.017	0.016	0.016	0.29
19	Available Potassium (as K)	mg/Kg	30.5	40.9	43	38.2	38.2	35.2
20	Available Phosphorous (as P)	Kg/hect	1.9	3.7	1.9	1.24	1.8	1.6
21	Available Nitrogen (as N)	Kg/hect	260	470	261	170	298	356
22	Cadmium (as Cd)	mg/Kg	BDL (DL : 1.0 mg/kg)					
23	Chromium (as Cr)	mg/Kg	BDL (DL : 1.0 mg/kg)					
24	Copper (as Cu)	mg/Kg	BDL (DL : 1.0 mg/kg)					
25	Lead (as Pb)	mg/Kg	0.50	0.9	0.35	0.66	0.3	0.6
26	Total Iron	mg/Kg	2.09	1.77	2.35	2.31	2.8	2.43
27	Organic Matter	%	1.86	2.86	3.39	2.88	3.05	1.81
28	Organic Carbon	%	1.08	1.66	1.97	1.67	1.77	1.05
29	CEC	meq/100g	36	41.9	43	35.7	40.7	35.2

Interpretation & Conclusion

Physical Characteristics –

The physical properties of the soil samples were examined for texture, bulk density, porosity and water holding capacity. The soil texture found in the study area is Clay to Sandy Loam Soil and Bulk Density of Soils in the study area varied between 1.01 – 1.3 g/cc. The Water Holding Capacity and Porosity of the soil samples is found to be medium i.e. ranging from 34.2 – 47.1 %.

Chemical Characteristics –

- The nature of soil is slightly alkaline to strongly alkaline with pH range 8.01 to 8.93
- The available Nitrogen content range between 170 to 470 kg/ha
- The available Phosphorus content range between 1.24 to 3.7 kg/ha
- The available Potassium range between 30.5 to 43.0 mg/kg

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:

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

3.2.2 Ground Water Resources:

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

3.2.3 Methodology

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

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

One (1) surface water and Five (5) ground water samples were collected from the study area and were analysed for physio-chemical, heavy metals and bacteriological parameters in order to assess the effect of mining and other activities on surface and ground water. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012 and ‘Standard methods for the Examination of Water and Wastewater’ published by American Public Health Association (APHA). The water sampling locations are given in Table 3.8 and shown as Figure 3.5.

TABLE 3.8: WATER SAMPLING LOCATIONS

S.NO	LOCATION CODE	LOCATIONS	DISTANCE & DIRECTION	COORDINATES
SURFACE WATER				
1	SW-1	Kothavadi Lake	2.5km SW	10°48'41.67"N 77° 3'59.61"E
GROUND WATER				
2	WW-1	Core Zone	Near Project Area 400m NW	10°49'1.18"N 77° 5'14.16"E
3	WW-2	Arasampalayam	5.2km NW	10°50'38.81"N 77° 2'47.35"E
4	WW-3	Mettuvavi	3.8km NE	10°50'11.86"N 77° 7'13.95"E
5	BW-1	Core Zone	Near Project Area 280m SE	10°48'47.97"N 77° 5'36.75"E
6	BW-2	Jakkarpalayam	6.0km SE	10°47'30.57"N 77° 8'25.90"E

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited in association with GEMS.

FIGURE 3.5: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS

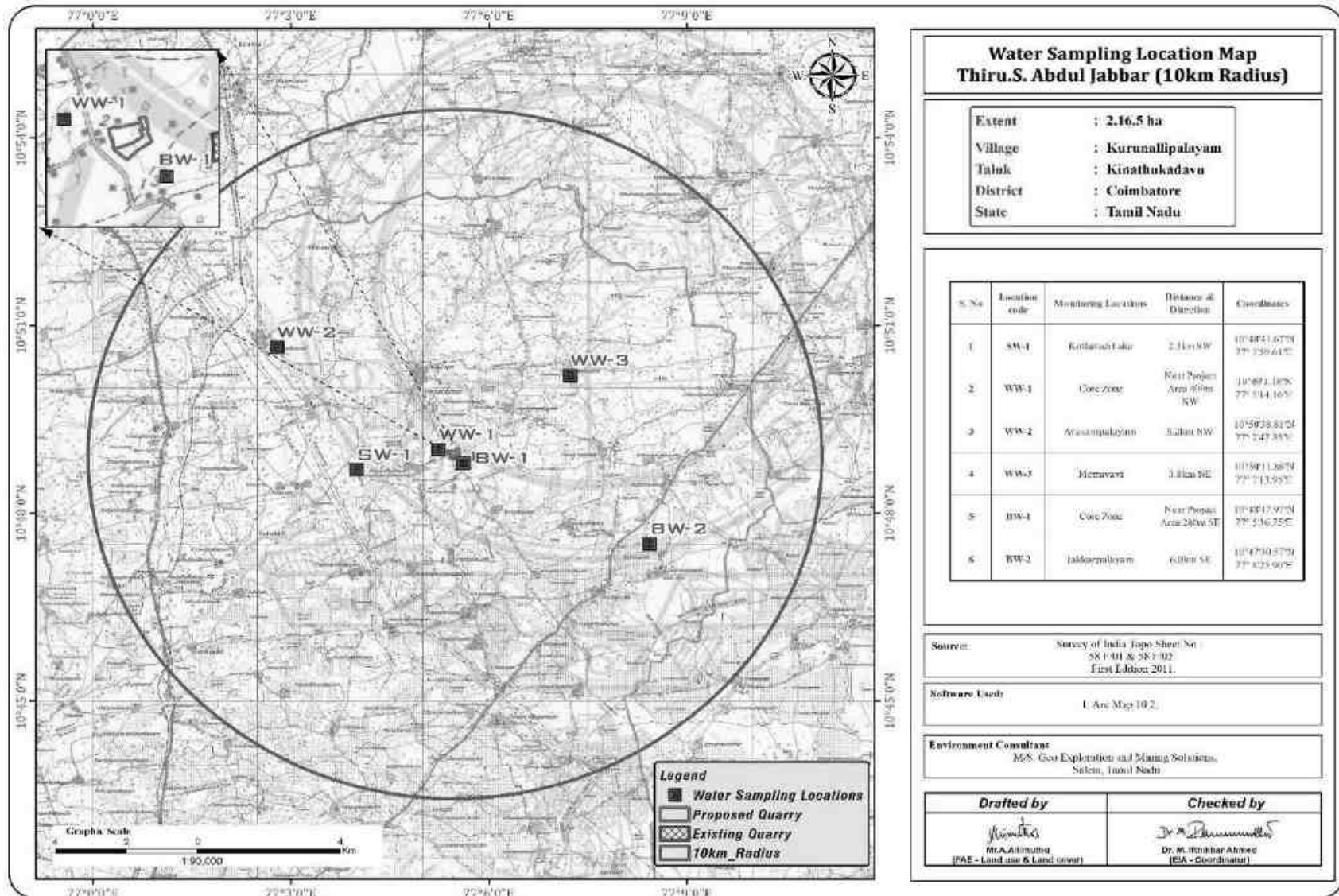


TABLE 3.9: GROUND WATER SAMPLING RESULTS

S.No	Parameters	Units	RESULTS					Standards as Per IS 10500: 2012	
			WW1	WW2	WW3	BW1	BW2	Acceptable limit	Permissible limit
1	Color	Hazen	5					5	5
2	Odour	-	Agreeable					Agreeable	Agreeable
3	Taste	-	Agreeable					Agreeable	Agreeable
4	pH@ 25°C	-	6.97	7.86	7.11	7.94	7.84	6.5-8.5	6.5-8.5
5	Electrical Conductivity @ 25°C	µs/cm	746	1093	935	873	864	Not specified	Not specified
6	Turbidity	NTU	1.9	1.8	1.4	1.3	1.3	1	1
7	TDS	mg/l	440	645	554	515	515	500	500
8	Total Hardness	mg/l	208.2	249.1	248.59	208.08	210	200	200
9	Calcium as Ca	mg/l	35.5	47.8	41.3	34.9	34.9	75	75
10	Magnesium as Mg	mg/l	29.1	31.6	35.4	28.7	28.7	30	30
11	Total Alkalinity	mg/l	180	268	220	186	186	200	200
12	Chloride as Cl-	mg/l	157.5	197.3	169	157.6	158	250	250
13	Sulphate as SO4-	mg/l	54.1	70.4	61.7	81.2	81.2	200	200
14	Iron as Fe	mg/l	0.47	0.26	0.3	0.5	0.5	0.3	0.3
15	Free Residual Cl	mg/l	BDL (DL:0.1)					0.2	0.2
16	Fluoride as F	mg/l	0.5	0.46	0.5	0.35	0.36	1.0	1.0
17	Nitrates as NO3	mg/l	11.2	7.5	5.8	7.5	7.9	45	45
18	Copper as Cu	mg/l	BDL (DL:0.01 mg/l)					0.05	0.05
19	Manganese as Mn	mg/l	BDL (DL:0.02 mg/l)					0.1	0.1
20	Mercury as Hg	mg/l	BDL (DL:0.0005 mg/l)					0.001	0.001
21	Cadmium as Cd	mg/l	BDL (DL:0.001 mg/l)					0.003	0.003
22	Selenium as Se	mg/l	BDL (DL:0.005 mg/l)					0.01	0.01
23	Aluminium as Al	mg/l	BDL (DL:0.005 mg/l)					0.03	0.03
24	Lead as Pb	mg/l	BDL (DL:0.005 mg/l)					0.01	0.01
25	Zinc as Zn	mg/l	BDL(DL : 0.05 mg/l)					5	5
26	Total Chromium	mg/l	BDL(DL : 0.02 mg/l)					0.05	0.05
27	Boron as B	mg/l	BDL(DL : 0.05 mg/l)					0.5	0.5
28	Mineral Oil	mg/l	BDL(DL : 0.01 mg/l)					0.5	0.5
29	Phenolic Compounds	mg/l	BDL (DL:0.0005 mg/l)					0.001	0.001
30	Anionic Detergents	mg/l	BDL (DL:0.01 mg/l)					0.2	0.2
31	Cyanide as CN	mg/l	BDL (DL:0.01 mg/l)					0.05	0.05
32	Barium as Ba	mg/l	BDL(DL:0.05 mg/l)					0.7	0.7
33	Ammonia	mg/l	BDL (DL:0.01 mg/l)					0.5	0.5
34	Sulphide as H ₂ S	mg/l	BDL (DL:0.01 mg/l)					0.05	0.05
35	Molybdenum	mg/l	BDL (DL:0.02 mg/l)					0.07	0.07
36	Total Arsenic	mg/l	BDL (DL:0.005 mg/l)					0.01	0.01
37	Total Suspended Solids	Mg/l	BDL (DL:1.0)					-	-
38	Total Coliform	MPN/	220	110	140	160	150	Shall not be detectable in any100 ml	Shall not be detectable in any100 ml
39	E-Coli	100ml	< 1.8						

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

TABLE 3.10: SURFACE WATER SAMPLING RESULTS

Sl. No.	Parameter	Unit	RESULT	CPCB Designated Best Use
			SWI	
1	Color	Hazen	5	300
2	Odour	-	Agreeable	Not specified
3	pH@ 25°C	-	7.66	6.5 – 8.5
4	Electrical Conductivity @ 25°C	µs/cm	1119	
5	Turbidity	NTU	3.9	Not specified
6	Total Dissolved Solids	mg/l	660	1500
7	Total Hardness as CaCO ₃	mg/l	220.69	Not specified
8	Calcium as Ca	mg/l	40.5	Not specified
9	Magnesium as Mg	mg/l	29.1	Not specified
10	Total Alkalinity as CaCO ₃	mg/l	257	Not specified
11	Chloride as Cl ⁻	mg/l	150	600
12	Sulphate as SO ₄ ⁻	mg/l	68.2	400
13	Iron as Fe	mg/l	0.4	50
14	Free Residual Chlorine	mg/l	BDL (DL:0.1)	400
15	Fluoride as F	mg/l	0.38	1.5
16	Nitrates as NO ₃	mg/l	12.2	50
17	Copper as Cu	mg/l	BDL (DL:0.01)	1.5
18	Manganese as Mn	mg/l	BDL (DL:0.02)	Not specified
19	Mercury as Hg	mg/l	BDL (DL:0.0005)	Not specified
20	Cadmium as Cd	mg/l	BDL (DL:0.001)	0.01
21	Selenium as Se	mg/l	BDL (DL:0.005)	Not specified
22	Aluminium as Al	mg/l	BDL (DL:0.005)	Not specified
23	Lead as Pb	mg/l	BDL (DL:0.005)	0.1
24	Zinc as Zn	mg/l	BDL(DL : 0.05)	15
25	Total Chromium	mg/l	BDL(DL : 0.02)	0.05
26	Boron as B	mg/l	BDL(DL : 0.05)	Not specified
27	Mineral Oil	mg/l	BDL(DL : 0.01)	Not specified
28	Phenolic Compounds as C ₆ H ₅ OH	mg/l	BDL (DL:0.0005)	0.005
29	Anionic Detergents as MBAS	mg/l	BDL (DL:0.01)	Not specified
30	Cyanide as CN	mg/l	BDL (DL:0.01)	0.05
31	Biological Oxygen Demand, 3 days @ 27°C	mg/l	6.6	3
32	Chemical Oxygen Demand	mg/l	24	Not specified
33	Dissolved Oxygen	mg/l	5.4	4
34	Barium as Ba	mg/l	BDL(DL:0.05)	300
35	Ammonia (as Total Ammonia-N)	mg/l	BDL (DL:0.01)	Not specified
36	Sulphide as H ₂ S	mg/l	BDL (DL:0.01)	Not specified
37	Molybdenum as Mo	mg/l	BDL (DL:0.02)	Not specified
38	Total Arsenic as As	mg/l	BDL (DL:0.005)	0.2
39	Total Suspended Solids	mg/l	25.4	-
40	Total Coliform	MPN/ 100ml	1330	5000
41	E-Coli		120	Not specified

3.2.4 Interpretation & Conclusion

Surface Water

The pH of surface 7.66 while turbidity found within the standards. Total Dissolved Solids 660mg/l and Chloride 150 mg/l. Nitrates 12.2 mg/l, while sulphates 68.2 mg/l.

Ground Water

The pH of the water samples collected ranged from 6.97 to 7.94 and within the acceptable limit of 6.5 to 8.5. pH, Sulphates and Chlorides of water samples from all the sources are within the limits as per the Standard. on Turbidity, the water samples meet the requirement. Total Dissolved Solids were found in the range of 440 - 645mg/l in all samples. Total hardness varied between 208.08 – 249.1 mg/l for all samples.

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

3.2.5 Hydrology and Hydrogeological studies

The district is underlain by hard rock formation fissured and fractured crystalline rocks constitute the important aquifer systems in the district. Geophysical prospecting was carried out in that area by SSRMP-80 Instrument by qualified Geo physicist with the help of IGIS software and it was inferred that the low resistance encountered at the depth between **60-65m**. The maximum depth proposed out of proposed project is **47m BGL**. Hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area. 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 which will be collected and 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.

TABLE 3.11: POST MONSOON WATER LEVEL OF OPEN WELLS 1 KM RADIUS

Station Code	Water Level in Meters bgl				Latitude	Longitude
	Oct 2022	Nov 2022	Dec 2022	Average		
OW1	13.8	14.4	15	14.4	77° 05' 14.14"E	10° 49' 01.17"N
OW2	13.5	14.1	14.7	14.1	77° 05' 22.55"E	10° 49' 15.15"N
OW3	14.8	15.4	16	15.4	77° 05' 16.97"E	10° 49' 22.82"N
OW5	14	14.6	15.2	14.6	77° 05' 35.28"E	10° 48' 41.30"N
OW4	14.2	14.8	15.4	14.8	77° 05' 57.05"E	10° 48' 29.05"N
OW6	13.5	14.1	14.7	14.1	77° 05' 37.73"E	10° 49' 25.15"N
OW7	13.2	13.8	14.4	13.8	77° 06' 15.44"E	10° 48' 41.20"N
OW8	14.6	15.2	15.8	15.2	77° 06' 16.39"E	10° 48' 32.46"N
OW9	14.8	15.4	16	15.4	77° 04' 56.06"E	10° 49' 02.46"N

Source: Onsite monitoring data

TABLE 3.12: PRE MONSOON WATER LEVEL OF BOREWELLS 1 KM RADIUS

Station Code	Water Level in Meters bgl				Latitude	Longitude
	Oct 2022	Nov 2022	Dec 2022	Average		
BW1	62.5	63.1	63.7	63.1	77° 05' 36.97"E	10° 48' 48.16"N
BW2	62.8	63.4	64	63.4	77° 05' 20.25"E	10° 49' 09.00"N
BW3	61.5	62.1	62.7	62.1	77° 05' 32.75"E	10° 49' 26.86"N
BW4	62	62.6	63.2	62.6	77° 06' 02.01"E	10° 48' 56.18"N
BW5	61.8	62.4	63	62.4	77° 06' 14.39"E	10° 49' 17.67"N
BW6	61.4	62	62.6	62	77° 05' 50.49"E	10° 48' 43.69"N
BW7	62.2	62.8	63.4	62.8	77° 05' 44.87"E	10° 48' 19.32"N
BW8	62.6	63.2	63.8	63.2	77° 05' 08.10"E	10° 48' 49.08"N
BW9	61.6	62.2	62.8	62.2	77° 04' 54.29"E	10° 48' 47.05"N
BW10	61.5	62.1	62.7	62.1	77° 04' 56.54"E	10° 49' 03.26"N

Source: Onsite monitoring data

FIGURE 3.6: OPEN WELL CONTOUR MAP – OCTOBER 2022

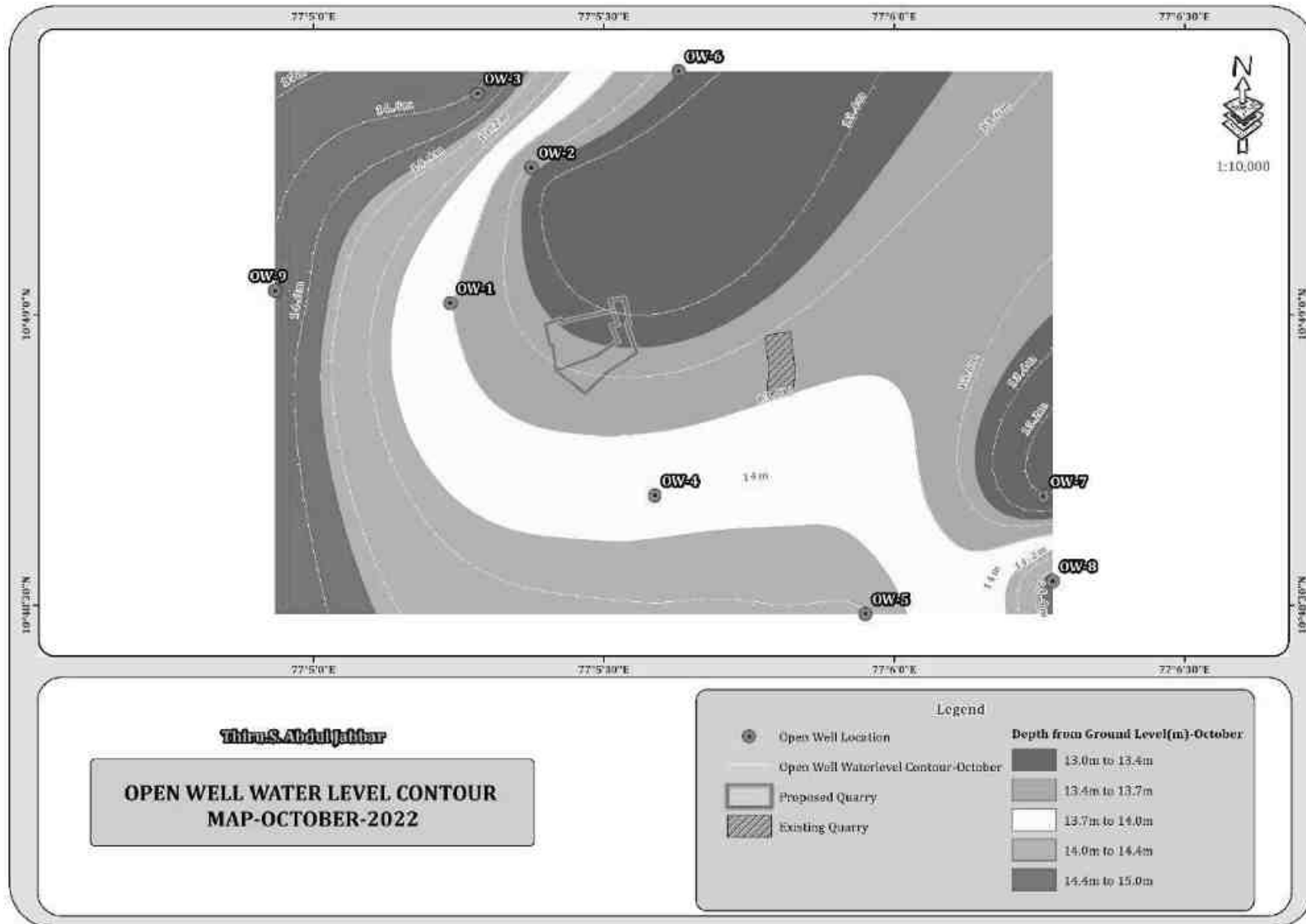


FIGURE 3.7: OPEN WELL CONTOUR MAP – NOVEMBER 2022

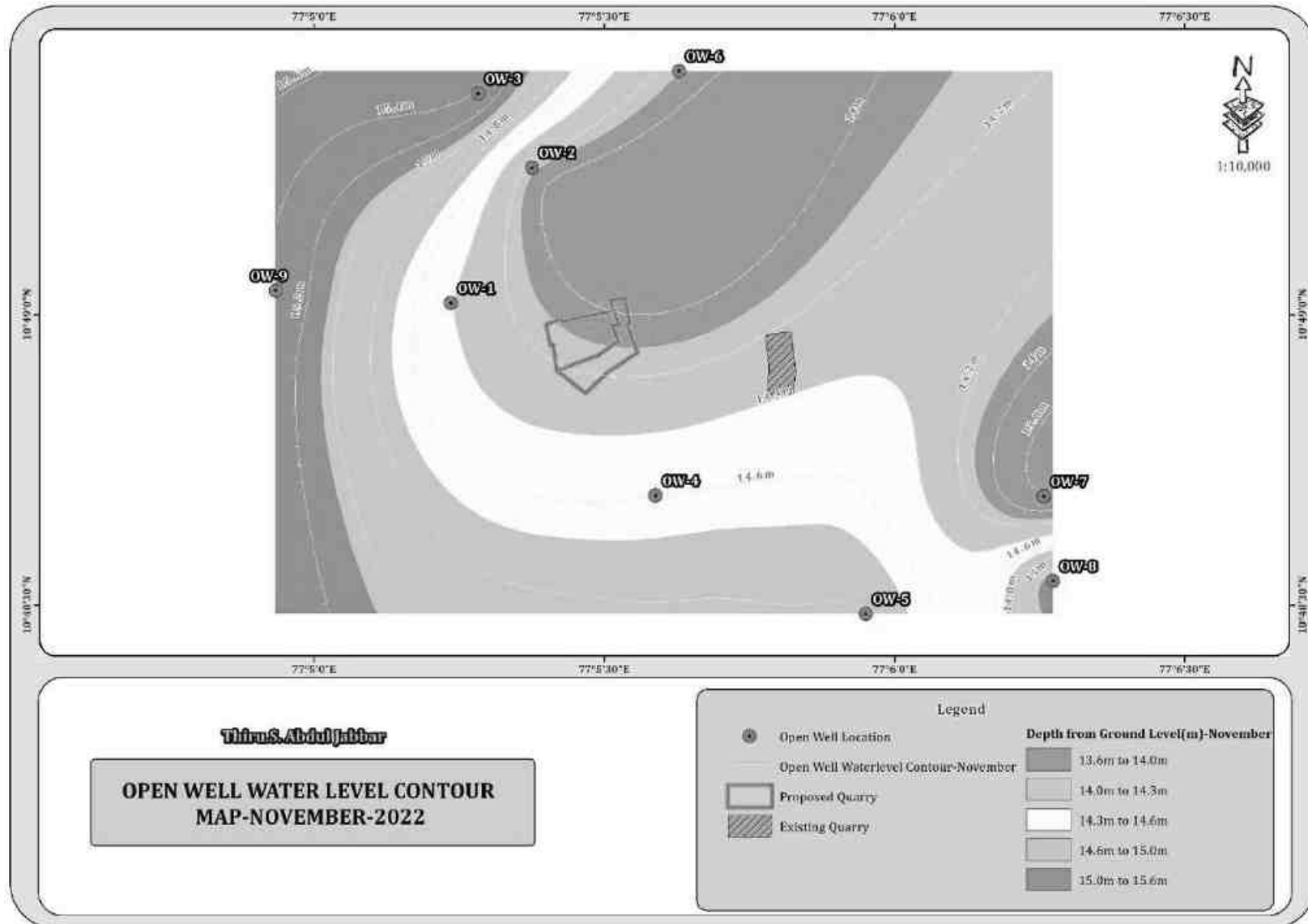


FIGURE 3.8: OPEN WELL CONTOUR MAP – DECEMBER 2022

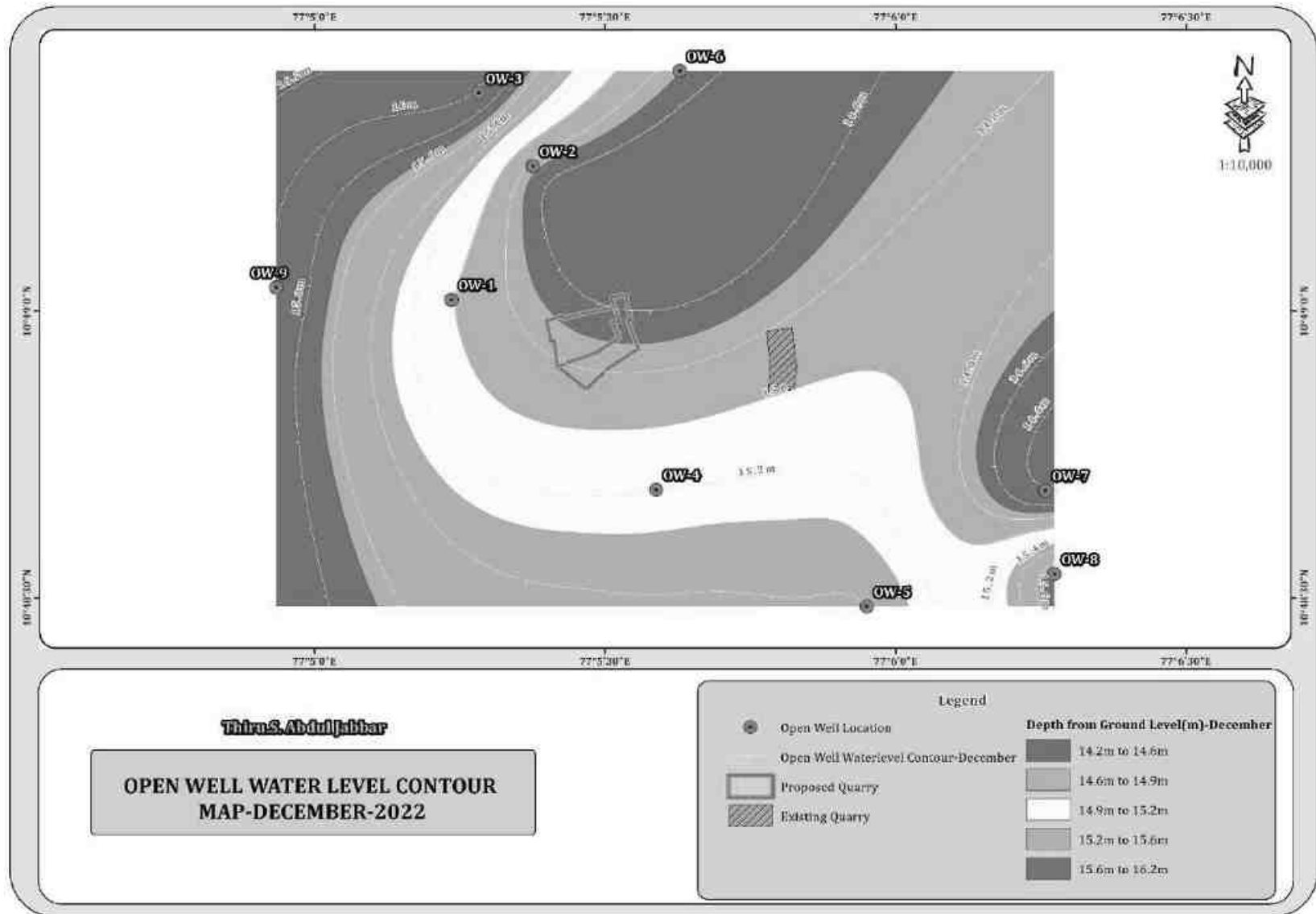


FIGURE 3.9: BOREWELL CONTOUR MAP – OCTOBER 2022

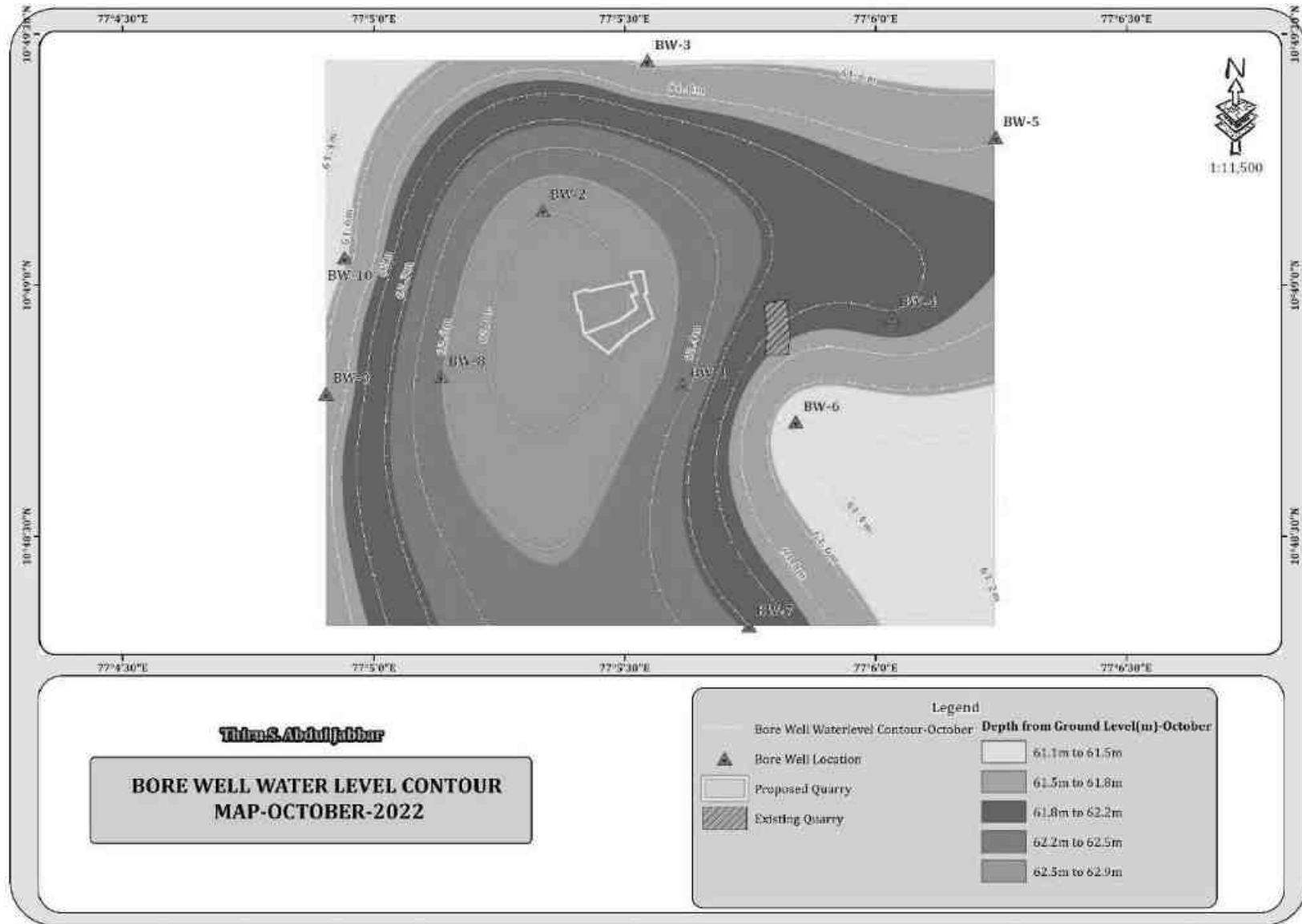


FIGURE 3.10: BOREWELL CONTOUR MAP – NOVEMBER 2022

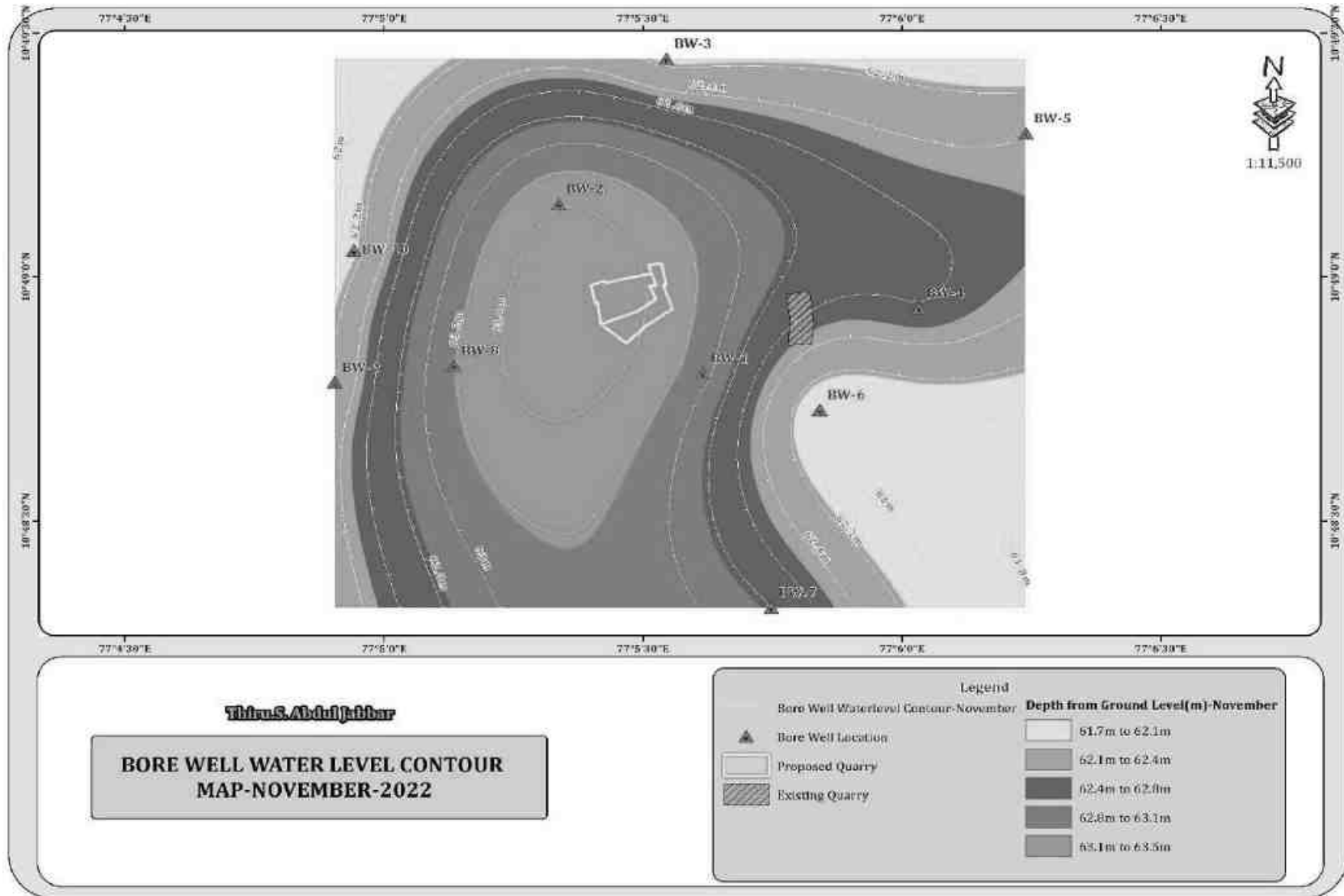


FIGURE 3.11: BOREWELL CONTOUR MAP – DECEMBER 2022



FIGURE 3.12: DRAINAGE MAP AROUND 10 KM RADIUS FROM PROJECT SITE

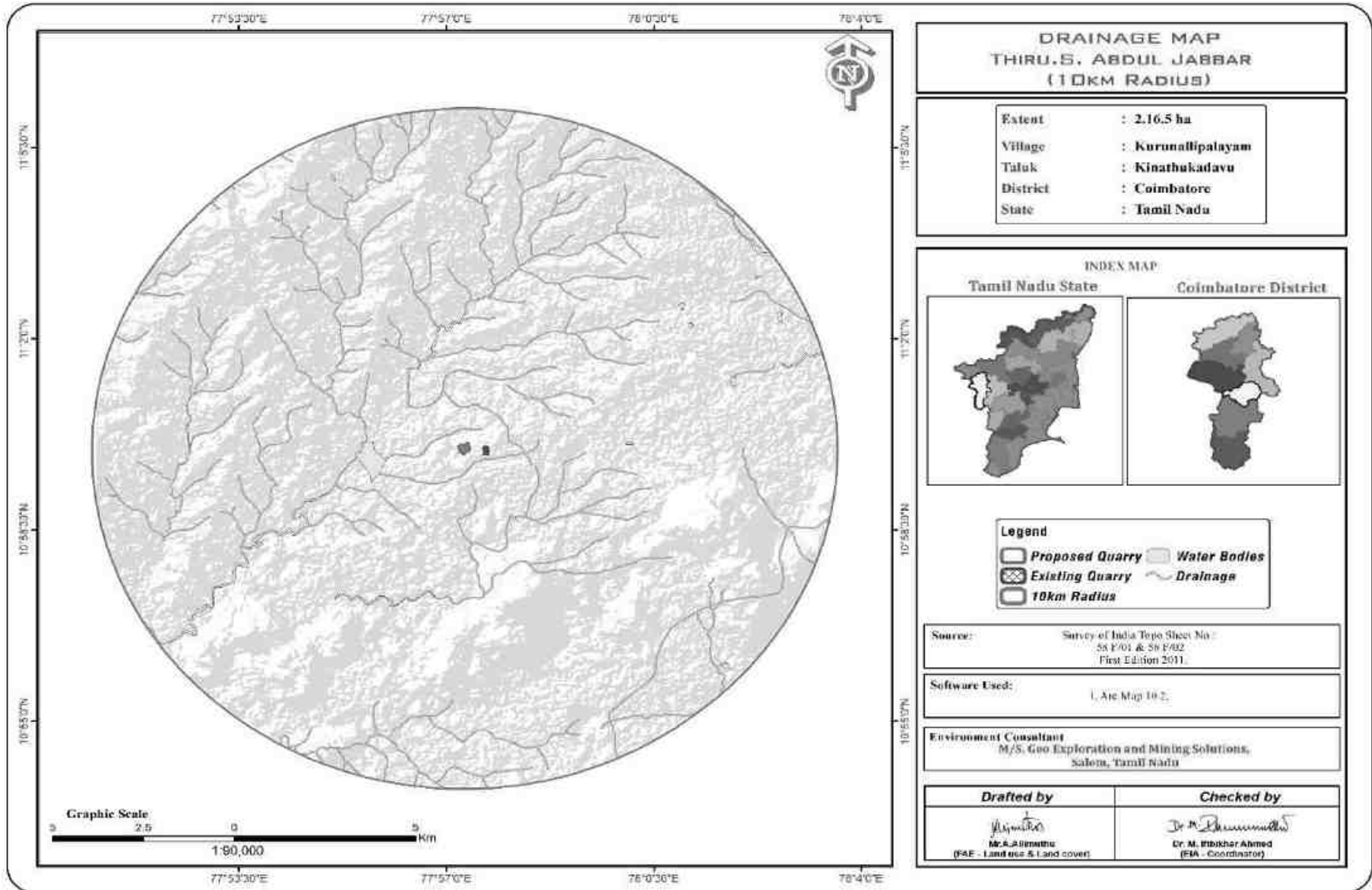
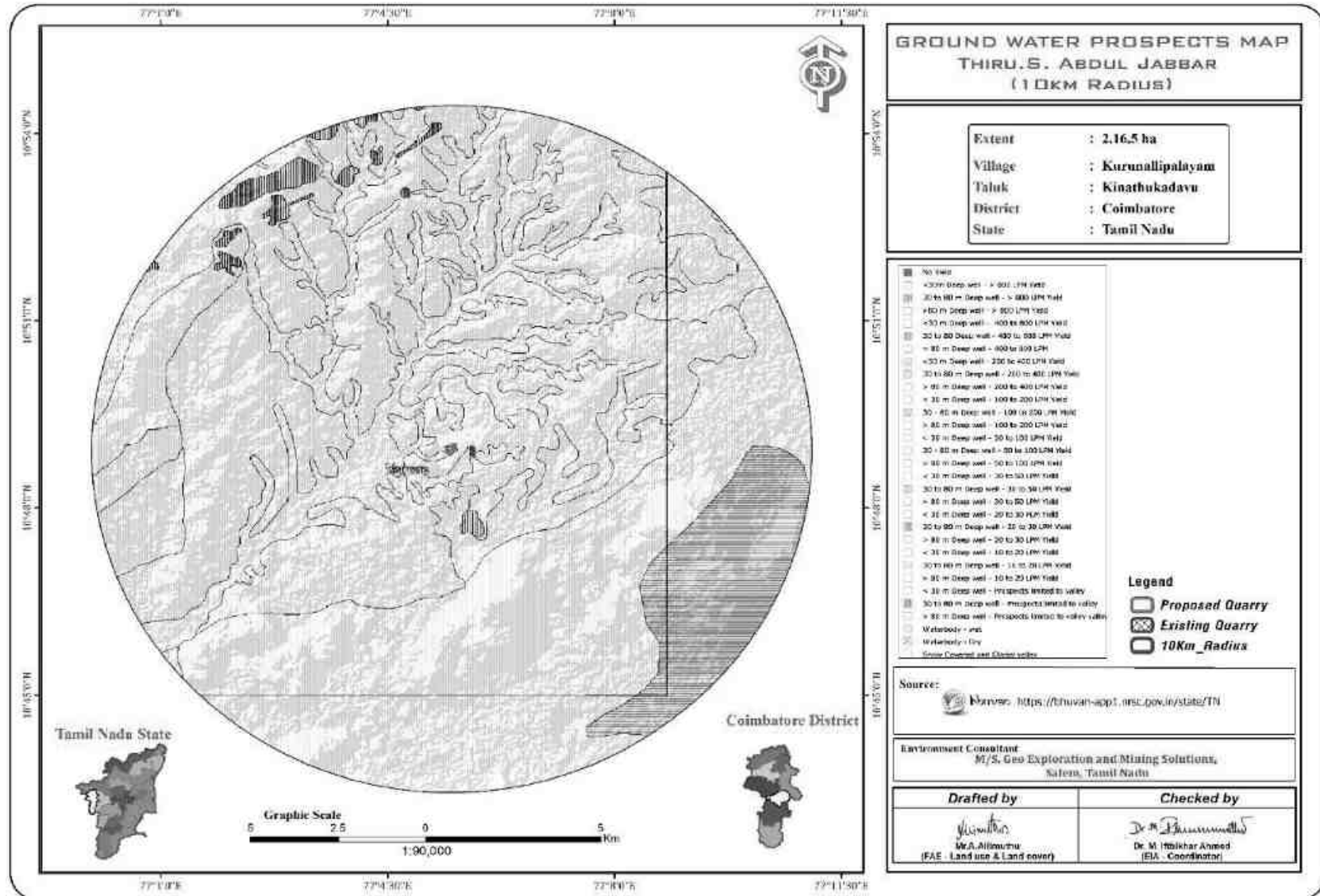


FIGURE 3.13: GROUND WATER PROSPECT MAP



3.2.5.1 Methodology and Data Acquisition

Electric Resistivity Method is well established for delineating lateral as well vertical discontinuities in the resistive structure of the Earth's subsurface. The present study makes use of vertical electric sounding (VES) to delineate the Vertical Resistivity structure at depth. Schlumberger electrode set up was employed for making sounding measurements. Since it is least influenced by lateral in homogeneities and is capable of providing higher depth of investigation. This is four electrodes collinear set up where in the outer electrodes send current into the ground and the inner electrodes measure the potential difference.

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

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

$$\rho_a = \frac{G \Delta V}{I}$$

ΔV = potential difference between receiving electrodes

G = Geometric Factor.

Rocks show wide variation in resistivity ranging from 10-8 more than 10+14 ohmmeter. On a broad classification, one can group the rocks falling in the range of 10-8 to 1 ohmmeter as good conductors. 1 to 106 ohmmeter as intermediate conductors and 106 to 1012 ohmmeter as more as poor conductor. The resistivity of rocks and subsurface lithology, which is mostly dependent on its porosity and the pore fluid resistivity is defined by Archie's Law,

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

ρ_r = Resistivity of Rocks

ρ_w = Resistivity of water in pores of rock

F = Formation Factor

\emptyset = Fractional pore volume

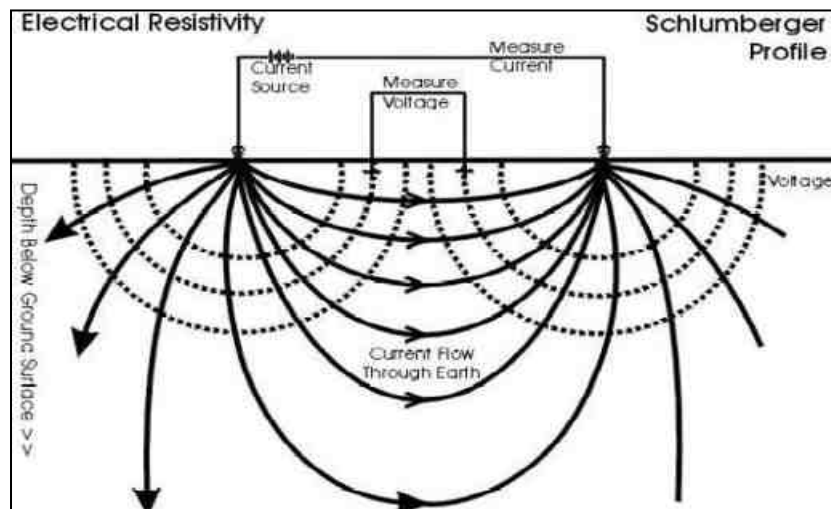
A = Constants with values ranging from 0.5 to 2.5

3.2.5.2 Survey Layout

The layout for a resistivity survey depends on the choice of the current and potential electrode arrangement, which is called electrode array. Here the present study is considered with Schlumberger array. In which the distance may be used for current electrode separation while potential electrode separation is kept on third to one fifth of the same. One interesting aspect in VES is the principle of reciprocity, which permits interchange of the potential and current electrode without any effect on the measured apparent resistivity.

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

RESISTIVITY SURVEY PROFILE



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

3.2.5.3 Data Presentation

It was inferred that the low resistance encountered at the depth between **60-65m**. The maximum depth proposed out of proposed projects is **47m BGL**. Hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

3.2.5.4 Geophysical Data Interpretation

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

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 –

Coimbatore is 421m above sea level. Coimbatore's climate is classified as tropical. The summers here have a good deal of rainfall, while the winters have very little rain. This location is classified as Aw by Köppen and Geiger. In Coimbatore –

- Coimbatore's climate is classified as tropical. The summers here have a good deal of rainfall, while the winters have very little.
- The Köppen-Geiger climate classification is Aw. The average annual temperature in Coimbatore is 25.4 °C | 77.8 °F. The annual rainfall is 952 mm | 37.5 inch.
- This region, situated near the equator line, is characterized by difficult-to-define summer seasons. The best time to visit is March, April, May.
- Precipitation is the lowest in January, with an average of 13 mm | 0.5 inch. Most of the precipitation here falls in October, averaging 181 mm | 7.1 inch.
- At an average temperature of 28.9 °C | 84.1 °F, April is the hottest month of the year. December is the coldest month, with temperatures averaging 23.2 °C | 73.7 °F.

<https://en.climate-data.org/asia/india/tamil-nadu/coimbatore-2788/>

Rainfall –

TABLE 3.13: RAINFALL DATA

Actual Rainfall in mm									Normal Rainfall in mm
2013	2014	2015	2016	2017	2018	2019	2020	2021	
901.0	1221.7	992.9	505.5	873.4	1302.0	272.4	1585.3	2119.1	1213.2

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

TABLE 3.14: METEOROLOGICAL DATA RECORDED AT SITE

S.No	Parameters		Oct – 2022	Nov– 2022	Dec– 2022
1	Temperature (°C)	Max	24.26	23.27	23.11
		Min	22.34	21.05	20.68
		Avg	23.3	22.16	21.895
2	Relative Humidity (%)	Avg	83.75	84.345	83.595
3	Wind Speed (m/s)	Max	3.2	3.61	4.38
		Min	1.04	0.95	1.46
		Avg	2.12	2.28	2.92
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind Direction		WSW,W	ENE,E	ENE,NE

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited Laboratories in association with GEMS

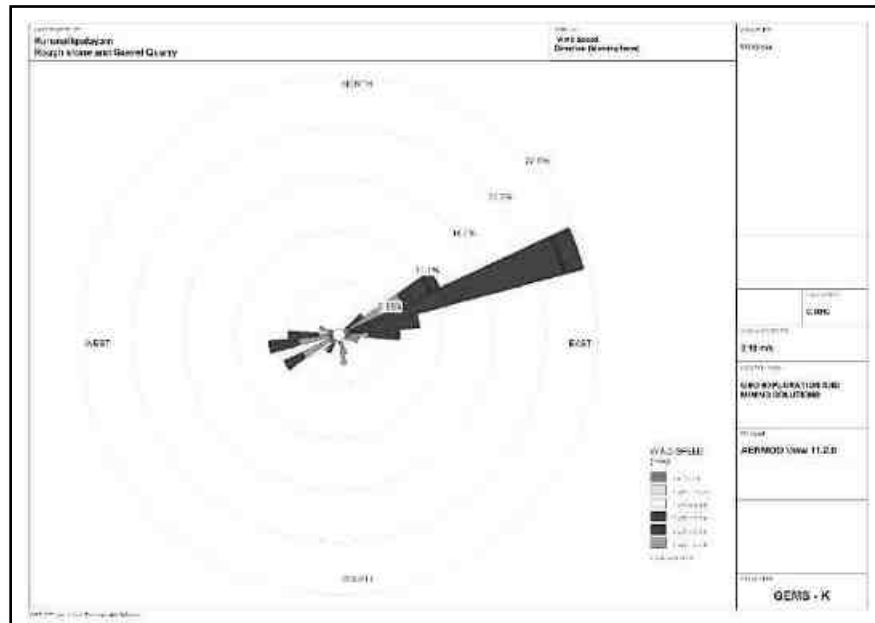
Correlation between Secondary and Primary Data

The meteorological data collected at the site is almost similar to that of secondary data collected from IMD Coimbatore_Agro. A comparison of site data generated during the three months with that of IMD, Coimbatore_Agro reveals the following:

- The average maximum and minimum temperatures of IMD, Coimbatore_Agro showed a higher in respect of on-site data i.e. in Kurunallipalayam village.
- The relative humidity levels were lesser at site as compared to IMD, Coimbatore_Agro.
- The wind speed and direction at site shows similar trend that of IMD, Coimbatore_Agro.

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 South West.

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.3.14 during the monitoring period in the study area

- Predominant winds were from WSW,W, ENE, E, ENE,NE
- Wind velocity readings were recorded between 0.50 to 5.70 m/s
- Calm conditions prevail of about 0 % of the monitoring period
- Temperature readings ranging from 20.68 to 24.26°C
- Relative humidity ranging from 83-84 %
- The monitoring was carried out continuously for three months.

3.3.2 Methodology and Objective

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

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

3.3.3 Sampling and Analytical Techniques

TABLE 3.15: METHODOLOGY AND INSTRUMENT USED FOR AAQ ANALYSIS

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

Source: Sampling Methodology followed by Chennai Mettex Lab Privated Limited & CPCB Notification

TABLE 3.16: NATIONAL AMBIENT AIR QUALITY STANDARDS

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

Source: NAAQS CPCB Notification No. B-29016/20/90/PCI-I Dated: 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 Eight (8) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period Oct 2022 to Dec 2022. 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

Eight (8) monitoring stations were set up in the study area as depicted in Figure 3.15 for assessment of the existing ambient air quality. Details of the sampling locations are as per given below.

TABLE 3.17: AMBIENT AIR QUALITY (AAQ) MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	AAQ1	Core Zone	Project Area	10°48'54.14"N 77° 5'25.59"E
2	AAQ2	Kurunallipalayam	1.2km SW	10°48'49.13"N 77° 4'48.21"E
3	AAQ3	Periyakalandai	3.8km East	10°48'57.16"N 77° 7'42.37"E
4	AAQ4	Kappalankarai	5.2km South	10°46'0.75"N 77° 5'50.24"E
5	AAQ5	Arasampalayam	6km NW	10°50'33.58"N 77° 2'31.20"E
6	AAQ6	Mettuvavi	4km NE	10°50'21.58"N 77° 7'13.66"E
7	AAQ7	Jakkarpalayam	6.2km SE	10°47'23.10"N 77° 8'33.19"E
8	AAQ8	Kothavadi	4.0km SW	10°48'31.11"N 77° 3'14.49"E

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited Laboratories in association with GEMS

FIGURE 3.15: AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS

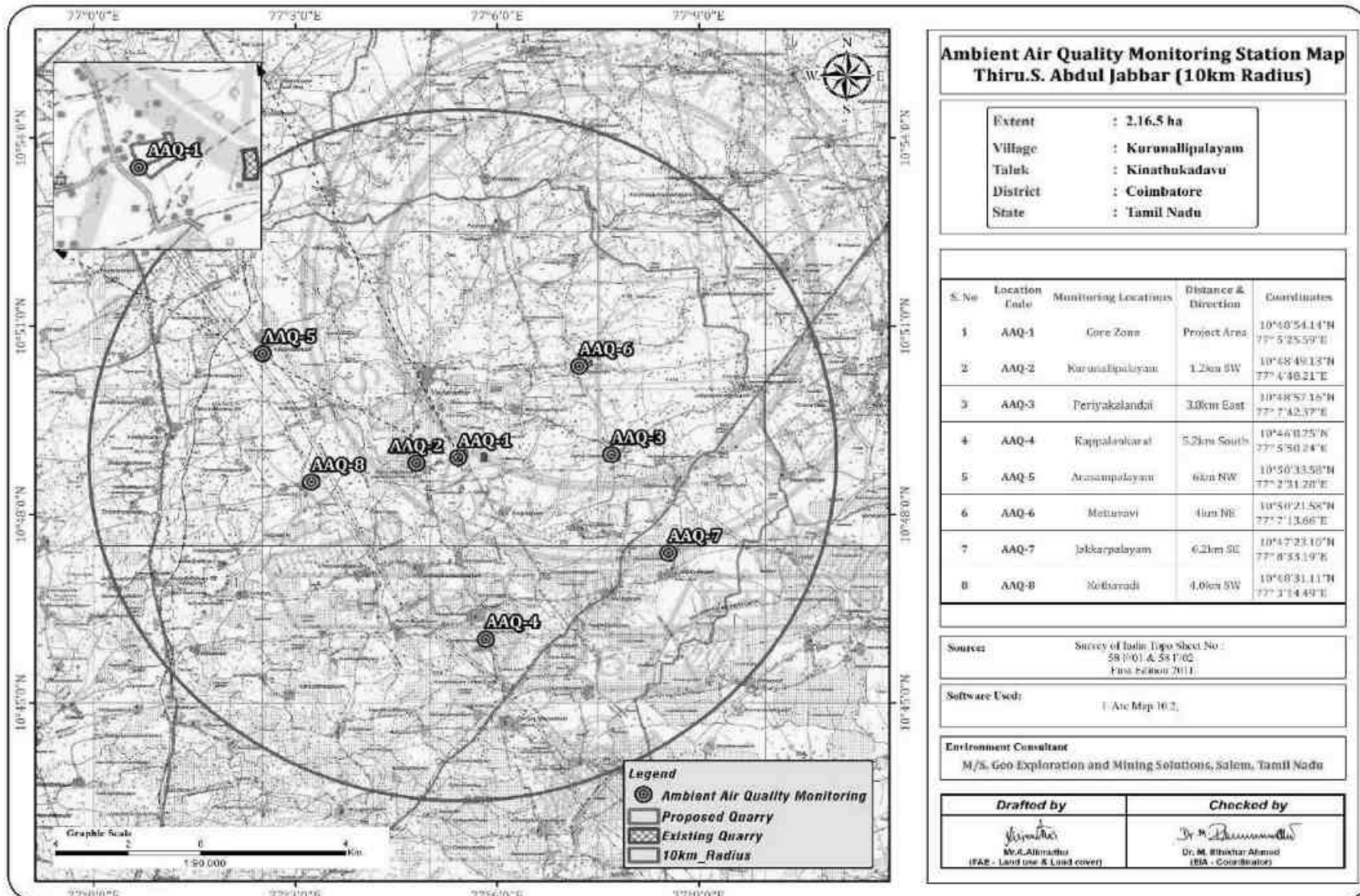


TABLE 3.18: AMBIENT AIR QUALITY DATA LOCATION AAQ1

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	71.3	23.5	45.3	8.5	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	71.8	22.6	43.5	7.3	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	70.5	21.3	44.7	7.9	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	70.9	21.8	42.6	9.0	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	78.4	22.9	43.8	8.4	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	79.6	21.2	44.9	8.3	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	71.7	22.1	42.6	7.4	18.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	79.5	23.0	44.0	7.6	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	71.6	21.7	42.5	8.4	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	70.7	22.6	43.6	8.9	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	79.4	21.7	43.8	7.4	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	71.8	22.5	45.0	7.1	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	72.0	21.7	44.2	8.4	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	79.7	22.6	44.8	8.7	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	70.2	21.0	43.6	7.6	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	79.1	22.6	43.6	7.7	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	71.6	21.8	44.8	8.1	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	70.0	22.3	43.6	7.8	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	78.4	21.0	42.9	8.6	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	69.7	22.8	44.9	8.4	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	70.7	21.6	42.0	7.5	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	69.1	21.4	44.6	7.9	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	70.4	22.9	43.9	8.1	18.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	71.9	23.0	43.2	8.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	72.0	21.3	44.1	7.8	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	79.4	21.6	42.7	9.0	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1:0); Pb: BDL (DL:0:1); Ni: BDL (DL:1:0); As: BDL (DL:1:0); C₆H₆: BDL (DL:1:0); BaP: BDL (DL:0:1)

Remarks: The values observed for the pollutants given above are within the CPCB standards:

TABLE 3.19: AMBIENT AIR QUALITY DATA LOCATION AAQ2

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	71.6	21.1	43.7	6.9	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	72.6	22.2	42.3	6.7	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	72.1	20.9	44.1	6.2	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	72.9	21.3	43.9	5.3	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	73.9	21.1	43.3	5.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	72.1	21.1	42.7	6.2	22.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	61.4	20.4	42.2	6.6	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	62.1	21.5	44.8	6.4	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	61.9	21.7	44.1	5.5	22.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	71.8	22.1	45.8	5.2	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	73.6	20.6	44.2	5.8	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	72.6	19.9	43.4	6.7	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	72.4	19.1	43.9	5.9	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	72.8	18.9	43.2	5.8	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	76.1	20.5	42.7	5.3	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	74.6	20.9	41.2	5.7	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	75.2	20.3	41.6	5.5	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	63.8	19.9	42.2	5.2	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	64.4	21.5	42.6	5.8	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	63.1	20.1	41.1	5.6	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	64.7	21.7	42.7	5.5	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	75.2	20.4	41.2	7.7	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	76.9	19.7	42.7	7.6	19.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	74.6	18.9	43.9	7.3	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	75.4	20.1	43.4	7.6	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	75.7	21.3	42.9	7.7	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.20: AMBIENT AIR QUALITY DATA LOCATION AAQ3

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	71.8	21.6	43.6	7.5	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	79.6	22.8	42.8	7.1	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	78.1	21.9	44.6	8.6	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	71.5	22.7	45.0	8.8	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	72.0	21.3	42.6	8.1	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	68.9	23.0	46.3	9.2	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	60.1	22.9	43.7	7.6	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	60.8	21.7	43.1	7.9	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	61.6	23.9	42.7	8.0	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	61.8	22.8	44.1	7.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	60.5	21.5	43.7	7.4	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	79.7	21.9	44.8	7.1	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	78.6	21.0	43.9	7.6	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	78.1	21.9	44.7	8.3	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	70.5	21.2	42.9	8.7	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	70.8	22.6	43.7	9.0	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	71.6	22.1	42.6	7.4	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	71.1	21.4	42.1	7.3	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	79.7	21.9	44.8	8.4	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	78.3	21.0	45.0	8.1	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	60.2	22.3	42.8	7.7	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	61.6	22.9	43.6	7.4	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	61.4	21.5	44.5	8.6	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	79.6	21.1	42.7	8.1	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	78.4	23.0	43.6	8.4	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	70.0	22.6	44.8	8.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.21: AMBIENT AIR QUALITY DATA LOCATION AAQ4

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	69.7	21.7	43.7	7.6	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	60.8	22.6	42.1	7.1	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	69.4	21.1	44.9	8.6	18.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	69.9	21.9	43.8	8.1	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	69.5	22.6	42.6	7.3	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	68.7	22.4	43.1	7.9	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	69.3	23.9	46.8	9.5	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	61.7	22.4	45.0	8.1	23.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	62.0	21.9	44.6	9.0	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	61.6	22.5	43.8	7.3	19.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	60.5	21.7	44.8	7.7	18.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	69.4	21.5	43.2	8.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	69.1	21.3	42.6	8.1	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	69.8	22.0	42.1	8.9	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	69.7	22.9	44.8	7.6	18.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	69.6	22.6	45.0	7.1	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	69.8	21.4	43.7	8.9	19.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	61.3	21.8	44.6	7.2	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	60.2	21.1	42.7	7.7	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	68.9	22.0	43.6	8.6	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	69.6	22.9	44.8	8.3	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	69.1	23.0	44.1	7.6	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	69.5	22.6	42.6	7.1	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	69.0	21.3	43.7	8.8	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	68.7	22.1	44.1	7.6	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	69.7	22.8	43.6	7.1	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.22: AMBIENT AIR QUALITY DATA LOCATION AAQ5

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	70.7	22.7	43.7	7.6	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	78.3	21.6	44.8	7.1	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	79.4	23.0	45.0	8.9	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	70.5	22.6	42.6	8.4	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	71.7	21.8	42.7	8.5	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	71.9	21.1	44.6	9.0	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	70.5	22.0	42.8	7.2	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	79.6	21.4	42.1	7.6	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	78.7	23.6	43.6	8.1	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	78.0	22.1	44.0	8.7	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	79.6	21.8	44.8	8.1	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	70.8	21.4	46.1	9.6	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	71.4	22.3	44.1	8.4	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	72.0	23.0	43.6	9.3	22.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	78.7	22.3	43.8	7.9	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	79.4	21.7	42.6	7.2	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	79.1	21.2	42.1	9.0	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	70.4	22.6	42.8	8.2	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	71.7	22.3	43.6	7.6	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	70.5	21.4	43.1	7.2	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	79.6	21.9	44.9	8.3	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	78.3	22.8	44.3	8.0	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	70.4	21.4	43.9	8.3	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	71.8	22.0	42.8	7.9	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	71.1	21.7	43.7	7.5	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	79.4	23.0	44.5	8.3	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.23: AMBIENT AIR QUALITY DATA LOCATION AAQ6

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	69.4	21.3	43.6	7.6	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	69.8	22.6	44.8	7.1	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	69.1	21.8	42.5	8.2	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	69.0	23.0	43.6	8.8	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	69.7	22.7	45.0	9.0	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	68.6	21.3	44.9	8.4	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	69.0	21.9	44.1	7.6	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	61.6	21.7	43.6	7.1	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	69.9	22.9	42.8	8.0	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	69.0	22.1	44.6	8.8	18.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	69.4	21.4	45.0	7.4	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	68.4	21.8	43.6	7.7	19.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	60.5	22.6	42.8	8.5	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	61.4	22.8	44.6	9.0	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	69.3	21.7	43.7	8.6	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	68.4	21.0	42.1	8.1	18.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	60.3	22.6	44.0	7.4	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	61.8	21.7	43.8	7.2	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	68.4	21.1	43.2	7.7	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	69.3	22.3	42.3	8.0	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	60.7	22.6	43.6	9.5	18.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	61.4	23.2	46.7	7.6	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	62.0	21.4	43.2	7.2	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	69.8	21.9	42.9	7.7	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	69.3	22.5	43.5	8.4	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	69.8	21.4	44.9	9.0	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.24: AMBIENT AIR QUALITY DATA LOCATION AAQ7

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	69.4	21.8	43.7	7.6	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	68.8	22.6	45.0	8.1	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	68.0	22.1	44.8	8.8	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	68.8	21.4	42.1	7.4	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	68.1	23.0	42.7	7.0	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	69.6	21.9	44.1	8.6	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	69.7	22.3	43.7	8.9	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	68.4	22.7	42.0	7.4	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	68.1	21.0	44.8	7.8	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	67.8	21.6	43.6	8.0	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	57.6	22.8	42.7	8.5	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	67.7	23.0	43.6	9.0	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	67.5	21.3	44.9	7.6	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	68.4	22.1	45.0	7.2	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	68.3	22.8	42.6	8.4	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	69.7	21.6	43.7	8.9	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	69.3	21.3	44.9	8.1	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	69.6	22.8	44.1	7.6	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	68.7	22.4	43.6	7.8	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	68.0	22.1	42.7	8.0	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	68.5	23.0	42.2	8.6	22.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	69.4	21.6	43.6	8.1	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	68.7	22.8	44.8	7.6	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	69.5	21.4	45.0	7.2	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	68.3	21.1	44.2	7.0	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	69.7	22.5	42.6	8.2	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.25: AMBIENT AIR QUALITY DATA LOCATION AAQ8

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	60	100	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	73.6	21.3	43.9	7.6	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	72.5	21.9	43.7	7.9	20.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	79.9	21.5	44.5	7.1	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	79.1	22.1	42.4	6.8	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	70.4	22.6	43.3	6.3	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	72.8	23.1	44.0	7.2	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	71.3	22.7	43.5	7.3	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	72.2	21.5	45.8	7.0	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	71.7	21.9	43.9	7.9	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	73.8	21.0	44.2	7.6	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	71.6	21.9	44.4	7.4	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	72.7	22.7	45.2	7.9	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	70.8	22.4	45.6	6.8	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	71.7	21.6	43.0	6.5	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	72.8	22.4	43.3	7.2	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	73.2	21.0	43.7	6.9	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	71.4	21.6	44.0	7.1	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	72.7	21.6	43.9	7.6	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	70.1	21.9	43.7	7.9	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	72.8	21.3	43.6	7.3	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	71.8	23.6	43.5	7.1	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	70.9	22.8	42.3	6.8	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	71.7	22.1	42.2	6.8	19.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	70.3	21.9	42.6	6.5	19.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	70.7	20.8	41.9	7.9	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	71.8	19.1	42.1	7.1	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

TABLE 3.26: SUMMARY OF AAQ – 1 to AAQ – 8

PM10	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	43.8	43.1	43.8	43.9	22.1	22.1	43.7	43.6
Minimum	42.0	41.1	42.1	42.1	42.1	42.1	42.0	41.9
Maximum	45.3	45.8	46.3	46.8	46.1	46.7	45.0	45.8
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PM2.5	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	22.1	20.7	22.1	22.2	22.1	22.1	22.1	21.9
Minimum	21.0	18.9	21.0	21.1	21.1	21.0	21.0	19.1
Maximum	23.5	22.2	23.9	23.9	23.6	23.2	23.0	23.6
NAAQ Norms	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
SO2	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	8.1	6.2	8.0	8.0	8.2	8.1	8.0	7.2
Minimum	7.1	5.2	7.1	7.1	7.1	7.1	7.0	6.3
Maximum	9.0	7.7	9.2	9.5	9.6	9.5	9.0	7.9
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
NO2	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	20.7	21.0	21.0	20.5	21.5	20.4	22.1	21.6
Minimum	18.4	19.2	18.6	18.3	18.6	18.1	19.5	19.1
Maximum	22.0	22.9	23.9	23.1	22.9	23.3	23.7	23.9
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

TABLE 3.27: ABSTRACT OF AMBIENT AIR QUALITY DATA

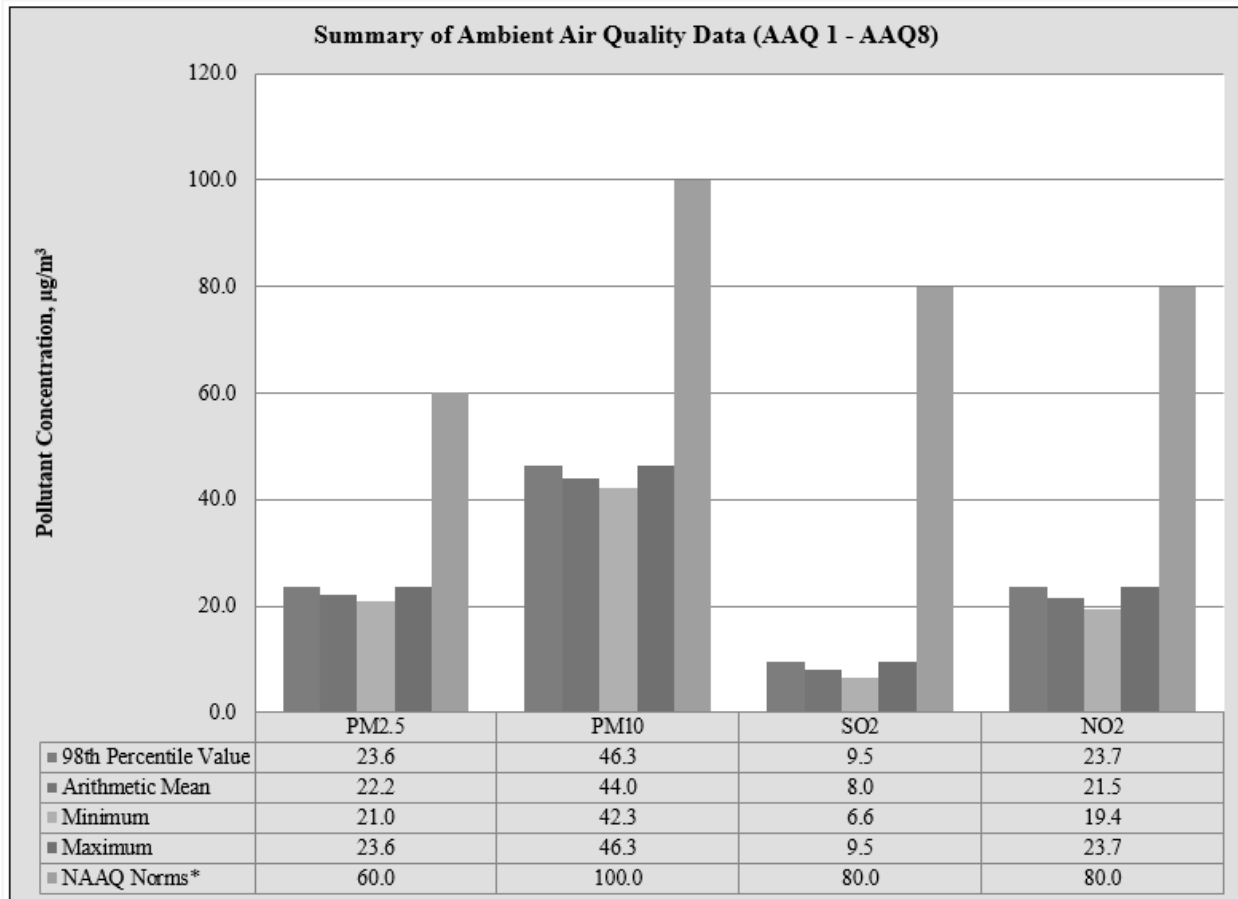
1	Parameter	PM10	PM2.5	SO ₂	NO ₂
2	No. of Observations	260	260	260	260
3	10 th Percentile Value	21.0	42.3	6.6	19.4
4	20 th Percentile Value	21.3	42.7	7.1	19.7
5	30 th Percentile Value	21.4	43.0	7.3	20.5
6	40 th Percentile Value	21.7	43.6	7.6	20.8
7	50 th Percentile Value	21.9	43.7	7.7	21.3
8	60 th Percentile Value	22.1	43.9	7.9	21.6
9	70 th Percentile Value	22.5	44.1	8.1	21.9
10	80 th Percentile Value	22.7	44.8	8.5	22.1
11	90 th Percentile Value	22.9	45.0	8.9	22.8
12	95 th Percentile Value	23.0	45.0	9.0	23.1
13	98 th Percentile Value	23.6	46.3	9.5	23.7
14	Arithmetic Mean	22.2	44.0	8.0	21.5
15	Geometric Mean	22.2	44.0	8.0	21.5
16	Standard Deviation	0.8	1.2	0.9	1.4
17	Minimum	21.0	42.3	6.6	19.4
18	Maximum	23.6	46.3	9.5	23.7
19	NAAQ Norms*	100.0	60.0	80.0	80.0
	% Values exceeding Norms*	0.0	0.0	0.0	0.0

Legend: PM_{2.5}-Particulate Matter size less than 2.5 µm; PM₁₀-Respirable Particulate Matter size less than 10 µm; SO₂-Sulphur dioxide; NO_x-Oxides of Nitrogen; CO-Carbon monoxide; O₃-Ozone; NH₃-Ammonia;

Pb-Particulate Lead; As-Particulate Arsenic; Ni-Particulate Nickel; C₆H₆-Benzene &BaP- Benzo (a) pyrene in particulate phase levels were monitored below their respective detectable limits

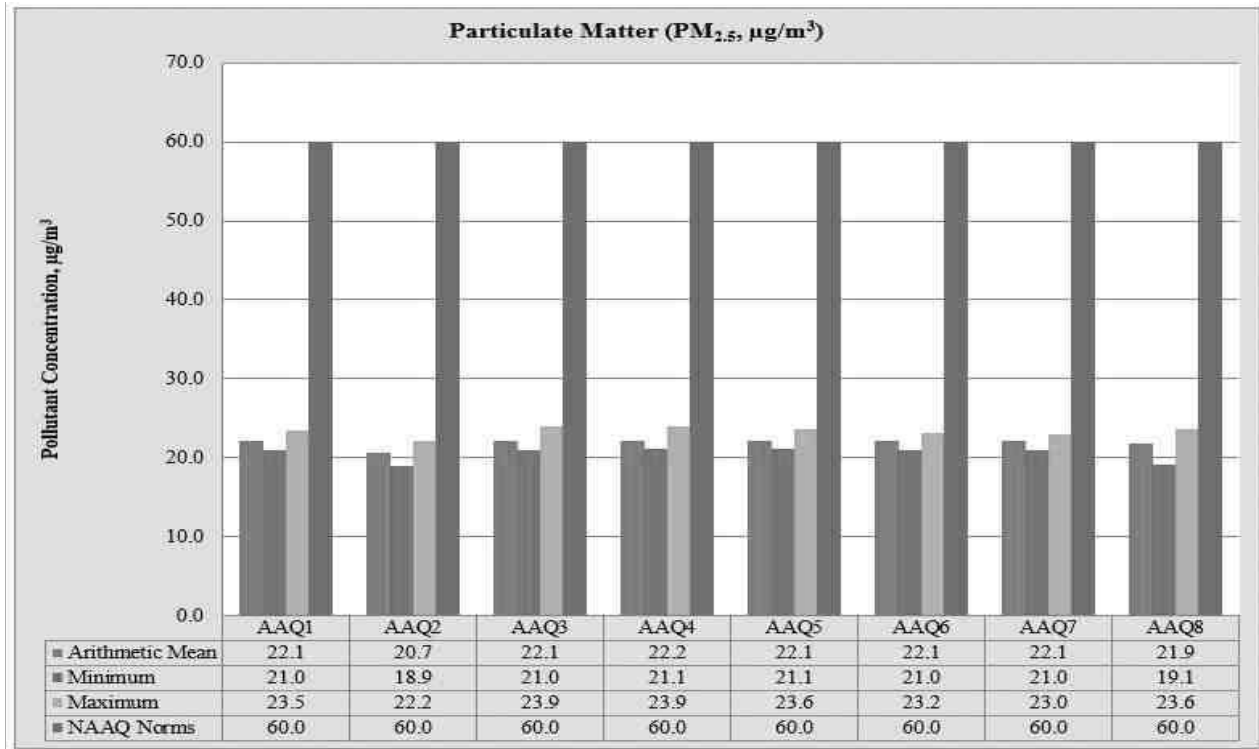
* NAAQ Norms-National Ambient Air Quality Norms-Revised as per GSR 826(E) dated 16.11.2009 for Industrial, Residential, Rural and other Areas.

FIGURE 3.16: BAR DIAGRAM OF SUMMARY OF AAQ 1 – AAQ 8



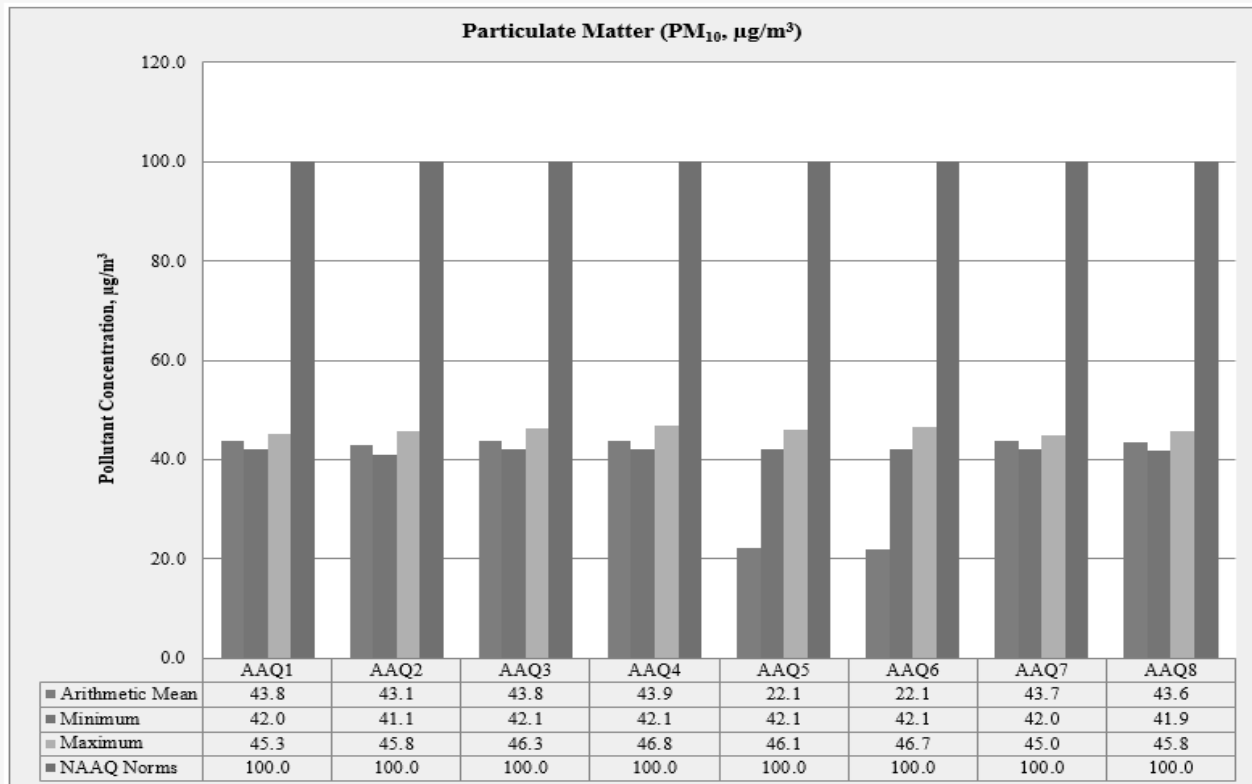
Source: Table 3.17 to 3.27

FIGURE 3.17: BAR DIAGRAM OF PARTICULATE MATTER PM_{2.5}



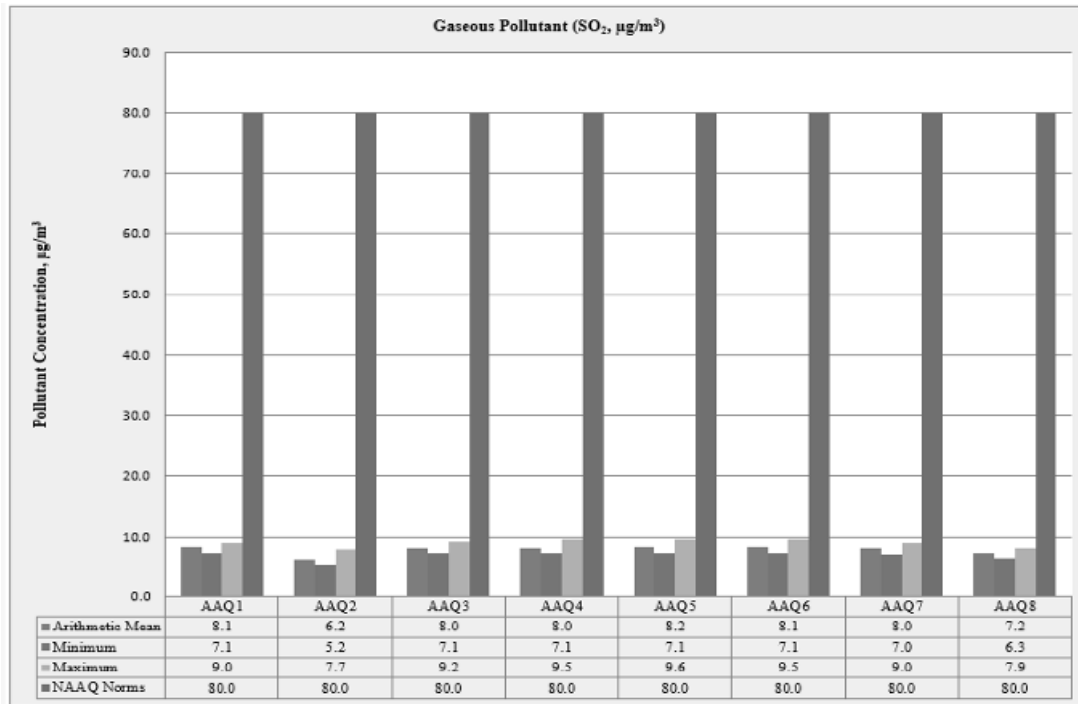
Source: Table 3.17 to 3.27

FIGURE 3.18: BAR DIAGRAM OF PARTICULATE MATTER PM₁₀



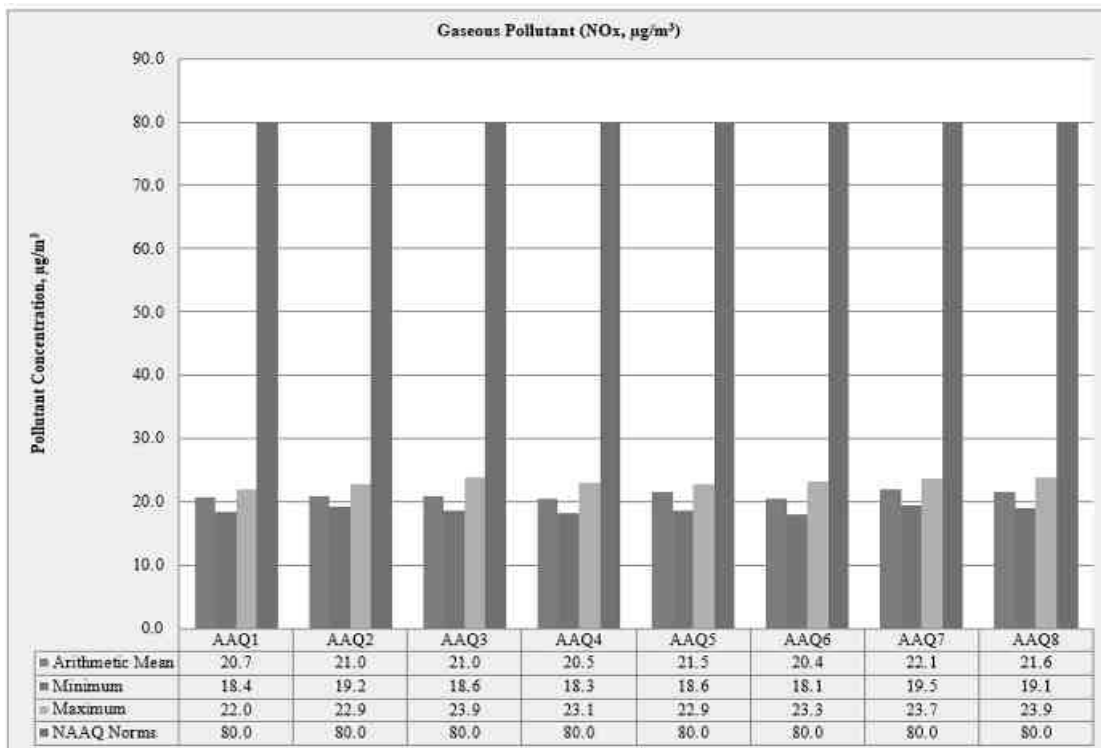
Source: Table 3.17 to 3.27

FIGURE 3.19: BAR DIAGRAM OF GASEOUS POLLUTANT SO₂



Source: Table 3.17 to 3.27

FIGURE 3.20: BAR DIAGRAM OF GASEOUS POLLUTANT NO_x



Source: Table 3.17 to 3.27

3.3.6 Interpretations & Conclusion

As per monitoring data, PM₁₀ ranges from 41.1 µg/m³ to 46.8 µg/m³, PM_{2.5} data ranges from 18.9 µg/m³ to 23.9 µg/m³, SO₂ ranges from 5.2µg/m³ to 9.6 µg/m³ and NO₂ data ranges from 18.1 µg/m³ to 23.9 µg/m³. The concentration levels of the above criteria pollutants were observed to be well within the limits of NAAQS prescribed by CPCB.

3.3.7 FUGITIVE DUST EMISSION –

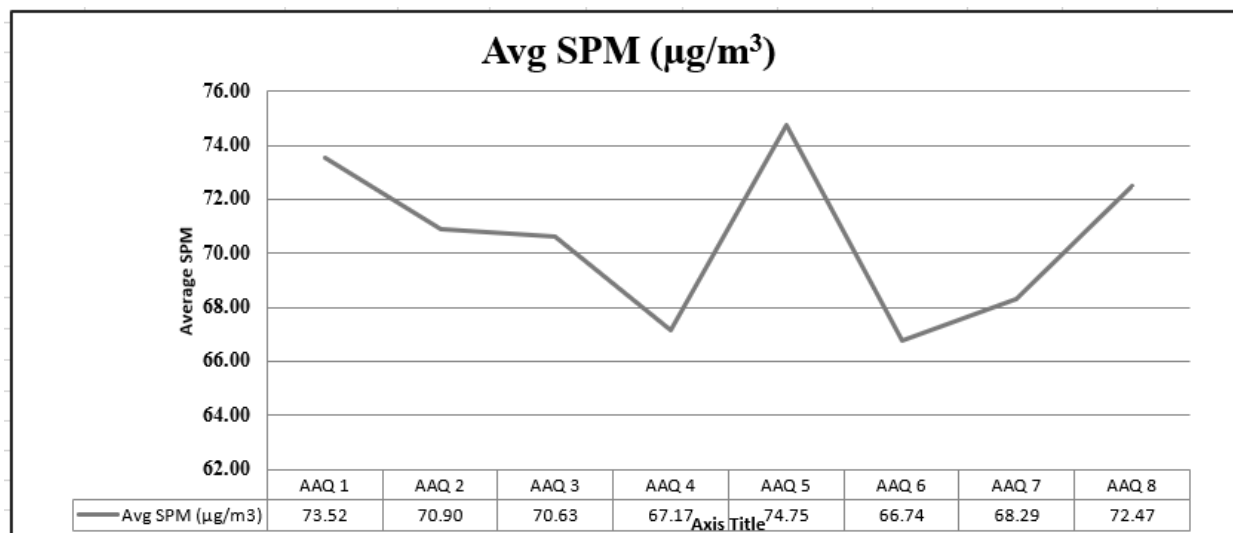
Fugitive dust was recorded at 8AAQ monitoring stations for 26 days average during the study period.

TABLE 3.28: AVERAGE FUGITIVE DUST SAMPLE VALUES

AAQ Locations	Avg SPM (µg/m ³)
AAQ 1	73.52
AAQ 2	70.90
AAQ 3	70.63
AAQ 4	67.17
AAQ 5	74.75
AAQ 6	66.74
AAQ7	68.29
AAQ8	72.47

Source: Onsite monitoring/ sampling by Chennai Metex Lab Private Limited

FIGURE 3.21: LINE DIAGRAM OF AVERAGE SPM VALUES

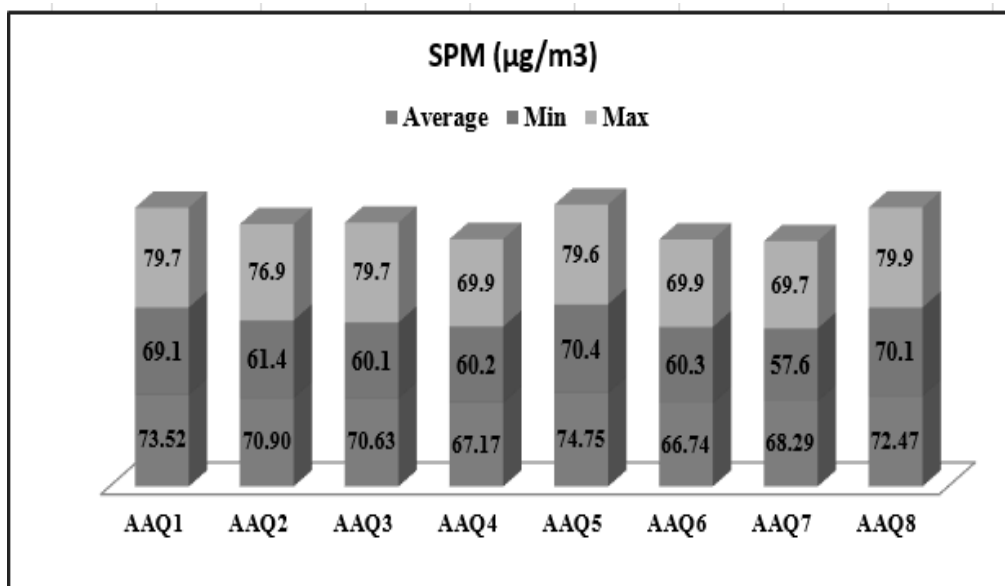


Source: Table 3.28

TABLE 3.29: FUGITIVE DUST SAMPLE VALUES IN µg/m³

SPM	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7	AAQ8
Arithmetic Mean	73.52	70.90	70.63	67.17	74.75	66.74	68.29	72.47
Minimum	69.1	61.4	60.1	60.2	70.4	60.3	57.6	70.1
Maximum	79.7	76.9	79.7	69.9	79.6	69.9	69.7	79.9
NAAQ Norms	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0

Source: Statistical analysis from Lab Data's

FIGURE 3.22: BAR DIAGRAM OF SPM VALUES

Source: Table 3.29

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 Eight (8) locations. 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 3.30: DETAILS OF SURFACE NOISE MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	N1	Core Zone	Project Area	10°48'57.76"N 77° 5'31.75"E
2	N2	Kurunallipalayam	1.2km SW	10°48'49.02"N 77° 4'47.85"E
3	N3	Periyakalandai	3.8km East	10°48'56.77"N 77° 7'44.70"E
4	N4	Kappalankarai	5.2km South	10°46'2.54"N 77° 5'50.05"E
5	N5	Arasampalayam	6km NW	10°50'32.92"N 77° 2'30.46"E
6	N6	Mettuvavi	4km NE	10°50'20.24"N 77° 7'12.27"E
7	N7	Jakkarpalayam	6.2km SE	10°47'22.56"N 77° 8'33.32"E
8	N8	Kothavadi	4.0km SW	10°48'32.00"N 77° 3'13.54"E

Source: On-site monitoring/sampling by Chennai Mettix Lab Private Limited in association with GEMS

3.4.2 Method of Monitoring

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

be obtained from variable sound pressure level, 'L', over a time period by using following equation. The equivalent noise level is defined mathematically as,

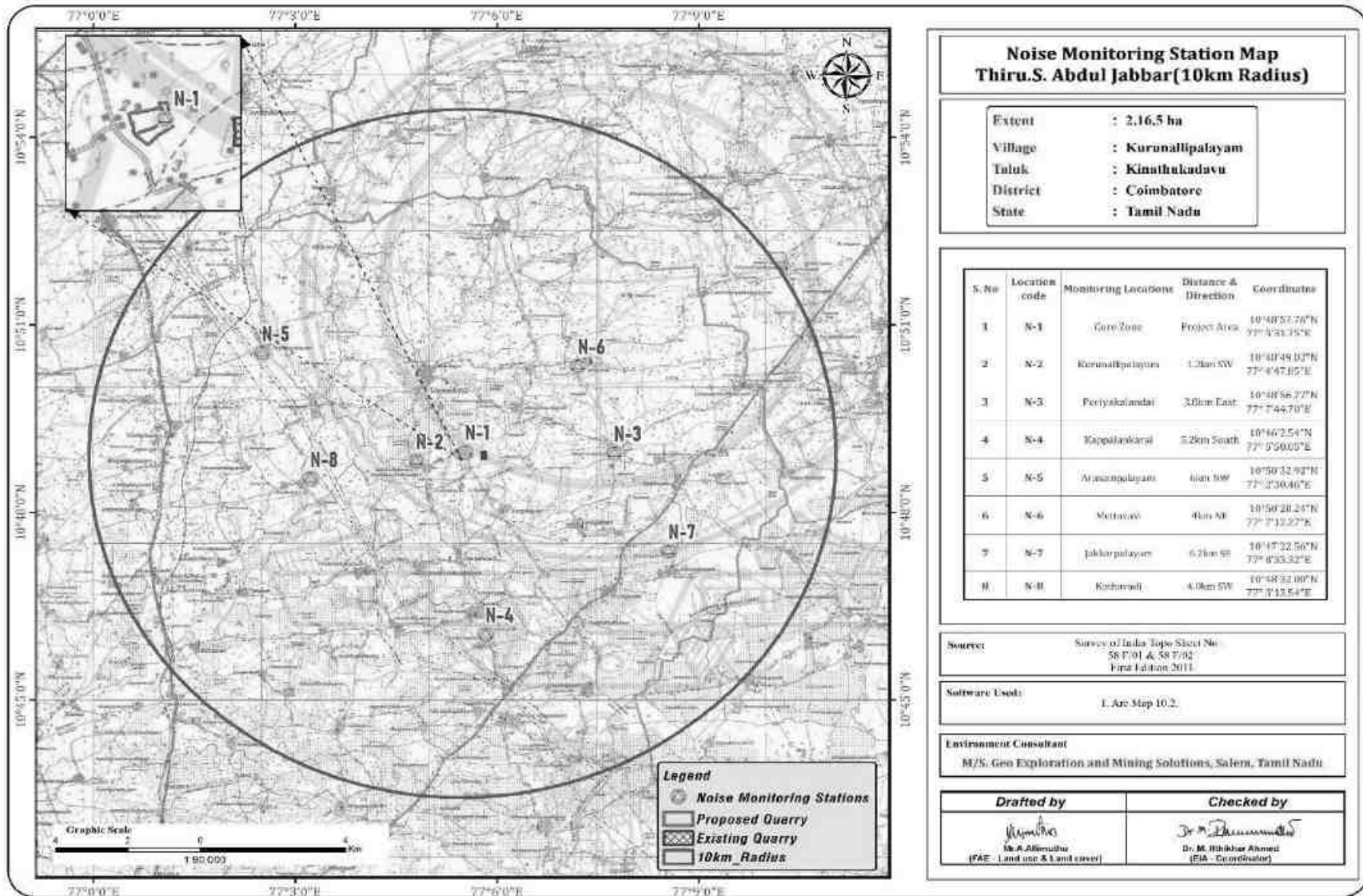
$$Leq = 10 \text{ Log } L / T \sum (10L_n/10)$$

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

T = Time interval of observation

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

FIGURE 3.23: NOISE MONITORING STATIONS AROUND 10 KM RADIUS



3.4.3 Analysis of Ambient Noise Level in the Study Area

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

An analysis of the different Leq data obtained during the study period has been made. Variation was noted during the day-time as well as night-time. The results are presented in below Table 3.31.

Day time: 6:00 hours to 22.00 hours.

Night time: 22:00 hours to 6.00 hours.

TABLE 3.31: AMBIENT NOISE QUALITY RESULT

S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
1	Core Zone	50.6	43.5	Industrial Day Time- 75 dB (A) Night Time- 70 dB (A)
2	Kurunallipalayam	50.3	42.5	
3	Periyakalandai	50.6	41.6	Residential Day Time- 55 dB (A) Night Time- 45 dB (A)
4	Kappalankarai	51.1	44.6	
5	Arasampalayam	50.6	42.1	
6	Mettuvavi	48.9	41.7	
7	Jakkarpalayam	51.1	43.0	
8	Kothavadi	50.6	44.5	

Source: On-site monitoring/sampling by Chennai Mettex Lab Private Limited in association with GEMS

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

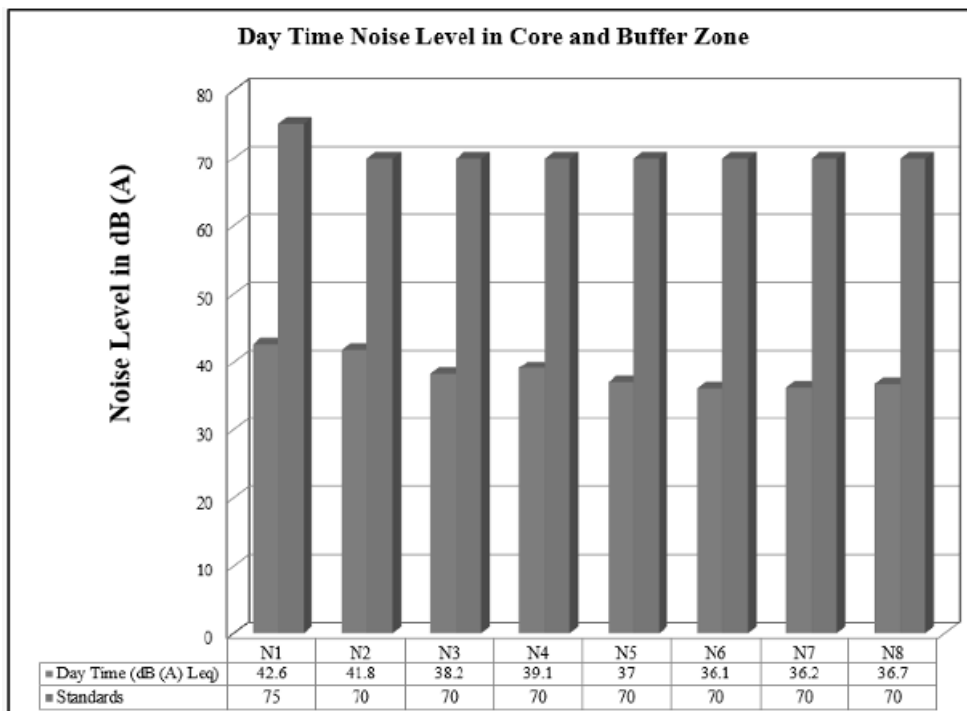
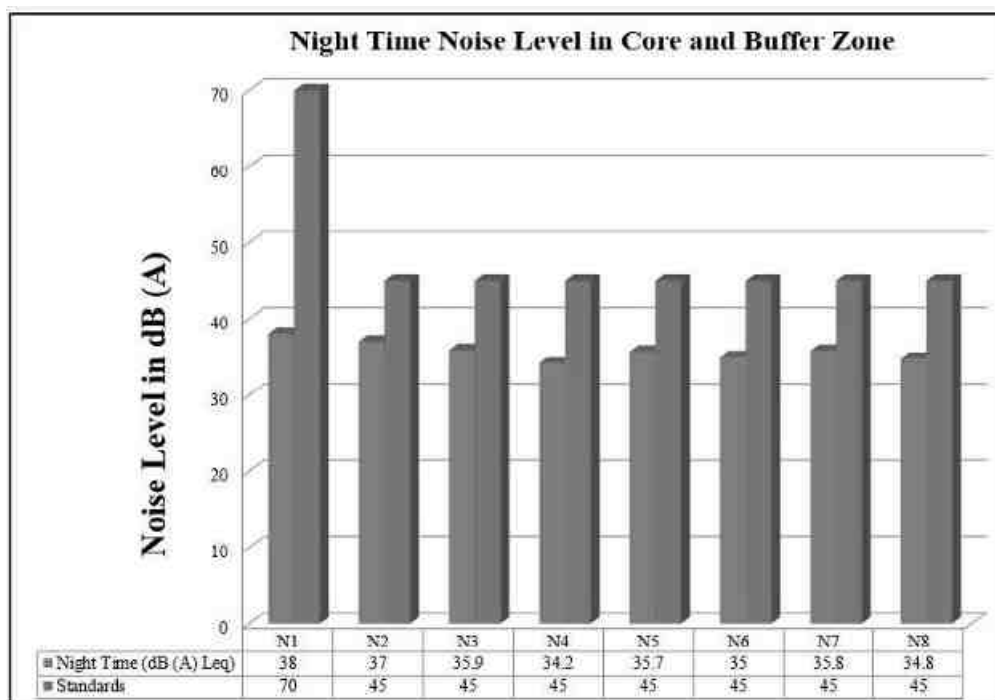


FIGURE 3.25: NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE

3.4.4 Interpretation & Conclusion:

Ambient noise levels were measured at 8 (Eight) locations around the proposed project area. Noise levels recorded in core zone during day time 42.6 dB (A) Leq and during night time were from 38 dB (A) Leq. Noise levels recorded in buffer zone during day time were from 36.1 to 41.8 dB (A) Leq and during night time were from 34.2 to 37 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 2.16.5 Ha of Rough stone and Gravel quarry has an impact on the diversity of flora and fauna of the surrounding area. But present work was carried out othe n detailed study of the impacts of Rough stone and Gravel quarry on the ecology and biodiversity of the core lease area with the proper mitigation and sustainable management plan. The proposed mine lease area exhibits plain topography. The following methods were applied during the baseline study of flora, fauna, and diversity assessment.

3.5.2. Objectives of Biological Studies

- To study the likely impact of the proposed mining project on the local biodiversity and to suggest mitigation measures, if required, for vulnerable biota.
- Undertake intensive field survey to assess the status of floral & faunal component in different habitats in the core and buffer areas of the project site.
- Identification and listing of flora and fauna which are important as per the Wildlife (Protection) Act 1972.
- 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.
- To identify the impacts of mining on agricultural lands and how it affects.
- Proper collection of information about wildlife Sanctuaries/ national parks/ biosphere reserves of the project area.
- 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 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).

a. Sampling

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

b. 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.

c. 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.

d. Observations from Sampling

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

e. 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

1. Transect walk – Birds

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

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. Visual Encounter Survey (VES) - reptiles and amphibians

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

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.

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 regular shape of dimensions 10 × 10 m, 5 × 5 m, and 1 × 1 m, were nested within each other and were defined as the units for sampling the area and measuring the diversity for trees, Shrubs and herbs respectively.

Table No: 3.32. Flora in the Core zone of Thiru S.Abdul Jabbar, Rough stone and gravel quarry

Sl.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Velvet mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
2.	Coconut	Thennai maram	<i>Cocos nucifera</i>	Arecaceae
3.	Gum arabic tree	Karuvelam	<i>Vachellia nilotica</i>	Fabaceae
4.	Neem or Indian lilac	Vembu maram	<i>Azadirachta indica</i>	Meliaceae
Shrubs				
5.	West Indian Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
6.	Avaram	Avarai	<i>Senna auriculata</i>	Fabaceae
7.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
8.	Indian Oleander	Arali	<i>Nerium indicum</i>	Apocynaceae
Herbs				
9.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
10.	Coat buttons	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
11.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
12.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae

13.	Indian nettle	Nayuruvi	<i>Achyranthes aspera</i>	Amaranthaceae
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3.5.5.1. Flora Composition in the Core Zone

Taxonomically a total of 13 species belonging to 10 families have been recorded from the core mining lease area. It is exhibit plain topography. Based on the habitat classification of the enumerated plants the majority of species were Herbs 8 followed by Shrubs 4, Trees 4. Details of flora with the scientific name were mentioned in Table No. 3.31. The result of the core zone of flora studies shows that Fabaceae and Lamiaceae, Apocynaceae are the main dominating species in the study area mentioned in Table No.3.32 No species found as threatened category.

Table No: 3.33. Flora in Buffer Zone Thiru S.Abdul Jabbar, Rough stone and gravel quarry

SI.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Velvet mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
2.	Neem or Indian lilac	Vembu	<i>Azadirachta indica</i>	Meliaceae
3.	Mango	Manga	<i>Mangifera indica</i>	Anacardiaceae
4.	Wild Tamarind	Savundal	<i>Leucaena latisiliqua</i>	Mimosaceae
5.	Coconut	Thennai maram	<i>Cocos nucifera</i>	Arecaceae
6.	Madras thorn	Kudukapuli	<i>Pithecellobium dulce</i>	Fabaceae
7.	River tamarind	Soundal maram	<i>Leucaena leucocephala</i>	Fabaceae
8.	Indian siris	Eayal vaagai	<i>Albizia lebbek</i>	Mimosaceae
9.	Monkey pod tree	Thungumoonchi	<i>Samanea saman</i>	Fabaceae
10.	Portia tree	Poovarasam	<i>Thespesia Populnea</i>	Malvaceae
11.	Jack fruit	Bala maram	<i>Artocarpusintegrifolia</i>	Moraceae
12.	Tree of heaven	Perumaram	<i>Ailanthus excelsa</i>	Simaroubaceae
13.	Velvet mesquite	Mullu maram	<i>Prosopis juliflora</i>	Fabaceae
14.	Yellow Flame	Vagai	<i>Peltophorum pterocarpum</i>	Caesalpiniaceae
15.	Lemon	Ezhumuchaipalam	<i>Citrus lemon</i>	Rutaceae
16.	Jamun Fruit Plant	Naval maram	<i>Syzygium cumini</i>	Myrtaceae
17.	Gum arabic tree	Karuvelam	<i>Vachellia nilotica</i>	Fabaceae
18.	Yellow oleander	Ponarali	<i>Cascabela thevetia</i>	Apocynaceae
19.	Rain Tree	Mazlharam	<i>Samanea saman</i>	Mimosaceae
20.	Chinese chaste tree	Nochi	<i>Vitex negundo</i>	Verbenaceae
21.	Asian Palmyra palm	Panai maram	<i>Borassus flabellifer</i>	Arecaceae
22.	Curry tree Plant	Karuveppilai	<i>Murraya koenigii</i>	Rutaceae
23.	Teak	Thekku	<i>Tectona grandis</i>	Verbenaceae
24.	Indian mulberry	Nuna maram	<i>Morinda tinctoria</i>	Rubiaceae
25.	Drumstick tree	Murunga maram	<i>Moringa oleifera</i>	Moringaceae
26.	Guava	Koyya	<i>Psidium guajava</i>	Myrtaceae
27.	Indian-almond	Inguti	<i>Terminalia catappa</i>	Combretaceae
28.	Eucalyptus	Thailam maram	<i>Eucalyptus tereticornis</i>	Myrtaceae
29.	Pongamia pinnata	Pongam	<i>Millettia pinnata</i>	Fabaceae
30.	Horsetail She-oak	Savukku maram	<i>Casuarina equisetifolia</i>	Casuarinaceae
31.	Henna	Marudaani	<i>Lawsonia inermis</i>	Lythraceae
32.	Indian gooseberry	Nelli	<i>Phyllanthus emblica</i>	Phyllanthaceae

33.	Peepal	Asoka maram	<i>Ficus religiosa</i>	legume
34.	Tamarind	Puliyamaram	<i>Tamarindus indica</i>	Legumes
35.	Malayan Cherry	Ten Pazham	<i>Muntingia calabura</i>	Muntingiaceae
36.	Jujube Trees	Elantha Pazham	<i>Ziziphus Mauritiana</i>	Rhamnaceae
37.	Papaya	Pappali maram	<i>Carica papaya L</i>	Caricaceae
38.	Java olive tree	Kutiraiippitukku	<i>Sterculia foetida</i>	Malvaceae
39.	Banana tree	Vazhaimaram	<i>Musa acuminata</i>	Musaceae
40.	Amati	Agathi keerai	<i>Sesbania grandiflora</i>	Fabaceae
41.	Custard apple	Seethapazham	<i>Annona reticulata</i>	Annonaceae
42.	Manilkara zapota	Sapota	<i>Manilkara zapota</i>	Sapotaceae
43.	Indian-almond	Badam	<i>Terminalia catappa</i>	Combretaceae
44.	Banyan tree	Alamaram	<i>Ficus benghalensis</i>	Moraceae
45.	Jack fruit	Palamaram	<i>Artocarpus heterophyllus</i>	Moraceae
Shrubs				
1.	Giant reed	Mudaampul	<i>Arundo donax</i>	Poaceae
2.	Devil's trumpet	Umathai	<i>Datura metel</i>	Solanaceae
3.	Avaram	Avarai	<i>Senna auriculata</i>	Fabaceae
4.	Water-hyacinth	Agayathamara	<i>Eichhornia crassipes</i>	Pontederiaceae
5.	Kangkong	Sarkaravalli	<i>Ipomeae aquatica</i>	Convolvulaceae
6.	Castor bean	Amanakku	<i>Ricinus communis</i>	Euphorbiaceae
7.	Green amaranth	Kuppaikerai	<i>Amaranthus vividis</i>	Amaranthaceae
8.	Jungle geranium	Idly Poo	<i>Ixora coccinea</i>	Rubiaceae
9.	Shoe flower	Chemparuthi	<i>Hibiscu rosa-sinensis</i>	Malvaceae
10.	Milk Weed	Erukku	<i>Calotropis gigantea</i>	Apocynaceae
11.	Rough cocklebur	Marlumuttu	<i>Xanthium indicum</i>	Asteraceae
12.	Mexican prickly poppy	Bramathndu	<i>Argemone mexicana</i>	Papaveraceae
13.	Puriging nut	Kattamanakku	<i>Jatropha curcas</i>	Euphorbiaceae
14.	Malabar catmint	Pei veratti	<i>Anisomeles malabarica</i>	Lamiaceae
15.	Dwarf Heliotrope	Theelkoduku	<i>Heliotropium supinum</i>	Boraginaceae
16.	Touch-me-not	Thottalchinungi	<i>Mimosa pudica</i>	Mimosaceae
17.	Indian mallow	Thuthi	<i>Abutilon indicum</i>	Meliaceae
18.	Night shade plan	Sundaika	<i>Solanum torvum</i>	Solanaceae
19.	Rosary pea	Kundumani	<i>Abrus precatorius</i>	Fabaceae
20.	Indian Oleander	Arali	<i>Nerium indicum</i>	Apocynaceae
21.	West Indian Lantana	Unni chedi	<i>Lantana camara</i>	Verbenaceae
22.	Rough cocklebur	Marlumuttu	<i>Xanthium indicum</i>	Asteraceae
Herbs				

1.	Carrot grass	Parttiniyam	<i>Parthenium hysterophorus</i>	Asteraceae
2.	Sessile Joyweed	Ponnankanni	<i>Alternanthera sessilis</i>	Amaranthaceae
3.	Billygoat weed	Pumpillu	<i>Ageratum conyzoides</i>	Asteraceae
4.	Aloe barbadensis	Katrazhai	<i>Aloe vera</i>	Asphodelaceae
5.	Madagascar Periwinkle	Nithyakalyani	<i>Catharanthus roseus</i>	Apocynaceae
6.	Indian Mercury	Kuppamani	<i>Acalypha indica</i>	Euphorbiaceae
7.	Indian nettle	Nayuruvi	<i>Achyranthes aspera</i>	Amaranthaceae
8.	Chloris barbata	Kodai pul	<i>Chloris barbata</i>	Poaceae
9.	Bui	Ciru-pulai	<i>Aervalanata</i>	Amaranthaceae
10.	Indian doab	Arugampul	<i>Cynodon dactylon</i>	Poaceae
11.	Datura metel	Oomathai	<i>Datura metel</i>	Solanaceae
12.	Yellow elder	Manjarali	<i>Tecoma stans</i>	Apocynaceae
13.	Cleome viscosa	Nai kadugu	<i>Celome viscosa</i>	Capparidaceae
14.	Common leucas	Thumbai	<i>Leucas aspera</i>	Lamiaceae
15.	Fish poison	Kollukaivelai	<i>Tephrosia purpureae</i>	Papilionaceae
16.	Asthma-plant	Amman pacharisi	<i>Euphorbia hirta</i>	Euphorbiaceae
17.	Holy basil	Thulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
18.	Peanut	Kadalai	<i>Arachis hypogaea</i>	Fabaceae
19.	Red Hogweed	Mukurattai	<i>Boerhavia diffusa</i>	Nyctaginaceae
20.	Tridax daisy	Thatha poo	<i>Tridax procumbens</i>	Asteraceae
21.	Gale of the wind	Keelaneeli	<i>Phyllanthus niruri</i>	Phyllanthaceae
22.	Eggplant	kathirikai	<i>Solanum melongena</i>	Solanaceae
23.	European black nightshade	Manathakkali	<i>Solanumnigrum</i>	Solanaceae
Climber				
1.	Ivy gourd	Kovai	<i>Coccinia grandis</i>	Cucurbitaceae
2.	Cucumis maderaspatanus	Musumusukkai	<i>Mukia maderaspatana</i>	Cucurbitaceae
3.	Butterfly pea	Sangu poo	<i>Clitoria ternatea</i>	Fabaceae
4.	Wild water lemon	Siruponaikaali	<i>Passiflora foetida</i>	Passifloraceae
5.	Stemmed vine	Perandai	<i>Cissus quadrangularis</i>	Vitaceae
6.	Bottle Guard	Sorakkai	<i>Lagenaria siceraria</i>	Cucurbitaceae
Creeper				
1.	Nut grass	Korai	<i>Cyperus rotandus</i>	Poaceae
Grass				
1.	Eragrostis	Pullu	<i>Eragrostis ferruginea</i>	Poaceae
2.	Windmill grass	Chevvarakupul	<i>Chloris barbata</i>	Amaranthaceae

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

3.5.5.2. Flora Composition in the Buffer Zone

The buffer region has a similar type of habitat, but it has a wider variety of vegetation than the core zone area. The proposed lease area has plain terrain. There are 99 different species identified in the buffer zone. Among the identified, floral (99) species were 45 trees, 23 herbs, 22 shrubs, 6 climbers, 1 creeper, and grasses 2. According to the findings of the buffer zone flora studies, the dominant species in the study area are Fabaceae, Poaceae, and Mimosaceae, as shown in Table No.3.32. 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. Details of flora with the scientific name were mentioned in Table No.3.33.



a. *Syzygium cumini*



b. *Azadirachta indica*



c. *Leucaena leucocephala*



d. *Ricinus communis*



e. *Tectona grandis*



f. *Carica papaya L*



g. *Moringa oleifera*



h. *Millettia pinnata*



i. *Parthenium hysterophorus*



j.Cocos nucifera



k.Thespesia Populnea



l.Terminalia catappa



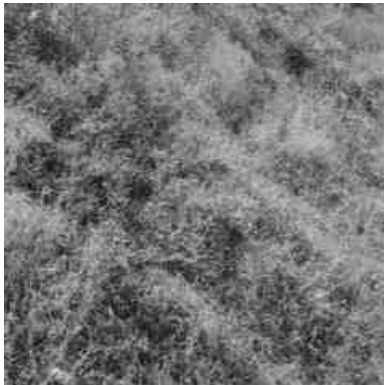
m.Eucalyptus tereticornis



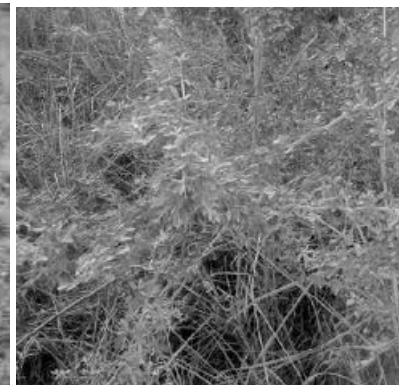
n.Tecoma stans



o.Arundo donax



p.Cynodon dactylon



q.Pithecellobium dulce



r.Lantana camara



s.Tamarindus indica



t.Casuarina equisetifolia



u. Calotropis gigantea

v. *Abutilon indicum*w. *Prosopis juliflora*x. *Tridax procumbens***Fig.No: 3.26. Flora species observation in the core & Buffer zone area**

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

There are neither reserved (RF) nor protected (PF) forests either in the mine lease area or in the buffer zone. Thus, no forest land is involved in any manner. Hence, no certificate from the Forest department is required. There are no protected or ecologically sensitive areas such as National parks or Important Bird Areas (IBAs), or Wetlands or migratory routes of fauna or water bodies or human settlements within the proposed mine lease area. There are no Biosphere reserves or wildlife sanctuaries or National parks or Important Bird Areas (IBAs), or migratory routes of fauna. Thus, the area under study (Mine lease area and the 10 Km buffer zone) is not ecologically sensitive. It is away from the proposed project site.

Thus, no forest land is involved in any manner. Hence, no certificate from the Forest department is required. There are no impacts due to this mining activity. There are 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.

3.5.6 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.

3.5.6.1. Fauna Composition in the Core Zone

Core Zone: During the study, it was found that the faunal diversity in the core site was limited to Butterflies, insects, and some species of mammals & reptiles among them numbers Insects 6, Reptiles 3, Mammals 3, and Avian 6. The core site has avifauna species like crow, Black drongo, Koel, etc. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and nine species are under schedule IV according to the Indian wildlife Act 1972. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

Table No: 3.34. Fauna in the Core zone of Thiru S.Abdul Jabbar, Rough stone and gravel quarry

Sl. No	Common Name	Scientific Name	Schedule list WLPC 1972
Insects			
1.	Tawny coster	<i>Danaus chrysippus</i>	Schedule IV
2.	Striped tiger	<i>Danaus plexippus</i>	Schedule IV
3.	House fly	<i>Musca domestica</i>	-
4.	Dragonfly	<i>Agriansp</i>	-
5.	Common Tiger	<i>Danaus genutia</i>	NL
6.	Termite	<i>Hamitermes silvestri</i>	NE
Reptiles			
1.	Oriental garden lizard	<i>Calotes versicolor</i>	NL
2.	Indian forest skink	<i>Sphenomorphus indicus</i>	NL
3.	House lizards	<i>Hemidactylus flaviviridis</i>	Schedule IV
Mammals			
1.	Indian Field Mouse	<i>Mus booduga</i>	Schedule IV
2.	Asian Small Mongoose	<i>Herpestes javanicus</i>	Schedule (Part II)
3.	Squirrel	<i>Funambulus palmarum</i>	Schedule IV
Aves			
1.	Rose-ringed parkeet	<i>Psittacula krameri</i>	Schedule IV
2.	Common myna	<i>Acridotheres tristis</i>	NL
3.	Koel	<i>Eudynamys</i>	Schedule IV
4.	Black drongo	<i>Dicrurus macrocercus</i>	Schedule IV
5.	House crow	<i>Corvussplendens</i>	NL

*NL- Not listed, LC- Least Concern

(Sources: Species observation in the field study)

3.5.6.2. Fauna Composition in the Buffer Zone

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

There are no Sanctuaries, National Parks, Tiger Reserve or Biosphere reserves or Elephant Corridor or other protected areas within 10 km radius of from the core area. It is evident from the available records, reports, and circumstantial evidence that the entire study area including the core and buffer areas were free from any endangered animals. There were no resident birds other than common bird species such as Cattle egret, Asian Koel, House crow, Black drangos, Crows, Rose-ringed Parakeet etc.

The list of bird species recorded during the field survey and literature from the study area are given in Table 3.35. The list of reptilian species recorded during the field survey and literature from the study area is given in Table 3.36. The list of insect species recorded during the field survey and literature from the study area are given in Table 3.37. The list of Butterflies species recorded during the field survey and literature from the study area are given in Table 3.38. It is apparent from the list that none of the species either spotted or reported is included in Schedule I of the Wildlife Protection Act. Similarly, none of them comes under the REET category.

Taxonomically a total of 55 species recorded were from the buffer zone area. Based on habitat classification the majority of species were Insect 5, followed by birds 23, Reptiles 8, Mammals 5, Amphibians 3, and Butterflies 11. There are five Schedule II species, and thirty-two species are under schedule IV according to the Indian wildlife Act 1972. A total of 23 species of bird were sighted in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed. There are no impacts on nearby fauna species.

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

**Table 3.35. List of Fauna & Their Conservation Status,
Mammals: (*directly sighted animals & Secondary data)**

SI. No	Common Name	Scientific Name	Schedule list WLPA 1972
1.	Brown rat	<i>Rattus norvegicus</i>	Schedule IV
2.	Indian palm squirrel	<i>Funambulus palmarum</i>	Schedule IV
3.	Asian Small Mongoose	<i>Herpestes javanicus</i>	Schedule (Part II)
4.	Indian hare	<i>Lepus nigricollis</i>	Schedule (Part II)
5.	Indian Field Mouse	<i>Mus booduga</i>	Schedule IV

Status assigned by the IUCN, where – CR – Critically Endangered; EN – Endangered; LC – Least Concern; NT – Near Threatened; VU – Vulnerable, DA – Data Deficient, NE – Not Evaluated

Table 3.36. Listed birds

SI. No	Common Name	Scientific Name	Schedule list WLP 1972
1.	Rose-ringed Parakeet	<i>Psittaculakrameria</i>	Schedule IV
2.	Little grebe	<i>Tachybaptusruficollis</i>	Schedule IV
3.	Large cormorant	<i>Phalacrocorax carbo</i>	Schedule IV
4.	Grey heron	<i>Ardeacineria</i>	Schedule IV
5.	Cattle egret	<i>Bubulcus ibis</i>	Schedule IV
6.	Indian roller	<i>Coracias benghalensis</i>	Schedule IV
7.	Night heron	<i>Nicticoraxncticorax</i>	Schedule IV
8.	Large egret	<i>Casmerodiusalbus</i>	Schedule IV
9.	Coot	<i>Fulicaatra</i>	Schedule IV
10.	Red-necked halarope	<i>Phalaropuslobatus</i>	Schedule IV
11.	Yellow wagtail	<i>Motacilla flava</i>	Schedule IV
12.	Spotted dove	<i>Streptopeliachinensis</i>	Schedule IV
13.	Shikra	<i>Accipiter badius</i>	Schedule IV
14.	Asian koel	<i>Eudynamysscolopacea</i>	Schedule IV
15.	Small-blue kingfisher	<i>Alcedoatthis</i>	Schedule IV
16.	White-breasted kingfisher	<i>Halcyon smyrnensis</i>	Schedule IV
17.	Blue-rock pigeon	<i>Colombalivia</i>	Schedule IV
18.	Golden-backed wood Pecker	<i>Dinopiumbenghalensis</i>	Schedule IV
19.	House crow	<i>Corvussplendens</i>	Schedule IV
20.	Jungle crow	<i>Corvusmacrorhynchos</i>	Schedule IV
21.	Robin	<i>Copsychussaularis</i>	Schedule IV
22.	Pond heron	<i>Ardeolagravii</i>	Schedule IV
23.	Orange-headed thrush	<i>Zoothera citrine</i>	Schedule IV

*Status assigned by the IUCN, where – CR – Critically Endangered; EN – Endangered; LC – Least Concern; NT – Near Threatened; VU – Vulnerable, DA – Data Deficient, NE – Not Evaluated

Table 3.37. List of Reptiles either spotted or reported from the study area.

SI. No	Common Name	Scientific Name	Schedule list WLPA 1972
1.	Oriental garden lizard	<i>Calotes versicolor</i>	NL
2.	Common krait	<i>Bungarus caeruleus</i>	Schedule IV
3.	House lizards	<i>Hemidactylus flaviviridis</i>	Schedule IV
4.	Indian cobra	<i>Naja naja</i>	Sch II (Part II)
5.	Green vine snake	<i>Ahaetulla nasuta</i>	Schedule IV
6.	Russell's viper	<i>Vipera russseli</i>	Sch II (Part II)
7.	Rat snake	<i>Ptyas mucosa</i>	Sch IV (Part II)
8.	Common skink	<i>Mabuya carinatus</i>	NL

(*indicates direct observations & Secondary data)

Table 3.38. List of insects either spotted or reported from the study area

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

Table.3.39. List of Butterflies reported from the study area

SI. No	Common Name	Scientific Name	Schedule
1.	Crimson tip	<i>Colotisdanae</i>	-
2.	Common Tiger	<i>Danaus genutia</i>	-
3.	Milkweed butterfly	<i>Danainae</i>	-
4.	Striped tiger	<i>Danaus plexippus</i>	-
5.	Common emigrant	<i>Catopsiliapomona</i>	-
6.	Common Indian crow	<i>Euploea core</i>	-
7.	Indian palm bob	<i>Suastusgremius</i>	-
8.	Common rose	<i>Pachlioptaaristolochiaee</i>	-
9.	Great orange tip	<i>Hebomoia glaucippe</i>	-
10.	Common jay	<i>Graphium doson</i>	-
11.	Spotless grass yellow	<i>Euremalaeta</i>	-

Table 3.40. List of Amphibians either spotted or reported from the study area

SI. No	Common Name	Scientific Name	Schedule list WLPC 1972
1.	Indian Burrowing frog	<i>Sphaerotheca breviceps</i>	Schedule IV
2.	Green pond frog	<i>Euphlyctis hexadactylus</i>	Schedule IV
3.	Indian Toad	<i>Bufo melanostictus</i>	Schedule IV

*Status assigned by the IUCN, where – CR – Critically Endangered; EN – Endangered; LC – Least Concern; NT – Near Threatened; VU – Vulnerable, DA – Data Deficient, NE – Not Evaluated

3.5.6.3. Findings/Results

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

Records of threatened species in the area

No threatened species were observed

Endangered Species as per Wildlife (Protection) Act

No Endangered fauna was recorded in the project area.

Endemic Species of the Project areas

No endemic species were observed in the project area.

Migratory species of the Project areas

No migratory fauna observed in project area.

Migratory corridors and Flight paths

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

Breeding and spawning grounds

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

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 no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar sites, Tiger/Elephant Reserves/(existing as well as proposed) within 10 km of the mine lease area. There are no protected forests within the project area. Hence submission of clearance from the National Board of Wildlife does not arise.

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

3.5.7 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

The major developmental activities in mining /Industrial sector are required for economic development as well as creation of employment opportunities (direct and indirect) and to meet the basic/modern needs of the society, which ultimately results in overall improvement of the quality of life through upliftment of social, economic, health, education and nutritional status in the project region, state as well as the country. In this manner all developmental projects have direct as well as indirect relationships with socioeconomic aspects, which also include public acceptability for new developmental projects. Thus, the study of socioeconomic component incorporating various facets related to prevailing social and cultural conditions and economic status of the Roughstone and Gravel quarry project region is an important part of EIA study. The study of these parameters helps in identification, prediction and evaluation of the likely impacts on the socio economics and parameters of human interest due to the project.

3.6.1 Objectives of the Study

The objectives of the socio-economic impact assessment are as follows:

- a) To study the socio-economic status of the people living in the study area of the project.
- b) To identify the basic needs of the nearby villages within the study area.
- c) To assess the impact on socio-economic environment due to the project.
- d) To provide the employment and improved living standards.
- e) To study the socio-economic status of the people living in the study area Roughstone and Gravel quarry project region
- f) To assess the impact on socio-economic environment due to Roughstone and Gravel quarry project region
- g) To analysis of impact of socio economic and Environmental Infrastructure facilities and road accessibility.

3.6.2 Scope of Work

- To study the Socio-economic Environment of area from the secondary sources
- Data Collection and Analysis
- Identification of impacts due to the mining projects
- Mitigation Measures

3.6.3 Methodology

The methodology adopted for the socio-economic impact assessment is as follows:

- a) The details of the activities and population structure have been obtained from Census 2001 and 2011 and analyzed.
- b) Based on the above data, impacts due to plant operation on the community have been assessed and recommendations for further improvement have been made.

3.6.4 Sources of Information and Data Base

To achieve the above objectives, the information has been collected from both primary and secondary sources. Both primary data and secondary data have been analyzed by means of suitable statistical techniques for the purpose of verifying the above selected hypotheses concerned with the surrounding area.

3.6.5 Primary Survey

The primary data collection includes the collection of data through a structured interview schedule by direct observation method. The questionnaire survey includes both open and closed methods. The sample size is limited respondents, who were selected on the basis of simple random sampling from Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State, in the field survey has been divided into three major segments namely Primary Zone (0 - 3 km), Secondary Zone (3 - 7 km) and tertiary Zone (7 - 10 km).

The questionnaires were designed to suit the subjects considering their rural background enabling to furnish correct information and data as far as possible. Data were collected at village level and household level by questionnaires and focused group discussions.

The study area for the field survey has been divided into three major segments namely Primary Zone (0 - 3 km), Secondary Zone (3 - 7 km) and Outer Zone (7 - 10 km).

3.6.6 Collection of Data from Secondary Sources

Data from secondary sources were collected on following aspects:

- Demographic profile of the area
- Economic profile of the area

Table 3.6.1 Type of Information and Sources

Information	Source
Demography	District Census Handbook, Govt. of India
Economic profile of the area	Census of India, Tamil Nadu State

b) Data Presentation and Analysis

The data collected were presented in a suitable, concise form i.e., tabular or diagrammatic or graphic form for further analysis. These tabulated data were interpreted and analyzed with the help of various qualitative techniques and ideographic approaches.

3.7 Background Information of the Area

Tamil Nadu is the 11th largest states in India in terms of area. The state is the seventh most populous state in the country and its main language Tamil has origins that date back to 500 BC. Chennai is the capital of Tamil Nadu and lies on the eastern coast line of India. Tamil Nadu is famous for its wonderful temples and monuments that have been built 1000s of years ago and has places that have been marked as heritage sites by the United Nations. In a 180 degree paradigm shift, this state with a rich historical importance is also one of the fastest developing centre for technology and trade.

The State can be divided broadly into two natural divisions (a) the Coastal plains of South India and (b) the hilly western area. Parallel to the coast and gradually rising from it is the broad strip of plain country. It can further be subdivided into coromandal plains comprising the districts of Kancheepuram, Coimbatore, Cuddalore and Vellore. The alluvial plains of the Cauvery Delta extending over Thanjavur and part of Tiruchirapally districts and dry southern plains in Madurai, Dindigul, Ramanathapuram, Sivaganga, Virudhnagar, Tirunelveli and Tuticorin districts. It extends a little beyond Western Ghats in Kanyakumari District. The Cauvery Delta presents some extremely distinctive physical and human

features, its power being a main factor in the remarkable growth, the towns of Tamilnadu have witnessed.

3.8 Geography of the Area

Tamil Nadu is one of the 28 states of India, located in the southernmost part of the country. It extends from 8°4'N to 13°35'N latitudes and from 76°18'E to 80°20'E longitudes. Its extremities are

- in eastern - Point Calimere
- in western - hills of Anaimalai
- in northern - Pulicat lake
- in southern - Cape Comorin

It covers an area of 1,30,058 sq.km and 11th largest state in India. It covers 4% of the area of our country. Tamil Nadu is bounded by the Bay of Bengal in the east, Kerala in the west, Andhra Pradesh in the north, Tamil Nadu in the northwest and Indian Ocean in the south. Gulf of Mannar and Palk Strait separate Tamil Nadu from the Island of Sri Lanka, which lies to the southeast of India.

Already we have learnt that the state of Tamil Nadu had only 13 districts at the time of its formation. After that, the state was reorganised several times for the administrative convenience. At present there are 37 districts in Tamil Nadu, including the newly created districts such as Kallakurichi, Tenkasi, Chengalpet, Ranipet and Tirupathur.

3.9 Population Growth Rate

In 1991, there were only 21 districts in the State of Tamil Nadu. In 2001, eight new districts were created by reorganising the territorial jurisdiction. The nine districts are – Coimbatore, Namakkal, Coimbatore, Perambalur, Viluppuram, Thiruvarur, Nagapattinam, and Theni. The population and its growth trend are important economic factors in a developing economy.

Year	Tamil Nadu	India
1941	11.91	14.22
1951	14.66	13.31
1961	11.85	21.51
1971	22.30	24.80
1981	17.50	24.66
1991	15.39	23.86
2001	11.19	21.34
2011	15.61	5.96
2021	5.96	1.0

3.10 Coimbatore District

Coimbatore is the third largest city of the state, one of the most industrialized cities in Tamil Nadu, known as the textile capital of South India or the Manchester of the South India, the city is situated on the banks of the river Noyyal, Coimbatore existed even prior to the 2nd or 3rd century AD by Karikalan, the first of the early Cholas. Among its other great rulers were Rashtrakutas, Chalukyas, Pandyas, Hoysalas and the Vijayanagara kings. When Kongunadu fell to the British along with the rest of the state, its name was changed to Coimbatore and it is by this name that it is known today, in local Tamil language it is also called as Kovai.

Coimbatore serves as an entry and exit point to neighboring Kerala State and the very popular hill station of Udthagamandalam (Ooty) is 70 kms from Coimbatore. It is the disembarking point for those who want to take the Mountain train that runs from Mettupalayam just 35 kms away from Coimbatore, regular bus services also available daily from Coimbatore to Ooty and other districts, towns and major cities.

Coimbatore lies at 11°1'6"N 76°58'21"E in south India at 427 metres above sea level on the banks of the Noyyal River, in northwestern Tamil Nadu.

3.11 Study Area

Detailed socio-economic survey was conducted in the study area (Core and buffer zone) within 10 km radius of the area at Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State. In order to determine the impact of the proposed project on nature and inhabitant. To get an overview of the villagers and their perspectives

about this proposed activity, different demographic parameters and social aspects such population density, sex ratio, literacy rate, worker ratio etc. has been identified, analyzed, studied together. These impacts may be beneficial or disadvantageous. If disadvantageous anticipated suggestions measures are advocated in order to have collective development.

3.12 Demographic pattern of 10km study area characteristics a comparative analysis

Table 3.12.1 Shows the socio-economic profile of the study area as compared to district, state and national level socio-economic profile

Particular	India	Tamil Nadu	Coimbatore District	Study Area (10km Radius)
Area (in sq. km.)	3,287,263	130058	7649	323
Population Density/ sq. Km.	368	554	452	285
No. of Households	249454252	13357027	958035	26772
Population	1210569573	72147030	3458045	92015
Male	623121843	36137975	1729297	45971
Female	587447730	36009055	1728748	46044
Scheduled Tribes	104281034	794697	28342	737
Scheduled Castes	201378086	14438445	535911	18038
Literacy Rate	72.99%	80%	76.22%	74.35%
Sex Ratio (Females per 1000 Males)	943	996	1000	1002

Source: Census of India, 2011

Table no 3.12.1 show demographic pattern of India, Tamil Nadu, Coimbatore District & Study area (10km Radius). In India had total area of 3.2 sqkm, State of Tamil Nadu area was 130058 sqkm, District of Coimbatore area was 642 sqkm and study area is about 323 sqkm. Population density is total population per sqkm. So, India population density was 368 sqkm, state of Tamil Nadu density was 554 sqkm, District had density about 452 sqkm and study area density is about 285 sqkm. As per Census 2011, about 5.96percent of population in the state lives in areas. Coimbatore had comparing state wise 4.79 percent of population lives in the district. In study area has 2.66 % around 10km radius. State, District and study area. In Tamil Nadu state SC categories people had about 19 %, district of Coimbatore about 15.49 % it has increasing to Study area about 19.60% increasing in the total population Similarly ST population is about 1.10%, 0.82% and 0.80% of the total population in the study area. State level Literacy rate is 80%, district level is 76% but study area has decreased about 74.35%. There is literacy rate is study area decrease comparing district level decrease in the study area. Sex ratio female per thousand males about state level is 996, District level is 1000 and study area is 1002.

The study area has population density 285 persons per sq.km of total population about 92015 as per census 2011. There were about 49.96 percent male and 50.04% female population. Study area has literate rate is about 74%. District had about 76% of literate rate as per census 2011.

3.13 Population Projection of the Study Area

A population projection is an estimation of the number of people expected to be alive at a future date that is made based on assumptions of population structure, fertility, mortality and migration. It is an essential to assess the need for new jobs, schools, doctors and nurses, planning urban housing, foods, clothing and requirements of energy and resources. It is also needed for policy discourse i.e., helps to the policy-makers to understand the existing problems and finally supports to develop the suitable solutions.

Table 3.13.1 Total Population of Study Area

SI No.	Population in 2001	Population in 2011
1	87978	92015

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

Table 3.13.2 Population Projection of Study Area

S. No	Year	Projected Population (Approximately)
1.	2021	96052
2.	2031	100089
3.	2041	104126
4.	2051	108163

Source: Calculated by SPSS v29, 2022.

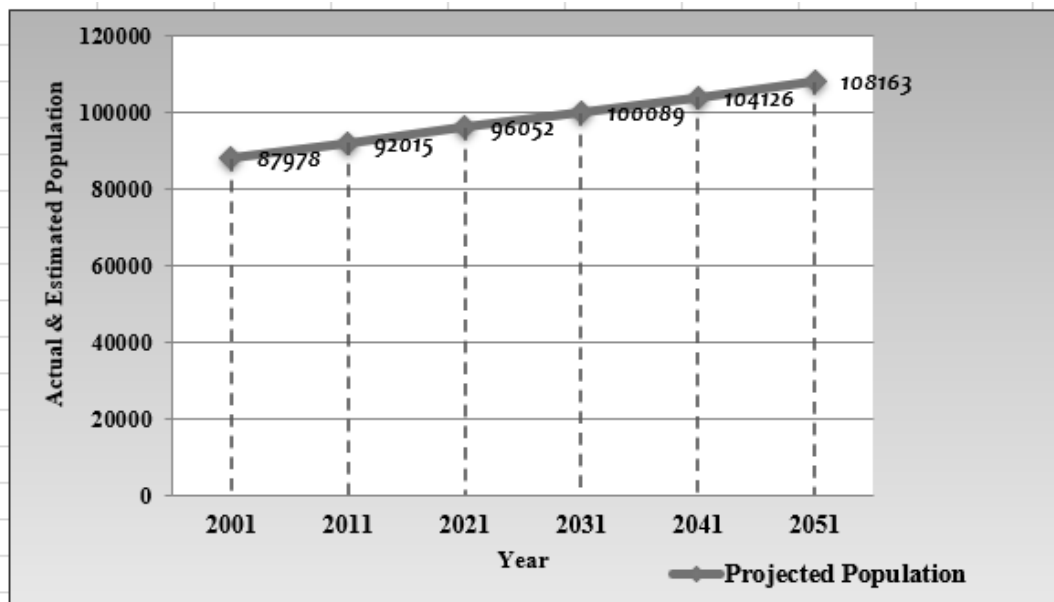


Fig 3.13.3 Graph Showing Population Projection

Following formula has been used for the projection of population.

$$Y=a+bt$$

Where: Y= Dependent variable (Population)

a=Intercept

b=Slope

t=Interdependent variables (Time)

Above formula is applied to project population for the years (2021, 2031,2041,2051). Due to avoid the errors in manual calculation the statistical software SPSS (demo version 29) is used to calculate the intercept and the slope.

Due to the shortage of data on population the results show same value of growth for the years (2021,2031,2041,2051). If the researcher gets enough the data on population for earlier years the data projection will be accurate.

- Ref: Indian Economic survey, the SLR (Simple Linear Regression) techniques are used by statistical department, Government of India to project population.
- Source: <https://www.ibm.com/in-en/analytics/spss-statistics-software>

3.14 Population Growth of the Study Area

Table 3.14.1 Population Growth rate in Study area

Year	Actual Population	Growth Rate %
2001	87978	-
2011	92015	10.46
2021	96052	10.44
2031	100089	10.42
2041	104126	10.40
2051	108163	10.39

Source: Compiled by Author-2022

Above table no 3.14.1 is showing the growth rate of population since 2001, as per census in 2001 the population of study area was 87978 and 2011 it was 92015 if the population growth rate is 10.46%, it will approximately 96052 in year 2021 and 108163 in the year of 2051. It has approximately population growth rate decline will be 10.39%.

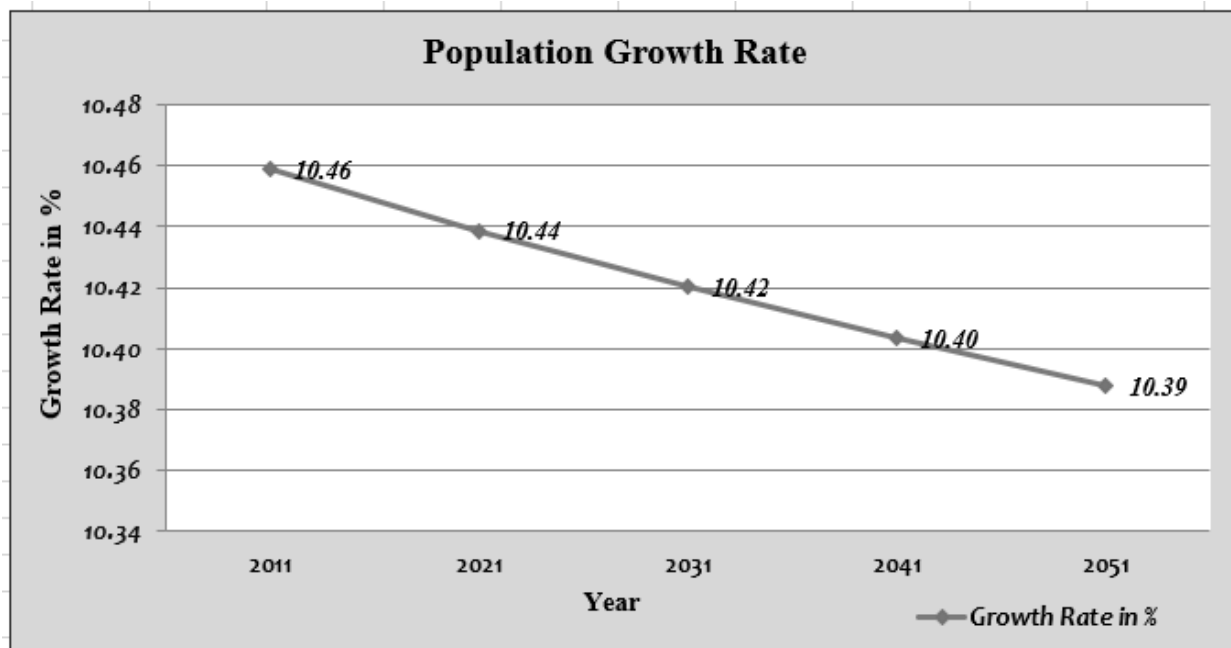


Fig.3.14.2 Graph Showing Population Growth Rate

Planning Analysis:

Calculating Growth Rates

The percent change from one period to another is calculated from the formula:

Where:

$$PR = \frac{(V_{Present} - V_{Past})}{V_{Past}} \times 100$$

PR=Percent Rate

$V_{Present}$ =Present or Future Value

V_{Past} = Past or Present Value

The *annual* percentage growth rate is simply the percent growth divided by N, the number of years.

Source: <https://pages.uoregon.edu/rgp/PPPM613/class8a.htm>

3.15 Population Distribution and Composition of Study Area

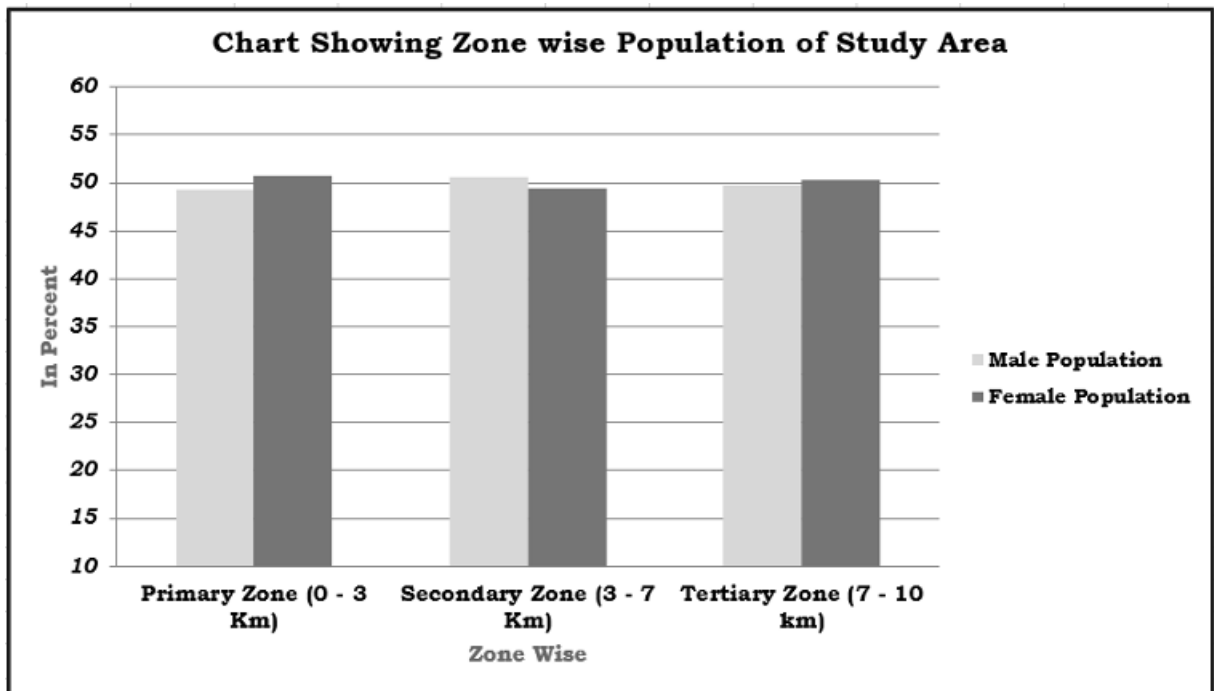
The population as per 2011 Census records is 92015 (for 10 km radius buffer zone). Total no. of household is 3060, 8153 and 15553 respectively, in primary, secondary and tertiary zone. Sex ratio is 1032, 976 and 1009 (females per 1000 males) observed in primary, secondary and tertiary zone respectively. SC population distribution is 2051, 5681 and 10306 respectively in primary, secondary and tertiary zone. ST population distribution is 10, 13 and 714 respectively in primary, secondary and tertiary. Average household size is 3. Zone wise Demographic profile of study area is given in the table 1.18.1 below:

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

Table 3.15.1 Zone wise Demographic Profile of Study Area

Zone	No. of Villages	Total Household	Total Population	Male Population	%	Female Population	%
Primary Zone (0 - 3 Km)	3	3066	10148	4994	49.21	5154	50.79
Secondary Zone (3 - 7 Km)	9	8153	27700	14021	50.62	13679	49.38
Tertiary Zone (7 - 10 km)	11	15553	54167	26956	49.76	27211	50.24
Study Area (0-10 km)	23	26772	92015	45971	49.96	46044	50.04

Source: Census of India, 2011

**Figure 3.15.2 Population of study area**

- ✓ Above table identifies the presence of villages and their subsequent population divided under three zones from plant boundary (i.e., Primary, secondary and tertiary zone)
- ✓ Primary zone has 3 villages where as much as 3066 households with 10148 population are located. Mostly lying on Built-up land for their livelihood and substance.
- ✓ Secondary and tertiary zone both comprise of 9 and 11 villages having a total population of 27700 and 54167 respectively.

3.16 Gender and Sex Ratio

Sex ratio is used to describe the number of females per 1000 of males. Sex ratio is a valuable source for finding the population of women in India and what is the ratio of women to that of men in India. In the Population Census of 2011, it was revealed that the population ratio in India 2011 is 940 females per 1000 of males. The study area has 1002 females per 1000 males. Gender and sex ratio determine the Human Development Index (HDI) of an area thereby understanding the status of women in that region. Following table entails information about sex ratio of 23 villages lying in study area (buffer zone) as primary, secondary and tertiary zone.

Table 3.16.1 Sex ratio of the study area

S. No.	Buffer Zone	Sex Ratio of Study area Female/ 1000 Male
1	Primary Zone (0-3 km)	1032
2	Secondary zone (3-7 km)	976
3	Tertiary Zone (7-10 km)	1009

Source: Census of India, 2011

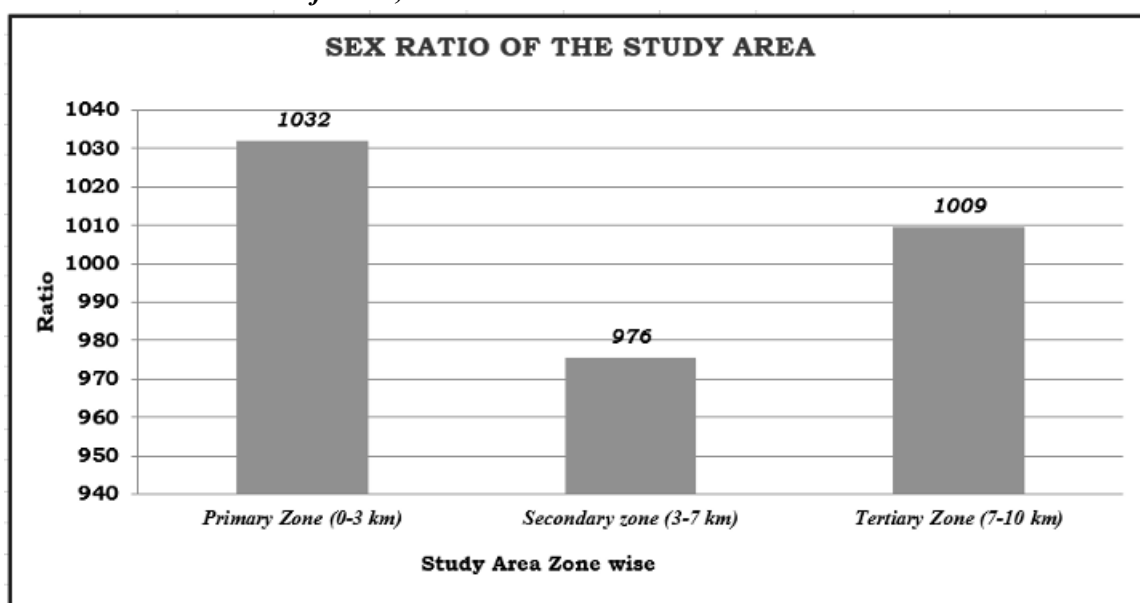


Figure 3.16.2 Sex Ratio within 10 Km study area

3.17 Literacy Rate in Study Area

Literacy Rate is the percentage of people in a country with the ability to read and write. The analysis of the literacy levels is done in the study area. The 10 km radius of study area demonstrates a literacy rate of 73.42% as per census data 2011. The male literacy rate in the study area indicates 84.39% whereas the female literacy rate, which is an important indicator for social change, is observed to be 62.79% as per the census data 2011. This needs to focus on the region and enhance further development focusing on education. (Table no 3.17.1).

Table 3.17.1 Literacy Rate of the Study Area

Zone	No. of Villages	Male Literacy Population	Male literacy Rate	Female Literacy Population	Female literacy Rate	Total Literacy	Total Literacy Rate
Primary Zone (0 - 3 Km)	3	3722	79.87	3022	62.55	6744	71.06
Secondary Zone (3 - 7 Km)	9	10609	81.60	8124	63.77	18733	72.77

Tertiary Zone (7 - 10 Km)	11	20255	82.97	17065	68.75	37320	75.80
Study Area (0-10km)	23	34586	82.20	28211	66.55	62797	74.35

Source: Census of India, 2011

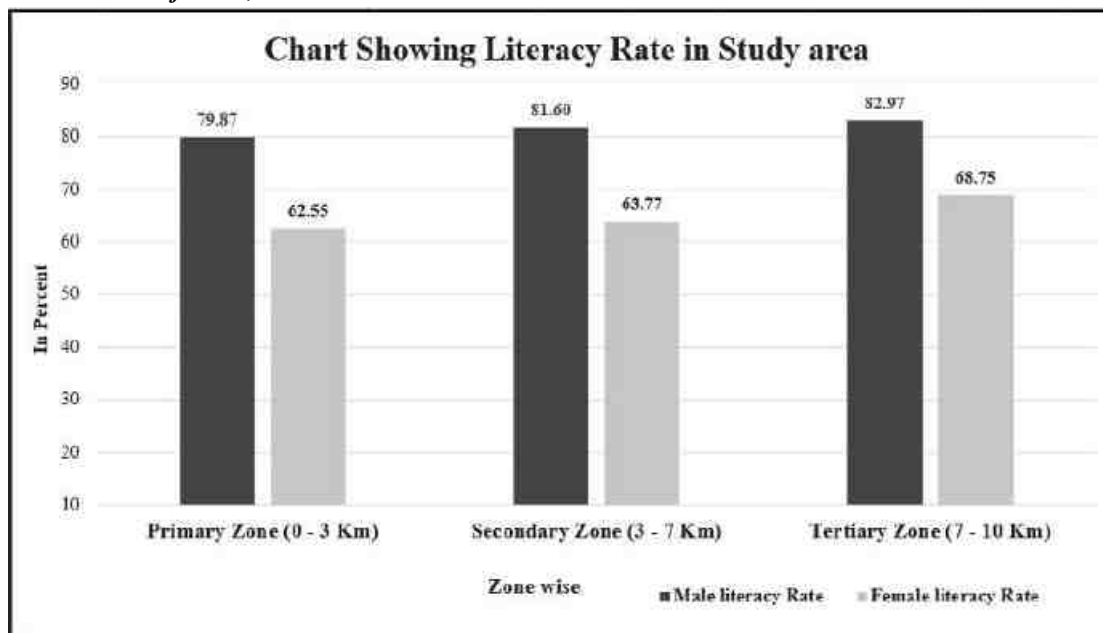


Figure 3.17.2 Gender wise Literacy Rate in the study area

3.18 Family Size

Size of family also describes about family functioning, resource consumption, total income generated and their expenditure pattern. Census 2011 data suggests that most of these households have a family size of up to 3 members, knowing the size of family also give fair understanding of relating how much resource consumption is being incurred, and annual income being generated and spent.

3.19 Vulnerable Group

While developing an action plan, it is very important to identify the population who fall under the marginalized and vulnerable groups and special attention has to be given towards these groups while making action plans. Special provisions should be made for them. In the observed villages schedule caste (SC) population is 26.86% and Schedule Tribe population 0.03%, Other Population is 73.11% in Total study area.

Table 3.19.1 vulnerable groups of the study area

Zone	No. of Villages	Vulnerable Groups					
		SC Population	%	ST Population	%	Other Population	%
Primary Zone (0 - 3 Km)	3	2051	20.21	10	0.10	8087	79.69
Secondary Zone (3 - 7 Km)	9	5681	20.51	13	0.05	22006	79.44
Tertiary Zone (7 - 10 Km)	11	10306	19.03	714	1.32	43147	79.66

Total area (10km)	23	18038	19.60	737	0.80	73240	79.60
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Source: Census of India, 2011

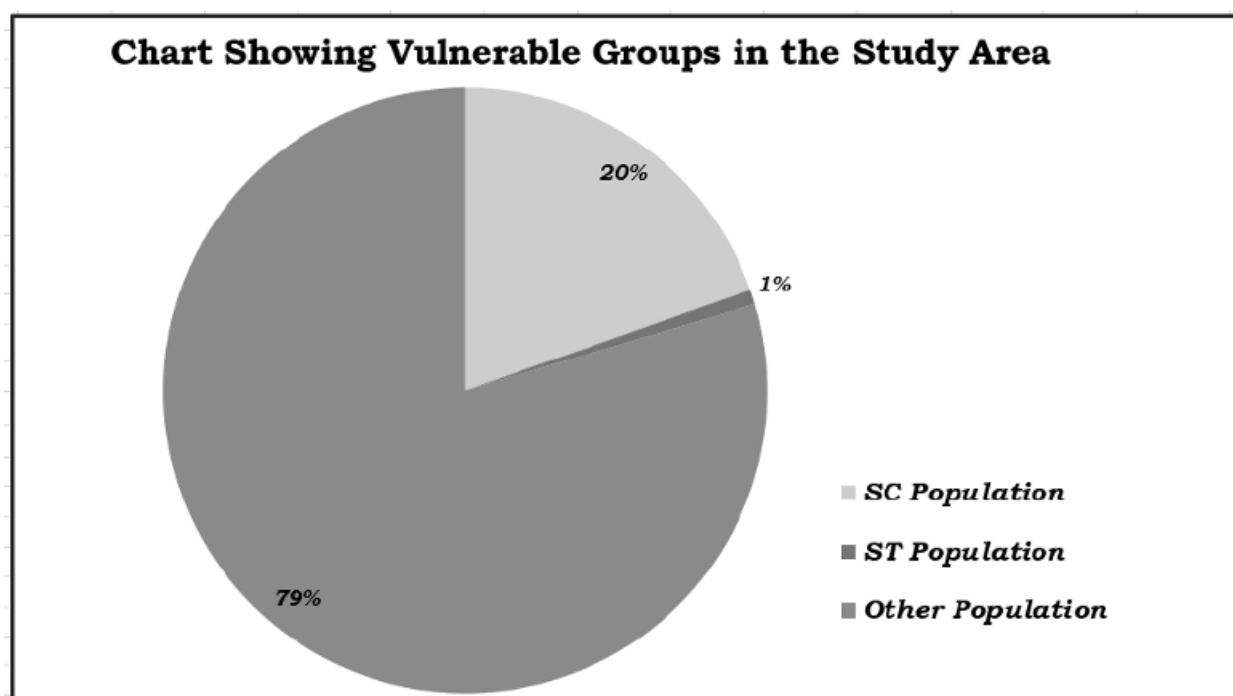


Figure 3.19.2 vulnerable groups

3.20 Economic Activities

The economy of an area is defined by the occupational pattern and income level of the people in the area. The occupational structure of residents in the study area is studied with reference to work category. The population is divided occupation wise into three categories, viz., Total workers, Main workers and non-workers. The main workers include cultivators, agricultural laborers, those engaged in household industry and other services. The non-workers include those engaged in unpaid household duties like, students, retired persons, dependents, beggars, vagrants etc. besides Institutional intimates or all other non-workers who do not fall under the above categories.

Table 3.20.1 shows the work force of the study area

Zone	No. of Villages	Total Workers	%	Main Workers	%	Marginal Workers	%	Non-Workers	%
Primary Zone (0 - 3 Km)	3	5422	53.43	5229	51.53	193	1.90	4726	46.57
Secondary Zone (3 - 7 Km)	9	15486	55.91	14613	52.75	873	3.15	12214	44.09
Tertiary Zone (7 - 10 Km)	11	27724	51.18	25442	46.97	2282	4.21	26443	48.82
Study Area (10 Km)	23	48632	52.85	45284	49.21	3348	3.64	43383	47.15

Source: Census of India, 2011

The above table shows that out of the total working population, the percentage of main workers is 49.21 % while 3.64% are marginal workers. Number of working populations is 52.85% and non-working population is 47.15% in the study area. As per the data obtained from the survey (as mentioned previously in occupational structure) most

of these people are employed for major period of the year. Also, to mention the natural environment also restricts the people in finding stable business is performed for only certain months. Thus, proposed project will act as possible exposure for them to get enroll and earn sustain livelihood.

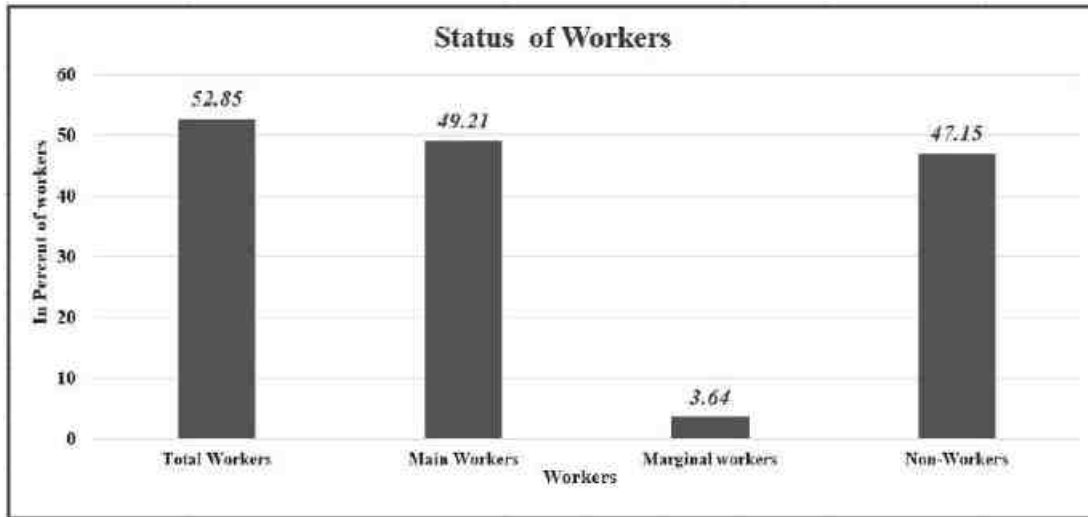


Figure 3.20.2. Working population in the study area

3.21 Infrastructure Base

A better network of physical infrastructure facilities (built up and roads, irrigation, power and social infrastructure support, viz. health and Education, water and sanitation are essential for the development of the rural economy. A review of infrastructural facilities available in the area has been done based on the information from baseline survey & census data of the study area. Infrastructural facilities available in the area are described in the subsequent sections.

- Administrative offices are located in Tamil Nadu, Coimbatore district (23km-NW) from site which by local transport.
- Kothavadi Lake Western side, Cheripalayam lake Southern side 10 km from mine lease boundary.
- Availability of Government high school Cheripalayam Village (S-3.0km), Government Aided school , Kappinipalayam (SE-3.6km), Government Primary School, Nallattipalayam Village (SW-9.0km), Government school, Kinathukadavu (W-7.5km), Government school Myleripalayam Village (NW9.3km) Kinathukadavu Taluk many Engineering college and Training institute found in study area.
- Health facilities covered in the Core zone area Vadachittur PHC (0-3km), Buffer zone area like Government Hospital Nallattipalayam village, Government Hospital Kinathukadavu, Government General Hospital, Periya Negamam etc.

Table 3.21.1 Educational Facilities in the Surveyed Area

Sno	Village Name	Govt Primary School (Numbers)	Private Primary School (Numbers)	Govt Middle School (Numbers)	Private Middle School (Numbers)	Govt Secondary School (Numbers)	Private Secondary School (Numbers)	Govt Senior Secondary School (Numbers)	Private Senior Secondary School (Numbers)
0-3km									
1	Vadasithur	3	0	1	0	1	0	1	0
2	Kurunallipalayam	1	0	0	0	0	0	0	0
3	Andipalayam	3	0	2	0	1	0	1	0
	Total	7	0	3	0	2	0	2	0
3-7km									
1	Arasampalayam	2	0	1	0	1	0	0	0
2	Panappatti	1	0	1	0	1	0	0	0
3	Mettubavi	3	0	1	0	0	0	0	0
4	Kondampatty	1	1	1	1	0	0	0	0
5	Kothavadi	2	0	1	0	0	0	0	0
6	Kattampatti	3	0	2	0	1	0	0	0
7	Chettiakkapalayam	1	1	0	0	0	0	0	0
8	Devanampalayam	3	0	1	0	1	0	0	0
9	Kappalankarai	1	2	0	0	0	0	0	0
	Total	17	4	8	1	4	0	0	0
7-10km									
1	Vadavalli	2	0	1	0	1	0	0	0
2	Pachapalayam	2	0	1	0	0	0	0	0
3	Myleripalayam	3	0	1	0	0	0	0	0
4	Nallattipalayam	3	1	1	0	0	0	0	0
5	Vadakkipalayam	1	0	1	0	0	0	0	0
6	Mullipadi	1	0	0	0	0	0	0	0
7	Sinna Negamam	1	0	0	0	0	0	0	0
8	Varadanur	2	2	0	2	0	2	0	1
9	Arasur (CT)	3	0	2	0	1	0	1	0
10	Kinathukadavu (TP)	4	0	6	0	1	1	1	1
11	Periya Negamam (TP)	4	0	2	0	2	0	1	0
	Total	15	3	5	2	1	2	0	1
	G.Total	39	7	16	3	7	2	2	1

Source: DCHB Census 2011, Tamil Nadu.

Table 3.21.2 Health/ Medical Facilities in the Surveyed Area

Sno	Village Name	Community Health Centre (Numbers)	Primary Health Centre (Numbers)	Primary Health Sub Centre (Numbers)	Maternity And Child Welfare Centre (Numbers)	Hospital Allopathic (Numbers)	Dispensary (Numbers)	Veterinary Hospital (Numbers)	Family Welfare Centre (Numbers)	Non-Government Medical facilities Medicine Shop (Numbers)	Non-Government Medical facilities Others (Numbers)
0-3km											
1	Vadasithur	0	0	1	0	0	0	1	0	2	1
2	Kurunallipalayam	0	0	0	0	0	0	0	0	0	1
3	Andipalayam	0	0	1	1	0	0	0	0	1	1
	Total	0	0	2	1	0	0	1	0	3	3
3-7km											
1	Arasampalayam	0	0	1	0	0	0	0	0	0	0
2	Panappatti	0	0	1	0	0	0	1	0	1	0
3	Mettubavi	0	0	0	0	0	0	0	0	0	0
4	Kondampatty	0	0	1	0	0	0	0	0	0	0
5	Kothavadi	0	0	0	0	0	0	0	0	0	0
6	Kattampatti	0	0	0	0	0	0	0	0	1	0
7	Chettiakkapalayam	0	0	1	0	0	0	0	0	0	0
8	Devanampalayam	0	0	1	0	0	0	0	0	1	0
9	Kappalankarai	0	0	1	0	0	0	0	0	1	0
	Total	0	0	6	0	0	0	1	0	4	0
7-10km											
1	Vadavalli	0	0	1	0	0	0	0	0	0	0
2	Pachapalayam	0	0	0	0	0	0	1	0	0	0
3	Myleripalayam	0	1	1	1	0	1	0	1	1	0
4	Nallattipalayam	1	1	1	1	0	1	0	1	1	0
5	Vadakkipalayam	0	0	1	0	0	0	0	0	0	0
6	Mullipadi	0	0	0	0	0	0	0	0	0	0
7	Sinna Negamam	0	0	1	0	0	0	0	0	0	0
8	Varadanur	0	0	1	0	0	0	1	0	0	0
9	Arasur (CT)	0	0	0	0	0	0	1	0	0	0

10	Kinathukadavu (TP)	0	0	0	1	0	1	1	1	0	0
11	Periya Negamam (TP)	0	0	0	1	0	1	1	0	0	0
	Total	1	2	6	2	0	2	2	2	2	0
	G.Total	1	2	14	3	0	2	4	2	9	3

Source: DCHB Census 2011, Tamil Nadu.

Table 3.21.3 Water & Drainage Facilities in the Surveyed Area

Sno	Village Name	Tap Water-Treated (Status A(1)/NA(2))	Tap Water Untreated (Status A(1)/NA(2))	Covered Well (Status A(1)/NA(2))	Uncovered Well (Status A(1)/NA(2))	Hand Pump (Status A(1)/NA(2))	Tube Wells/Borehole (Status A(1)/NA(2))	Spring (Status A(1)/NA(2))	River/Canal (Status A(1)/NA(2))	Tank/Pond/Lake (Status A(1)/NA(2))	Others (Status A(1)/NA(2))	Closed Drainage (Status A(1)/NA(2))	Open Drainage (Status A(1)/NA(2))	No Drainage (Status A(1)/NA(2))
0-3km														
1	Vadasithur	1	1	1	1	1	1	2	2	2	1	1	1	1
2	Kurunallipalayam	1	1	1	1	2	1	2	2	1	2	1	1	1
3	Andipalayam	1	1	1	1	1	1	2	2	2	1	1	1	1
	Total	3	3	3	3	2	3	0	0	1	2	3	3	3
3-7km														
1	Arasampalayam	1	1	1	1	1	1	2	2	2	1	1	1	1
2	Panappatti	1	1	1	1	1	1	1	2	2	1	1	1	1
3	Mettubavi	1	1	1	1	2	1	1	2	2	1	1	1	1
4	Kondampatty	1	1	1	1	2	1	2	1	2	1	1	1	1
5	Kothavadi	1	1	1	1	2	1	2	1	2	1	1	1	1
6	Kattampatti	1	1	1	1	2	1	2	1	2	2	1	1	1
7	Chettiakkapalayam	1	1	1	1	1	1	2	2	2	1	1	1	1
8	Devanampalayam	1	1	1	1	2	1	2	2	2	1	1	1	1
9	Kappalankarai	1	1	1	1	2	1	2	1	2	1	1	1	1
	Total	9	9	9	9	3	9	2	4	0	8	9	9	9
7-10km														
1	Vadavalli	1	1	1	1	2	1	1	2	2	2	2	1	1
2	Pachapalayam	1	1	1	1	1	1	2	2	2	2	1	1	1
3	Myleripalayam	1	1	1	1	1	1	2	2	2	2	1	1	1
4	Nallattipalayam	1	1	1	1	1	1	1	2	2	1	1	1	1
5	Vadakkipalayam	1	2	1	1	1	1	2	2	2	2	1	1	1
6	Mullipadi	1	1	2	1	2	1	2	2	2	2	1	1	1
7	Sinna Negamam	1	1	1	1	2	1	2	2	2	1	1	1	1
8	Varadanur	1	1	1	1	1	1	2	2	2	1	1	1	1
9	Arasur (CT)	1	1	1	1	1	1	2	2	2	1	1	1	1
10	Kinathukadavu (TP)	1	1	1	1	1	1	2	2	2	1	1	1	1
11	Periya Negamam (TP)	1	1	1	1	1	1	2	2	2	1	1	1	1
	Total	11	10	10	11	8	11	2	0	0	6	10	11	11
	G.Total	23	22	22	23	13	23	4	4	1	16	22	23	23

Source: DCHB Census 2011, Tamil Nadu.

3.21.4 Transport and Other Infrastructure Facilities in the Surveyed Area

Sno	Village Name	Post Office (Status A(1)/NA(2))	Sub Post Office (Status A(1)/NA(2))	Post And Telegraph Office (Status A(1)/NA(2))	Telephone (landlines) (Status A(1)/NA(2))	Private Courier Facility (Status A(1)/NA(2))	Public Bus Service (Status A(1)/NA(2))	Private Bus Service (Status A(1)/NA(2))	Railway Station (Status A(1)/NA(2))	Auto/Modified Autos (Status A(1)/NA(2))	Taxi (Status A(1)/NA(2))	Vans (Status A(1)/NA(2))	Tractors (Status A(1)/NA(2))	Cycle-pulled Rickshaws (manual driven) (Status A(1)/NA(2))	Cycle-pulled Rickshaws (machine driven) (Status A(1)/NA(2))	Carts Driven by Animals (Status A(1)/NA(2))	National Highway (Status A(1)/NA(2))	State Highway (Status A(1)/NA(2))	Major District Road (Status A(1)/NA(2))	Other District Road (Status A(1)/NA(2))
0-3km																				
1	Vadasithur	2	1	2	1	2	1	1	2	1	1	1	2	2	2	2	2	2	1	1
2	Kurunallipalayam	2	1	2	1	2	1	1	2	2	2	2	2	2	2	2	2	2	1	1
3	Andipalayam	2	1	2	1	2	1	1	2	2	1	1	2	2	2	2	2	2	1	1
	Total	0	3	0	3		3	3		0	2	2	0	0	0	0	0	0	3	3
3-7km																				
1	Arasampalayam	2	1	2	1	2	1	1	2	2	2	2	2	2	2	2	2	1	1	1
2	Panappatti	2	2	2	1	2	1	2	2	2	1	2	2	2	2	2	2	2	1	1
3	Mettubavi	2	2	2	1	2	1	2	2	2	2	1	2	2	2	2	2	2	1	1
4	Kondampatty	2	1	2	1	2	1	1	2	2	2	2	2	2	2	2	2	1	1	1
5	Kothavadi	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	1	2	1	1
6	Kattampatti	2	1	2	1	2	1	1	2	1	1	1	2	2	2	2	2	1	1	1
7	Chettiakkapalayam	2	1	2	1	2	1	1	2	2	1	2	2	2	2	2	2	1	1	1
8	Devanampalayam	2	1	2	1	2	1	1	2	2	1	1	2	2	2	2	2	2	1	1
9	Kappalankarai	2	2	2	1	1	1	1	2	2	1	1	2	2	2	2	2	1	1	1
	Total	0	6	0	9	1	9	6	0	1	5	4	0	0	0	0	1	5	9	9
7-10km																				
1	Vadavalli	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2
2	Pachapalayam	2	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1	1
3	Myleripalayam	2	1	2	1	2	1	2	2	1	1	2	2	2	2	2	1	1	1	1
4	Nallattipalayam	2	1	2	1	2	1	1	2	2	1	1	2	2	2	2	1	1	1	2
5	Vadakkipalayam	1	1	1	1	2	1	1	2	2	1	2	2	2	2	2	2	1	1	1
6	Mullipadi	2	2	2	1	2	1	1	2	2	2	2	2	2	2	2	2	1	1	1
7	Sinna Negamam	2	1	2	1	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2
8	Varadanur	1	2	1	1	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2
9	Arasur (CT)	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	2	2
10	Kinathukadavu (TP)	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	2	2
11	Periya Negamam (TP)	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	2	2
	Total	5	9	5	8	4	11	8	3	4	6	4	1	0	0	0	5	8	5	4
	G.Total	5	18	5	20	5	23	17	3	5	13	10	1	0	0	0	6	13	17	16

Source: DCHB Census 2011, Tamil Nadu.

3.22. Other Issues in the Study Area

1. Deforestation of Land (Cutting Trees or Plant etc.)
2. Agriculture Land decreases
3. Lack of awareness among vulnerable groups for their welfare
4. Medical/Clinic facilities and PHC need for the Core area
5. Environmental clean with solid wastage pin each village.
6. Functioning of Hospital facilities with Sub Health care centers.
7. Need proper drainage system with public toilet men and women separately.

3.23 Interpretation

Based on the data, following inferences could be drawn:

- Total literacy rate in the study area is 74.35%.
- The study area had average educational facilities. The overall status depicts that the education is limited to primary and middle level.
- The schedule tribe community forms 0.80% and Scheduled Caste forms 19.60% of the total population of study area.
- The Other Population forms 79.60% of the total population of study area.
- The study area is well connected by District/Village Road.
- The study area not well health facilities of primary level.
- Considering the above facts, the proposed project will boost the socio-economic development activities in the area and hence will leave positive impact.
- The study area has mobile connectivity.

3.24 Recommendation and Suggestions

The village development plans are made in consultation with the community through Gram Sabha; these appear to address the needs of the community. However, it may be noted that at the implementation stage these plans often are fraught with problem of inadequate funds, lack of proper planning, corruption, vested interests and political agendas. Hence while ascertaining the scope for convergence with the government activities, care must be taken to ascertain realistic possibilities for implementation.

- **Women empowerment**– Home based income generation activities, vocational training programs and common education centre for increasing the literacy rate.
- **Education** – Free uniform, construction of common rooms and library, computer education and physical education, additional schools for girls, furniture and equipment in schools, up-gradation of existing school infrastructure.
- **Agriculture/livestock** – Infrastructure such as agricultural practices, electricity connections, assistance with buying improved tools and equipment, capacity building, supply and/or knowledge of better variety of seeds, pasture land development and trainings on animal husbandry& facility of veterinary doctor.
- **Health** – Improvements in sanitary conditions of villages, assistance with construction of latrines, improvement in drainage system, health camps and awareness campaigns for diseases like Covid-19, malaria, typhoid, tuberculosis, yellow fever and pneumonia. Repairing of PHCs and Anganwadi centers.

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-
- **People with disability** – Establishment of center for special education, sensitization of the community towards disabled and awareness on Government schemes.
 - While **Developing an Action Plan**, it is very important to identify the population who falls under the marginalized and vulnerable groups. So that special attention can be given to these groups with special provisions while making action plans.
 - **Connectivity** –Transport connectivity to easiness accessibility to the region.

3.25 Summary & Conclusion

To evaluate the impacts of proposed quarry project on the surrounding area, it is vital to assess the baseline status of the environmental quality in the locality of the site. Hence it can be concluded that the present environment status of the study area will not be affected by the project as **Thiru.Abdul Jabbar**, will adopt adequate control measures to protect the surrounding environment and will contribute in development of the study areas.

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

4. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.0 GENERAL

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

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

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

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

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

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

4.1 LAND ENVIRONMENT:

4.1.2 Anticipated Impact of Proposed Project

- Permanent or temporary change on land use and land cover.
- Change in Topography: Topography of the ML area will change at the end of the life of the mine.
- Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations due to dust, noise and it also causes traffic hazards.
- Due to degradation of land by pitting the aesthetic environment of the core zone may be affected.
- Earthworks during the rainy season increase the potential for soil erosion and sediment laden water entering the water ways.

If no due care is taken wash off from the exposed working area may choke the water course & can also causes the siltation of water course.

4.1.2 Common Mitigation Measures for Proposed Project

- The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigative measures like phase wise development of greenbelt etc.
- Construction of garland drains all around the quarry pits and construction of check dam at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.
- Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt.
- Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
- At conceptual stage, the land use pattern of the quarry will be changed into Greenbelt area and temporary reservoir
- In terms of aesthetics, natural vegetation surrounding the quarry will be retained (such as in a buffer area i.e., 7.5m safety barrier and other safety provided) so as to help minimise dust emissions.
- Proper fencing will be carried out at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle.

4.1.3 Soil Environment

The proposed projects area is covered by thin layer of topsoil formation and the average thickness is about 2 m, there is no topsoil excavation during the mining plan period.

4.1.4 Impact on Soil Environment from Proposed Project

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

4.1.5 Common Mitigation Measures for Proposed Project

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

4.1.6 Waste Dump Management

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

4.2 WATER ENVIRONMENT

4.2.1 Anticipated Impact from Proposed Project

- The major sources of water pollution normally associated due to mining and allied operations are:
 - Generation of waste water from vehicle washing.
 - Washouts from surface exposure or working areas
 - Domestic sewage
 - Disturbance to drainage course in the project area
 - Mine Pit water discharge
- Increase in sediment load during monsoon in downstream of lease area

- This being a mining project, there will be no process effluent. Waste from washing of machinery may result in discharge of Oil & grease, suspended solids.
- The sewage from soak pit may percolate to the ground water table and contaminate it.
- Surface drainage may be affected due to Mining
- Abstraction of water may lead to depletion of water table

Detail of water requirements in KLD as given below:

TABLE 4.1: WATER REQUIREMENTS

PROPOSAL – P1		
*Purpose	Quantity	Source
Domestic & Drinking purpose	1.5KLD	From Existing, bore wells and drinking water will be sourced from Approved Water vendors.
Dust Suppression	2.0KLD	From Existing bore wells from nearby area
Green Belt	1.8KLD	From Existing bore wells from nearby area
Total	5.3 KLD	

* Water for drinking purpose will be brought from approved water vendors
Source: Approved Mining Plan Pre-Feasibility Report

4.2.2 Common Mitigation Measures for Individual Proposed Project

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

4.3 AIR ENVIRONMENT

4.3.1. Anticipated Impact from Proposed Project

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

4.3.1.1. Modelling of Incremental Concentration from Proposed Project

Wind erosion of the exposed areas and the air borne particulate matter generated by quarrying operation, and transportation are mainly PM₁₀ & PM_{2.5} and emissions of Sulphur dioxide (SO₂) & Oxides of Nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

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

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

The impact on Air Environment is due to the mining and allied activities during Land Development phase, Mining process and Transportation. The emissions of Sulphur dioxide (SO₂), Oxides of Nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are marginal. Loading - unloading and transportation of Rough Stone, 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 cumulative production three proposed quarries. Air environment and net increase in emissions by Open pit source modelling in AERMOD Software.

4.3.2.1 Emission Estimation

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

The general equation for emissions estimation is:

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

Where:

E = emissions;

A = activity rate;

EF = emission factor, and

ER =overall emission reduction efficiency, %

The proposed mining activity includes various activities like ground preparation, excavation, handling and transport of Rough Stone. 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.

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. Suspended Particulate Matter (SPM) is 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.

TABLE 4.2: ESTIMATED EMISSION RATE FOR PM₁₀

Activity	Source type	Value	Unit
		P1	
Drilling	Point Source	0.095063058	g/s
Blasting	Point Source	0.001877904	g/s
Mineral Loading	Point Source	0.043801529	g/s
Haul Road	Line Source	0.002495755	g/s
Overall Mine	Area Source	0.054567507	g/s

TABLE 4.3: ESTIMATED EMISSION RATE FOR SO₂

Activity	Source type	Value	Unit
		P1	
Overall Mine	Area Source	0.000920934	g/s

TABLE 4.4: ESTIMATED EMISSION RATE FOR NO_x

Activity	Source type	Value	Unit
		P1	
Overall Mine	Area Source	0.000045423	g/s

FIGURE 4.1: AERMOD TERRAIN MAP

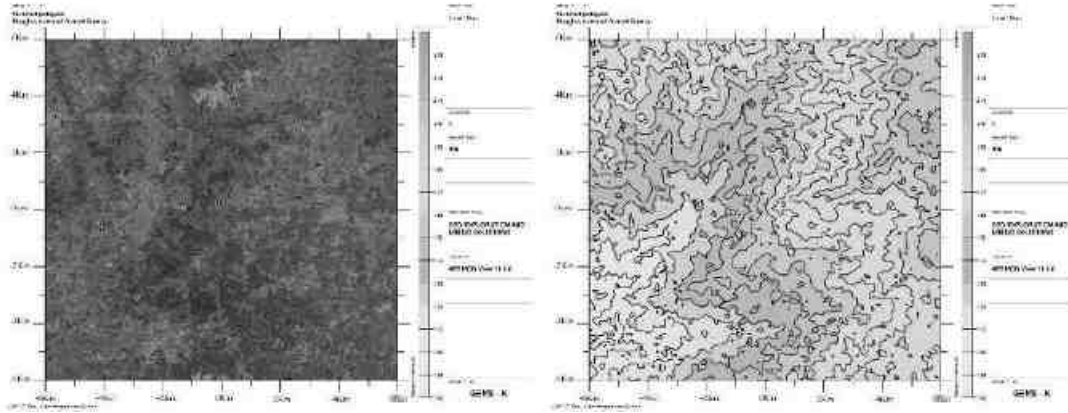


FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM₁₀

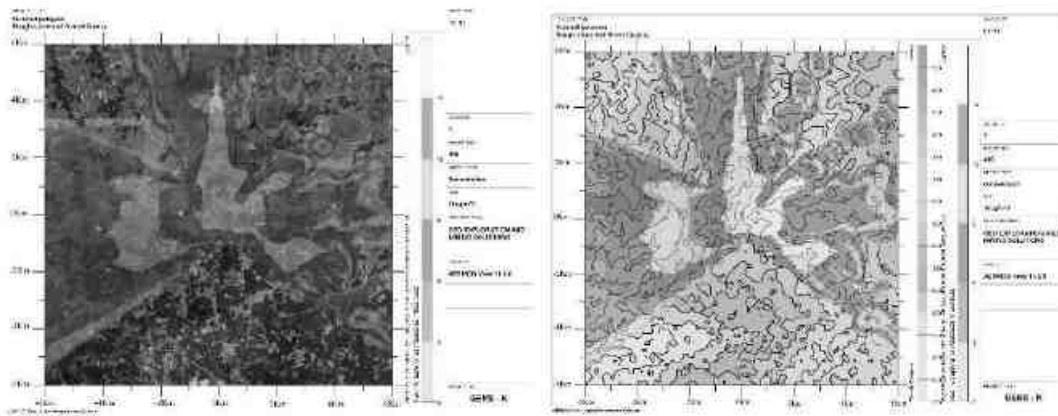


FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF PM_{2.5}

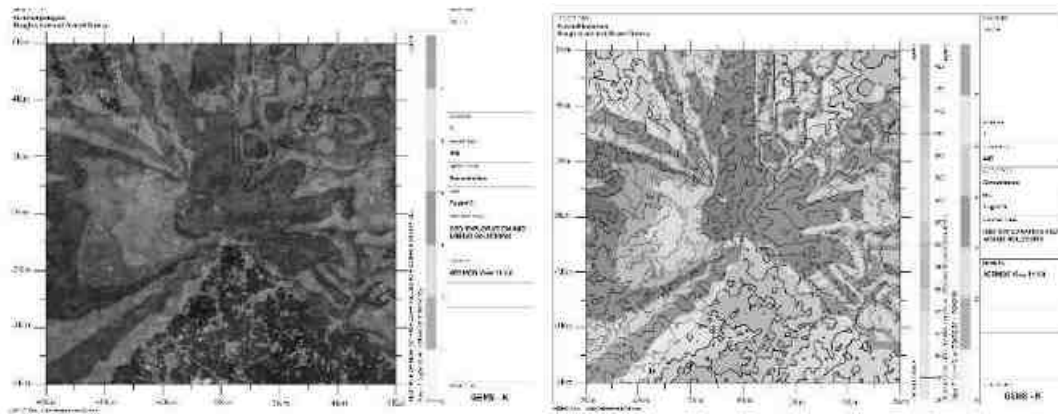


FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF SO₂

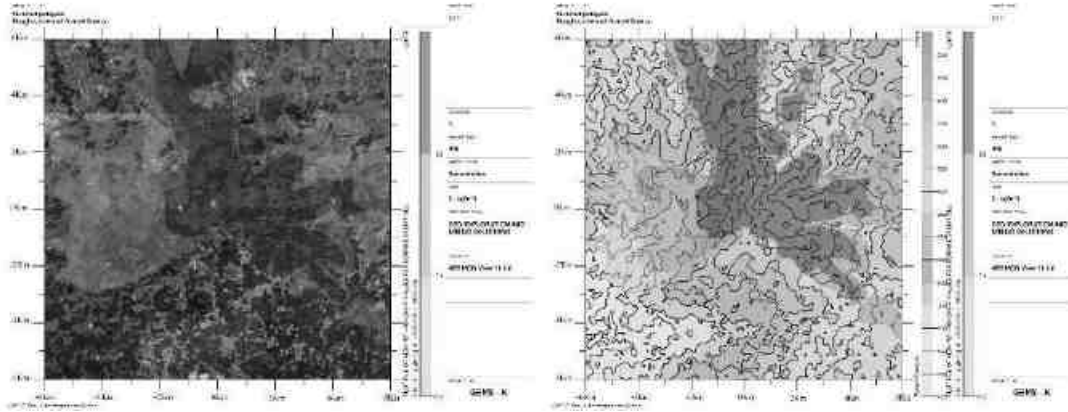


FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF NO_x

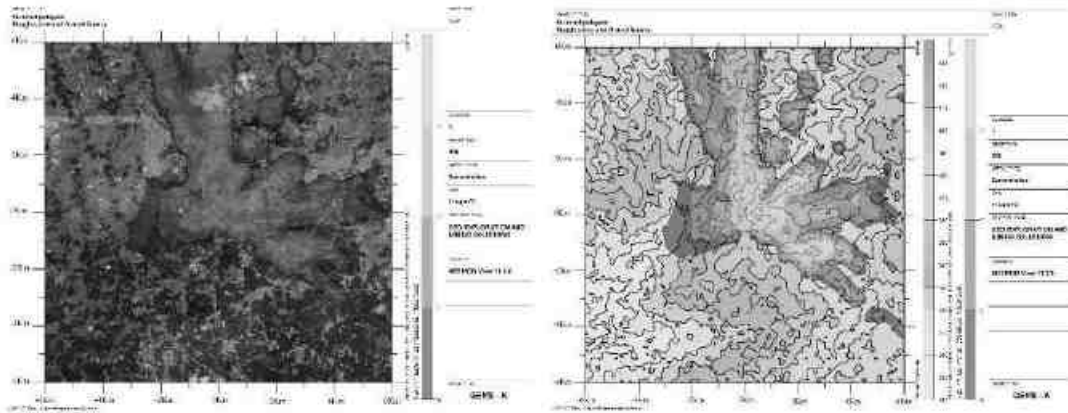
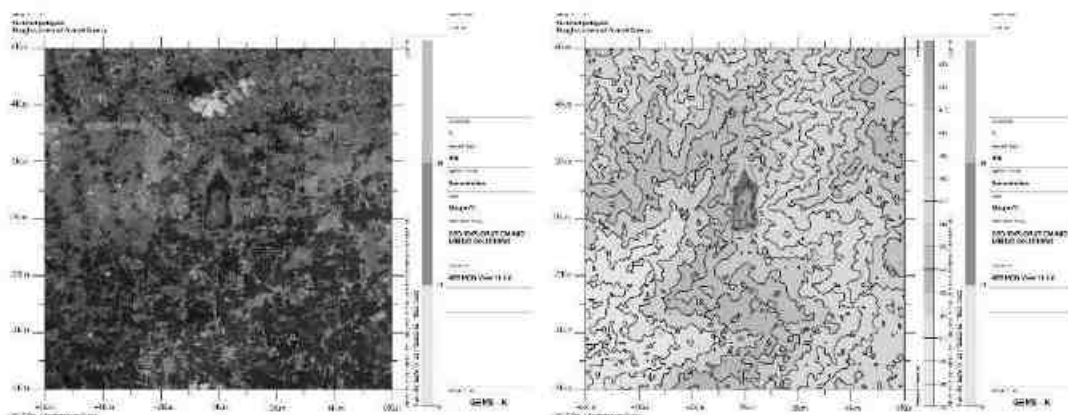


FIGURE 4.6: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE DUST



4.3.2.1 Model Results

The post project Resultant Concentrations of PM10, PM2.5, SO2 & NOX (GLC) is given in Table below:

TABLE 4.5: INCREMENTAL & RESULTANT GLC OF PM10

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM10 ($\mu\text{g}/\text{m}^3$)	Incremental value of PM10 due to mining ($\mu\text{g}/\text{m}^3$)	Total PM10 ($\mu\text{g}/\text{m}^3$) (5+6)
AAQ1	10°48'54.14"N 77° 5'25.59"E	-144	-39	43.8	16.89	60.7
AAQ2	10°48'49.13"N 77° 4'48.21"E	-1284	-213	43.1	14.2	57.3
AAQ3	10°48'57.16"N 77° 7'42.37"E	4026	57	43.8	11	54.8
AAQ4	10°47'7.92"N 77° 3'56.51"E	-2861	-3337	43.9	1.62	45.5
AAQ5	10°50'33.58"N 77° 2'31.20"E	-5462	3021	22.1	5.04	27.1
AAQ6	10°50'48.97"N 77° 5'50.10"E	604	3497	22.1	7	29.1
AAQ7	10°47'22.96"N 77° 8'33.05"E	5571	-2870	43.7	0	43.7
AAQ8	10°48'31.11"N 77° 3'14.49"E	-4143	-765	43.6	8.51	52.1

TABLE 4.6: INCREMENTAL & RESULTANT GLC OF PM2.5

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM2.5 ($\mu\text{g}/\text{m}^3$)	Incremental value of PM2.5 due to mining ($\mu\text{g}/\text{m}^3$)	Total PM2.5 ($\mu\text{g}/\text{m}^3$) (5+6)
AAQ1	10°48'54.14"N 77° 5'25.59"E	-144	-39	22.1	7.9	30.0
AAQ2	10°48'49.13"N 77° 4'48.21"E	-1284	-213	20.7	7.36	28.0
AAQ3	10°48'57.16"N 77° 7'42.37"E	4026	57	22.1	6.01	28.1
AAQ4	10°47'7.92"N 77° 3'56.51"E	-2861	-3337	22.2	1.47	23.6
AAQ5	10°50'33.58"N 77° 2'31.20"E	-5462	3021	22.1	2.6	24.7
AAQ6	10°50'48.97"N 77° 5'50.10"E	604	3497	22.1	3.55	25.7
AAQ7	10°47'22.96"N 77° 8'33.05"E	5571	-2870	22.1	0.51	22.6
AAQ8	10°48'31.11"N 77° 3'14.49"E	-4143	-765	21.9	4.63	26.5

TABLE 4.7: INCREMENTAL & RESULTANT GLC OF SO2

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline So2 ($\mu\text{g}/\text{m}^3$)	Incremental value of So2 due to mining ($\mu\text{g}/\text{m}^3$)	Total So2 ($\mu\text{g}/\text{m}^3$) (5+6)
AAQ1	10°48'54.14"N 77° 5'25.59"E	-144	-39	8.1	3.40	11.5
AAQ2	10°48'49.13"N 77° 4'48.21"E	-1284	-213	6.2	3.11	9.3
AAQ3	10°48'57.16"N 77° 7'42.37"E	4026	57	8.0	1.83	9.8
AAQ4	10°47'7.92"N 77° 3'56.51"E	-2861	-3337	8.0	0	8.0
AAQ5	10°50'33.58"N 77° 2'31.20"E	-5462	3021	8.2	0	8.2
AAQ6	10°50'48.97"N 77° 5'50.10"E	604	3497	8.1	0.61	8.7
AAQ7	10°47'22.96"N 77° 8'33.05"E	5571	-2870	8.0	0	8.0
AAQ8	10°48'31.11"N 77° 3'14.49"E	-4143	-765	7.2	2.75	10.0

TABLE 4.8: INCREMENTAL & RESULTANT GLC OF NOx

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline Nox ($\mu\text{g}/\text{m}^3$)	Incremental value of Nox due to mining ($\mu\text{g}/\text{m}^3$)	Total Nox ($\mu\text{g}/\text{m}^3$) (5+6)
AAQ1	10°48'54.14"N 77° 5'25.59"E	-144	-39	20.7	11.68	32.4
AAQ2	10°48'49.13"N 77° 4'48.21"E	-1284	-213	21.0	10.12	31.1
AAQ3	10°48'57.16"N 77° 7'42.37"E	4026	57	21.0	6.00	27.0
AAQ4	10°47'7.92"N 77° 3'56.51"E	-2861	-3337	20.5	0	20.5
AAQ5	10°50'33.58"N 77° 2'31.20"E	-5462	3021	21.5	0	21.5
AAQ6	10°50'48.97"N 77° 5'50.10"E	604	3497	20.4	0	20.4
AAQ7	10°47'22.96"N 77° 8'33.05"E	5571	-2870	22.1	0	22.1
AAQ8	10°48'31.11"N 77° 3'14.49"E	-4143	-765	21.6	0	21.6

TABLE 4.9: 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	10°48'54.14"N 77° 5'25.59"E	-144	-39	73.52	98	171.5
AAQ2	10°48'49.13"N 77° 4'48.21"E	-1284	-213	70.90	0	70.9
AAQ3	10°48'57.16"N 77° 7'42.37"E	4026	57	70.63	0	70.6
AAQ4	10°47'7.92"N 77° 3'56.51"E	-2861	-3337	67.17	0	67.2
AAQ5	10°50'33.58"N 77° 2'31.20"E	-5462	3021	74.75	0	74.8
AAQ6	10°50'48.97"N 77° 5'50.10"E	604	3497	66.74	0	66.7
AAQ7	10°47'22.96"N 77° 8'33.05"E	5571	-2870	68.29	0	68.3
AAQ8	10°48'31.11"N 77° 3'14.49"E	-4143	-765	72.47	0	72.5

From the resultant of cumulative concentration i.e., Background + Incremental Concentration of pollutant in all the receptor locations without effective mitigation measures are still within the prescribed NAAQ limits of 100, 80 & 80 $\mu\text{g}/\text{m}^3$ for PM10, SO₂ & NO_x respectively. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be further being controlled.

4.3.4. Common Mitigation Measures for Proposed Project

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

Advantages of Wet Drilling: -

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

Blasting –

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

Haul Road & Transportation –

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

Green Belt –

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

Occupational Health –

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

4.4 NOISE ENVIRONMENT

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

Predictions have been carried out to compute the noise level at various distances around the working pit due to these major noise-generating sources. Noise modelling has been carried out to assess the impact on surrounding ambient noise levels.

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

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

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

Where:

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

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

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

4.4.1 Anticipated Impact from Proposed Project

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

- Source data
- Receptor data
- Attenuation factor

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

TABLE 4.10: ACTIVITY AND NOISE LEVEL PRODUCED BY MACHINERY

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

*50 feet from source = 15.24 meters

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

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

TABLE 4.11: PREDICTED NOISE INCREMENTAL VALUES

Location ID	N1	N2	N3	N4	N5	N6	N7	N8
Maximum Monitored Value (Day) dB(A)	55.9	56.7	55.8	55.9	56.6	58.9	56.9	56.8
Incremental Value dB(A)	47.3	38.5	28.5	25.8	24.5	28.1	24.3	28.1
Total Predicted Noise level dB(A)	46.3	56.8	55.8	55.9	56.6	58.9	56.9	56.8

The incremental noise level is found within the range of 47.3 dB (A) in Core Zone and 24.3 – 38.5dB (A) in Buffer zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations 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 Common Mitigation Measures for Proposed Project

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 will be used for breaking boulders;
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will be maintained;
- 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/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise;
- Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured through training and awareness.
- Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects

4.4.3 Ground Vibrations

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

Another impact due to blasting activities is fly rocks. These may fall on the houses or agricultural fields nearby the mining lease area and may cause injury to persons or damage to the structures. Nearest habitation from the proposed project areas are listed in below table. The ground vibrations due to the blasting in the quarry are calculated using the empirical equation.

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

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

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

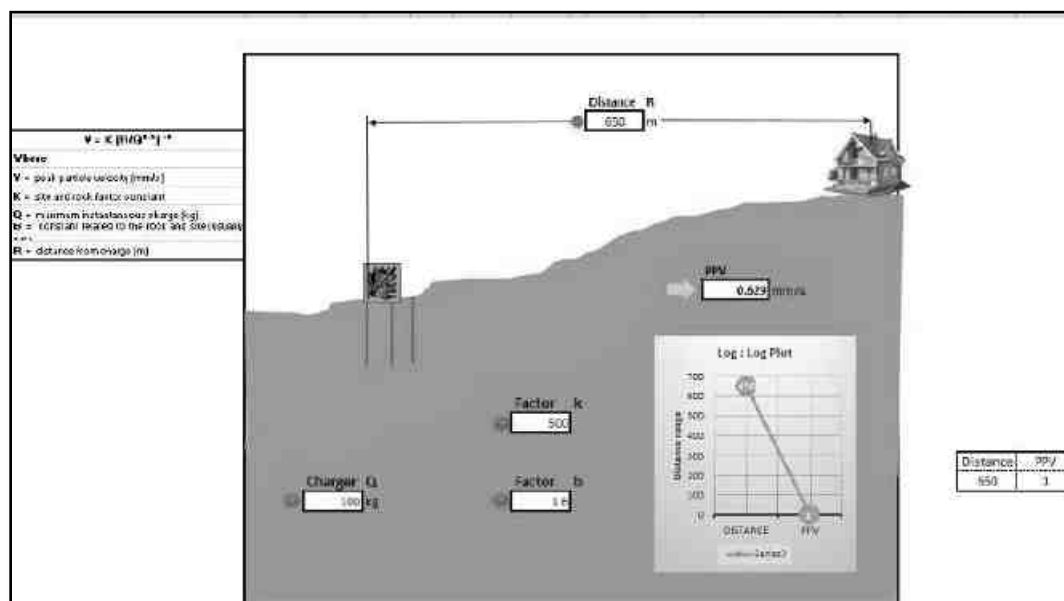
B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

TABLE 4.12: PREDICTED PPV VALUES DUE TO BLASTING

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	100	650m – SE	0.629

FIGURE 4.7: GROUND VIBRATION PREDICTION



From the above graph, the charge per blast of 100kg 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. But the all the project proponents ensure that the charge per blast shall be less than 80 kg and carry out blasting twice or thrice a day based on the onsite conditions under the supervision of competent person employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

4.4.3.1 Common Mitigation Measures for Proposed Project

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

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

4.5 ECOLOGY AND BIODIVERSITY

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

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

4.5.1. Impact Identification and Evaluation

In general, impact prediction methods argue that the foremost step in impact appraisal must consider and identify project actions that are likely to bring significant changes in the project environment. The present study determined to predict the likely impacts of the Proposed Rough stone quarry Mining Project in the surrounding environment with a specific focus on biological attributes covering habitats/ecosystems and associated biodiversity. Likely impacts identified were categorized into different levels like, direct or primary and indirect or secondary impacts based on the influence of sources of impacts. There is no National Park or Wildlife Sanctuary in the study area. In addition, No Biosphere Reserves, Wildlife corridors, or, Tiger / Elephant reserves within 10 km of the project area. No Schedule- I species were found in the buffer zone of the proposed project area during the biodiversity assessment.

4.5.2. Impact on Flora

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

4.5.2.1. Anticipated Impact on agricultural land associated with flora

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

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

4.5.3 Mitigation Measures

4.5.3.1. General Guidelines for Green Belt Development

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

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

4.5.3.2. Green Belt Development Plan

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

4.5.3.3. Proposed Green Belt

Extensive green belt development will be started during the construction phase, which will continue till the operation of the plant. About 1500-2000 trees will be planted per hectare all around the plant, approach roads, and township premises. Locally available types of trees which are resistant to pollutants will be planted. In addition to the above, all open spaces available within the premises will be developed as nursery, park, gardens and other forms of greenery. 5 m wide greenbelt will be developed along the plant premises, as per land available.

4.5.3.4. Guidelines & Techniques for Green Belt Development

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

4.5.3.5. Development of Green Belt

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

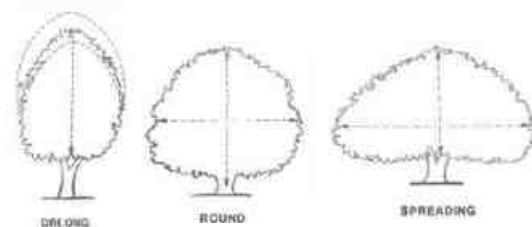
Greenbelt is a set of rows of trees planted in such a fashion, to create effective barrier between the project and surroundings. The greenbelt helps to capture the fugitive emissions, attenuate the noise levels in the existing project and simultaneously improving aesthetics of the surroundings.

4.5.3.6. Design of Green Belt

The present plan comprises the details of field investigations. Plant species for greenbelt development are selected as per CPCB guidelines. The green belt will be developed along the periphery of the Proposed Rough stone quarry. The greenbelt development plan has been formulated considering the parameters such as climate, soil types, topography, etc.

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

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



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

Table No 4.13. List of plant species proposed for Greenbelt development

S. No	Scientific name	Tamil Name
1	<i>Aegle marmelos</i>	Vilva maram
2	<i>Albizia lebbek</i>	Vaagai maram
3	<i>Cassia fistula</i>	Konrai tree
4	<i>Lannea coromandelica</i>	Othiyam
5	<i>Limonia acidissima</i>	Vila maram
6	<i>Syzygium cumini</i>	Naval maram
7	<i>Toona ciliata</i>	Santhana Vembu
8	<i>Ficus hispida</i>	Aththi maram
9	<i>Borassus flabellifer</i>	Panai-maram
10	<i>Madhuca longifolia</i>	Illupai maram

(*Source: Term of Reference-ToR)

Table No 4.14 Species suitable for abatement of noise and dust pollution

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

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

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

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

Some of the important aspects to be considered are:

- ✓ Planting of trees in each row will be in staggered orientation.
- ✓ In the front row, shrubs will be grown.
- ✓ Since the trunks of the tall trees are generally devoid of foliage, it will be useful to have shrubs in front of the trees so as to give coverage to this portion.

- ✓ The spacing between the trees will be maintained slightly less than the normal spaces, so that the trees may grow vertically and slightly increase the effective height of the green belt.

4.5.4. Anticipated Impact on Fauna

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

4.5.4.1. Measures for protection and conservation of wildlife species

- Topsoil has a large number of seeds of native plant species in the mining area.
- Topsoil will be used for restoration and suitable surfaces for planted seedlings.
- Checks and controls the movement of vehicles in and out of the mine.
- Undertaking mitigative measures for a conducive environment 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.

4.5.5. Impact on Aquatic Biodiversity

Mining activities will not disturb the aquatic ecology as there is no effluent discharge proposed from the Rough stone and gravel quarry. There is no natural perennial surface water body within the mine lease area, like wetlands, rivers streams, Odai, Vaari, Canal, Channel, lakes, ponds, tanks, and farmer sites. There are some seasonal water bodies located in the study area are given in table no.4.3. There is no impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. Aquatic biodiversity is not observed in the study area because of seasonal water bodies. There is no water during the study period.

Table No: 4.15 Nearby Water bodies

S.No	Water bodies	Distance & Direction
1	Canal	130 m SE
2	Kodavadi Odai	2 km NW
3	Canal	900 m SE
4	PAP Canal	7.5 km SE

TABLE 4.16: RECOMMENDED SPECIES FOR GREENBELT DEVELOPMENT PLAN

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

The 7.5m 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, and Casuarina will be planted along the Lease boundary and avenue plantation will be carried out in respective proposed projects. The rate of survival expected to be 80% in this area. Afforestation Plan is given in Table No.4.17 and budget of green belt development plan are given in Table No.4.18.

TABLE 4.17: GREENBELT DEVELOPMENT PLAN

PROPOSAL – P1					
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	1080	80%	Safety barrier, Village roads & Approach roads	Neem, Pongamia Pinnata, etc.,	860

TABLE 4.18: BUDGET FOR GREENBELT DEVELOPMENT PLAN

ACTIVITY		YEAR					RATE	AMOUNT (INR)
		I	II	III	IV	V		
Plantation under safety zone	Nos.	40	40	40	40	40	@100 Rs Per sapling	Rs.20,000/-
	Cost	4,000	4,000	4,000	4,000	4,000		Rs.45,000/-
Plantation in the quarried out top bench and approach road	Nos	90	90	90	90	90	@300 Rs Per Meter	Rs.1,77,000/-
	Cost	9,000	9,000	9,000	9,000	9,000		Rs.1,65,000/-
Wire Fencing (In Mtrs) 590 Mtrs		1,77,000	-	-	-	-	@300 Rs Per Meter	Rs.1,77,000/-
Garland drain (In Mtrs) 550 Mtrs		1,65,000	-	-	-	-	@300 Rs Per Meter	Rs.1,65,000/-
TOTAL								Rs.4,07,000/-

After complete extraction of mineral, the excavated pits will be allowed to collect rainwater and seepage water to serve as a reservoir to charge the nearby wells. Fish culture will also be attempted. A bund will be constructed around the pits. In order to minimize the impact of mining on the vegetation outside the mine lease area, it is recommended that adequate protection measures must be implemented. As mining involves movement of vehicles and increased anthropogenic activities, some of the areas can be fenced by involving local people and educating them about increased benefits of such activities.

4.5.6. Anticipated Impact on Fauna

- There is no Wildlife Sanctuary and Biosphere Reserve within 10 km radius of the project site.
- No rare, endemic & endangered species are reported in the buffer zone. However, during the course of mining, the management will practice scientific method of mining with proper Environmental Management Plan including pollution control measures especially for air and noise, to avoid any adverse impact on the surrounding wildlife.
- Fencing around all the proposed mine lease areas will be constructed 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.

4.5.7 Measures for protection and conservation of wildlife species

- Undertaking mitigative measures for conducive environment to the flora and fauna in consultation with Forest Department.
- Dust suppression system will be installed within mine and periphery of mine for all proposed projects
- Plantation around mine area will help in creating habitats for small faunal species and to create better environment for various fauna. Creating and developing awareness for nature and wildlife in the adjoining villages.

4.5.8 Mitigation Measures

- All the preventive measures will be taken for growth & development of fauna.
- Creating and development awareness for nature and wildlife in the adjoin 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.

4.5.9 Impact on Aquatic Biodiversity

Mining activities will not disturb the existing aquatic ecology as there is no effluent discharge proposed from the rough stone quarry. There is no natural perennial surface water body within the mine lease area. Hence, aquatic biodiversity is not observed in the mine lease area.

4.5.10. Impact Assessment on Biological Environment

A detail of impact and assessments was mentioned in Table No 4.19.

TABLE 4.19: ECOLOGICAL IMPACT ASSESSMENTS

Sl.No	Attributes	Assessment
1	Proximity to national park/wildlife sanctuary/reserve forest /mangroves/ coastline/estuary/sea	'NO'
2	Proposed mining project impact surface water quality that also provide water to wildlife	'NO' 'scheduled or threatened wildlife animal sighted regularly core in core area.
3	Located near an area populated by rare or endangered species	NO endangered, critically endangered, vulnerable species sighted in core mining lease area.
4	Proposed project restricts access to waterholes for wildlife	'NO'
5	Project likely to affect migration routes	'NO' 'migration route observed during monitoring period.
6	Proposed mining project increase siltation that would affect nearby biodiversity area.	Surface runoff management such as garland drains is proposed to be constructed, so there will be no siltation nearby mining area.
7	Risk of fall/slip or cause death to wild animals due to project activities	'NO'
8	Activities of the project affects the breeding/nesting sites of birds and animals	No breeding and nesting site was identified in mining lease site. The fauna sighted mostly migrated from buffer area.
9	Mining project effect the forest based livelihood/ any specific forest product on which local livelihood depended	'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 chances of water become polluted is low.
11	The project likely to affect wetlands, Fish breeding grounds, marine ecology	'NO'. Wetland was not present in near core Mining lease area. No breeding and nesting ground present in core mining area.
12	Project likely to affect flora of an area, which have medicinal value	'NO'
13	Forestland is to be diverted, has carbon high sequestration	'NO' 'There was no forest land diverted.

TABLE 4.20: ANTICIPATED IMPACT OF ECOLOGY AND BIODIVERSITY

Sl. 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)	Site possesses common floral (not trees) species. Clearance of these species will not result in loss of flora	Less severe	No immediate action required. However Greenbelt /plantation will be developed in project site and in periphery of the project boundary,

		Site specific loss of associated faunal diversity (Partial impact)	Site supports only common species, Which use wide variety of habitats of the buffer zone reserve forest area. So there is no threat of faunal diversity.		which will improve flora and fauna diversity of the project area.
		-Loss of Habitat (Direct impact)	Site does not form 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 generation of dust (SPM) due to haul roads and emission of SO ₂ ,NO ₂ ,CO 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 far from core area.	Less severe	All vehicles will be certified for appropriate Emission levels. More plantation have been suggested Upgrade the vehicles with alternative fuel such biodiesel, methanol and biofuel around the mining area.

4.6 SOCIO ECONOMIC

4.6.1 Anticipated Impact from Proposed Project

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

4.6.2 Common Mitigation Measures for Proposed Project

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

4.7 OCCUPATIONAL HEALTH AND SAFETY

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

- Respiratory hazards
- Noise

- Physical hazards
- Explosive storage and handling

4.7.1 Respiratory Hazards

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

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

4.7.2 Noise

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

- No employee will be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection
- The use of hearing protection will be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110 dB(A)
- Ear muffs provided will be capable of reducing sound levels at the ear to at least 85 dB(A)
- Periodic medical hearing checks will be performed on workers exposed to high noise levels

4.7.3 Physical Hazards

The following measures are proposed for control of physical hazards

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

4.7.4 Occupational Health Survey

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

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

Essential medicines will be provided at the site. The medicines and other test facilities will be provided at free of cost. The first aid box will be made available at the mine for immediate treatment.

First aid training will be imparted to the selected employees regularly. The lists of first aid trained members shall be displayed at strategic places.

4.8 MINE WASTE MANAGEMENT

No waste is anticipated from any of the proposed quarries.

4.9 MINE CLOSURE

Mine closure plan is the most important environmental requirement in 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. Therefore, progressive mine closure plan should be specifically dealt with in the mining plan and is to be reviewed along with mining plan. As progressive mine closure is a continuous series of activities, it is obvious that the proposals of scientific mining have included most of the activities to be included in the closure plan. While formulating the closure

objectives for the site, it is important to consider the existing or the pre-mining land use of the site; and how the operation will affect this activity.

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

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

4.9.1 Mine Closure Criteria

The criteria involved in mine closure are discussed below:

4.9.1.1 Physical Stability

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

4.9.1.2 Chemical Stability

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

4.9.1.3 Biological Stability

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

5. ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.0 INTRODUCTION

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

5.1 FACTORS BEHIND THE SELECTION OF PROJECT SITE

Thiru.S.Abdul Jabbar Rough Stone & gravel Quarry Project at Kurunallipalayam Village is a mining project for excavation of Rough Stone, which is site specific. The proposed mining lease areas have following advantages: -

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

5.2 ANALYSIS OF ALTERNATIVE SITE

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

5.3 FACTORS BEHIND SELECTION OF PROPOSED TECHNOLOGY

Mechanized open cast mining operation with drilling and blasting method will be used to extract Rough Stone in the area. All the applied mining lease areas have following advantages –

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

5.4 ANALYSIS OF ALTERNATIVE TECHNOLOGY

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

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 CTE/CTO.

6.1 METHODOLOGY OF MONITORING MECHANISM

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

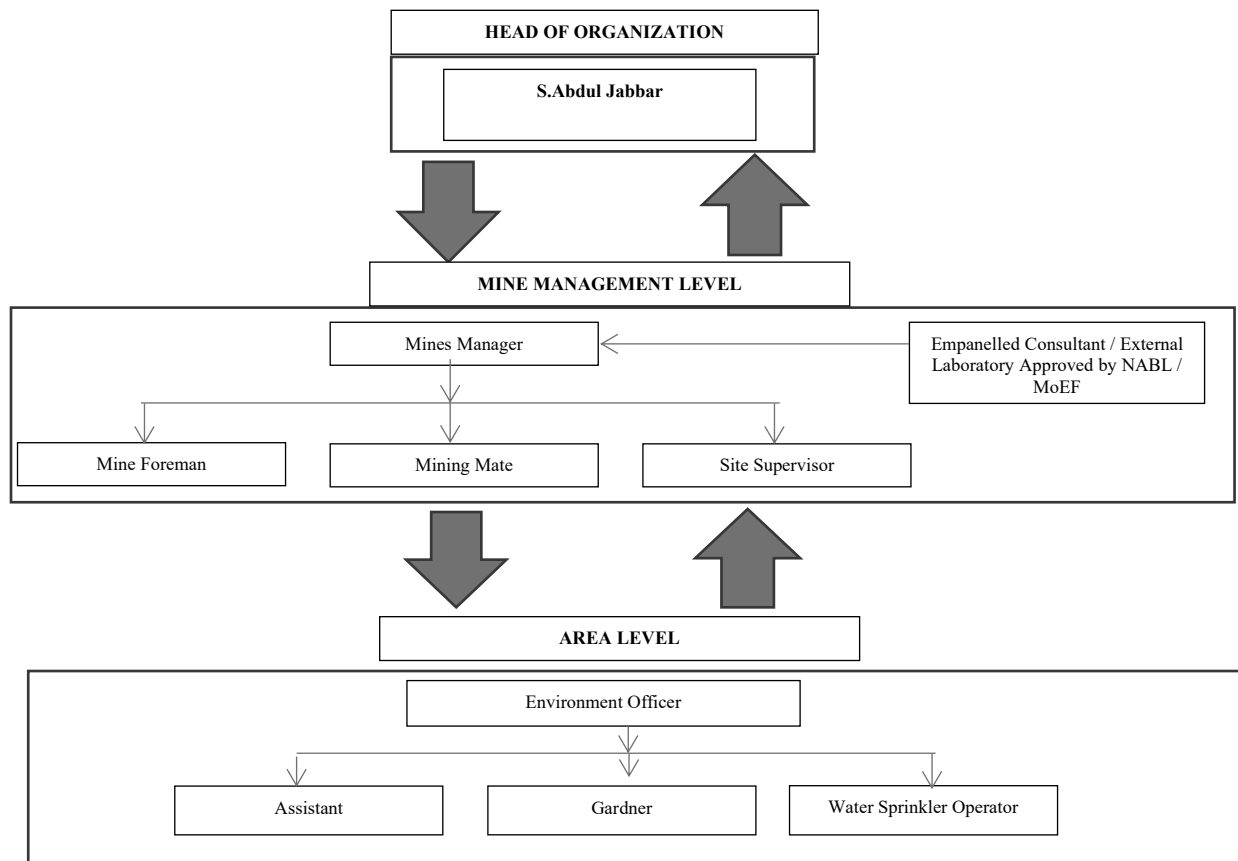
An Environment monitoring cell (EMC) will be constituted to monitor the implementation of EMP and other environmental protection measures in all the proposed quarries. The responsibilities of this cell will be:

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

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

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

FIGURE 6.1: PROPOSED ENVIRONMENTAL MONITORING CELL P1



* The Environmental Monitoring Cell will be formed in proposed project

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 FOR PROPOSED PROJECT

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

6.3 MONITORING SCHEDULE AND FREQUENCY

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 are detailed in Table 6.2

TABLE 6.2: PROPOSED MONITORING SCHEDULE POST EC FOR P1

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

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

6.4 BUDGETARY PROVISION FOR EMP

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

The proposed capital cost for Environmental Monitoring Programme is **Rs. 76,000/-** and the recurring cost is **Rs 3,80,000/-** per annum for each Proposed Project.

TABLE 6.3 ENVIRONMENT MONITORING BUDGET

PROPOSAL – P1			
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/-

Source: Approved Mining Plan

6.5 REPORTING SCHEDULES OF MONITORED DATA

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

Periodical reports to be submitted to: -

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

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

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

7. ADDITIONAL STUDIES

7.0 GENERAL

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

- Public Consultation
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Plastic Waste Management
- Post-COVID Health 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 for all proposed projects. Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening.

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

TABLE 7.1 RISK ASSESSMENT& CONTROL MEASURES

S.No	Risk factors	Causes of risk	Control measures
1	Accidents due to explosives and heavy mining machineries	Improper handling and unsafe working practice	All safety precautions and provisions of Mine Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations; Workers will be sent to the Training in the nearby Group Vocational Training Centre Entry of unauthorized persons will be prohibited; Fire-fighting and first-aid provisions in the mine office complex and mining area; Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use Working of quarry, as per approved plans and regularly updating the mine plans; Cleaning of mine faces on daily basis 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; Maintenance and testing of all mining equipment as per manufacturer's guidelines.
2	Drilling	Improper and unsafe practices	Safe operating procedure established for drilling (SOP) will be strictly followed.

		<p>Due to high pressure of compressed air, hoses may burst</p> <p>Drill Rod may break</p>	<p>Only trained operators will be deployed.</p> <p>No drilling shall be commenced in an area where shots have been fired until the blaster/blasting foreman has made a thorough Examination of all places,</p> <p>Drilling shall not be carried on simultaneously on the benches at places directly one above the other.</p> <p>Periodical preventive maintenance and replacement of worn out accessories in the compressor and drill equipment as per operator manual.</p> <p>All drills unit shall be provided with wet drilling shall be maintained in efficient working in condition.</p> <p>Operator shall regularly use all the personal protective equipment.</p>
4	Blasting	<p>Fly rock, ground vibration, Noise and dust.</p> <p>Improper charging, stemming & Blasting/fining of blast holes</p> <p>Vibration due to movement of vehicles</p>	<p>Restrict maximum charge per delay as per regulations and by optimum blast hole pattern, vibrations will be controlled within the permissible limit and blasting can be conducted safely.</p> <p>SOP for Charging, Stemming & Blasting/Firing of Blast Holes will be followed by blasting crew during initial stage of operation</p> <p>Shots are fired during daytime only.</p> <p>All holes charged on any one day shall be fired on the same day.</p> <p>The danger zone will be distinctly demarcated (by means of red flags)</p>
5	Transportation	<p>Potential hazards and unsafe workings contributing to accident and injuries</p> <p>Overloading of material</p> <p>While reversal & overtaking of vehicle</p> <p>Operator of truck leaving his cabin when it is loaded.</p>	<p>Before commencing work, drivers personally check the dumper/truck/tipper for oil(s), fuel and water levels, tyre inflation, general cleanliness and inspect the brakes, steering system, warning devices including automatically operated audio-visual reversing alarm, rear view mirrors, side indicator lights etc., are in good condition.</p> <p>Not allow any unauthorized person to ride on the vehicle nor allow any unauthorized person to operate the vehicle.</p> <p>Concave mirrors should be kept at all corners</p> <p>All vehicles should be fitted with reverse horn with one spotter at every tipping point</p> <p>Loading according to the vehicle capacity</p> <p>Periodical maintenance of vehicles as per operator manual</p>
6	Natural calamities	Unexpected happenings	<p>Escape Routes will be provided to prevent inundation of storm water</p> <p>Fire Extinguishers & Sand Buckets</p>
7	Failure of Mine Benches and Pit Slope	Slope geometry, Geological structure	Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m height.

Source: Analysed and Proposed by FAE & EC

7.3 DISASTER MANAGEMENT PLAN

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

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

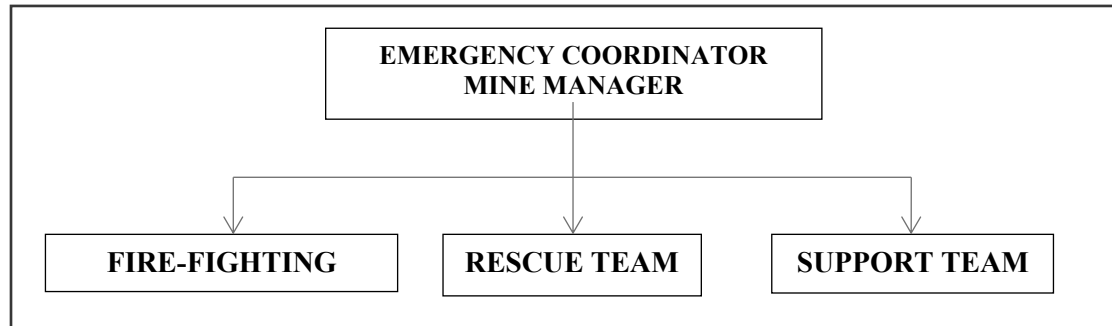
The objective of the Disaster Management Plan is to make use of the combined resources of the mine and the outside services to achieve the following:

- Rescue and medical treatment of casualties;

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

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

FIGURE 7.1: DISASTER MANAGEMENT TEAM LAYOUT FOR P1



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

TABLE 7.2: PROPOSED TEAMS TO DEAL WITH EMERGENCY SITUATION

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

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

Roles and responsibilities of emergency team –

(a) Emergency coordinator (EC)

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

(b) Incident controller (IC)

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

(c) Communication and advisory team

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

(d) Roll call coordinator

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

(e) Search and rescue team

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

(f) Emergency security controller

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

Emergency control procedure –

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

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

Proposed fire extinguishers at different locations –

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

TABLE 7.3: PROPOSED FIRE EXTINGUISHERS AT DIFFERENT LOCATIONS IN P1

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

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.
- Fire-fighting 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.
- 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

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

TABLE 7.4: LIST OF QUARRIES WITHIN 500 METER RADIUS

PROPOSED QUARRIES						
CODE	Name of the Owner	S.F. Nos & Village		Extent in Ha	Status	Remarks
P1	Thiru.S.Abdul Jabbar	44/9 (P), 45 (P), 46/1 & 47/3 (P) & Kurunallipalayam		2.16.5	Lr.No. SEIAA-TN/F.No.8763/SEA C/ToR-1100/2021 Dated: 21.03.2022	-
P2	Thiru.S.Abdul Jabbar	43/4(P), 43/5(P), 43/10, 44/6, 44/7, 44/8, 45(P), 47/1(P), 47/2(P) & Kurunallipalayam		2.80.0	Under Examination of SEIAA	
TOTAL EXTENT				4.96.5		
EXISTING QUARRY						
CODE	Name of the Owner	S.F. Nos & Village		Extent in Ha	Status	Remarks
E1	Thiru.S.Abdul Jabbar	107/1(P) & 108/1(P) & Andipalayam		1.66.0	EC obtained on 20.03.2020	-
TOTAL EXTENT				1.66.0		
EXPIRED QUARRIES						
CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status	Remarks
-	-	-	-	-	-	-
TOTAL CLUSTER EXTENT				6.62.5		

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

TABLE 7.5: SALIENT FEATURES OF PROPOSAL “P1”

Name of the Project	Thiru.S. Abdul Jabbar Rough Stone and Gravel Quarry		
Toposheet No	58-F/01		
SF.No & Extent	44/9 (P), 45 (P), 46/1 & 47/3 (P) & 2.16.5 Ha		
Mining period	Five		
Latitude between	10 ⁰ 48' 51.86" N to 10 ⁰ 49' 01.67" N		
Longitude between	77 ⁰ 05' 25.09" E to 77 ⁰ 05' 33.44" E		
Highest Elevation	355 m AMSL		
Existing Pit Dimesion	Pit – I - 71 m (L) * 53 m (W) * 6 m (D) bgl Pit – II - 62 m (L) * 46 m (W) * 1 m (D) bgl		
Proposed Depth of Mining	47 m bgl (2 m Gravel + 45 m Rough Stone)		
Geological Resources	Rough Stone in m ³	Gravel m ³	
	10,01,579	31,463	
Mineable Reserves	Rough Stone in m ³	Gravel m ³	
	3,47,734	22,478	
Yearwise production recommended in ToR	Rough Stone in m ³	Gravel m ³	Existing Gravel Dump m ³
	3,47,734	22,478	7,170
Environmental Clearance	Lr.No. SEIAA-TN/F.No.2388/EC/1(a)/1397/2014 dated: 25.06.2014		
Consent to Operate (CTO) from TNPCB	Proceedings No. F.1765CBS/RS/DEE/TNPCB/CBS/W/2017 Dated: 01/08/2017.		
Existing Dump Dimension	Dump – I - 37 m (L) * 5 m (W) * 2 m (H) - Volume – 370 m ³ Dump – II - 175 m (L) * 4 m (W) * 2 m (H) - Volume – 1400 m ³ Dump – III - 60 m (L) * 45 m (W) * 2 m (H) - Volume – 5400 m ³		
Ultimate Pit Dimension	217m (L) x 103m (W) x 47m (D) bgl		
Water Level measured in the surrounding area	65m-60m bgl		
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting		
Topography	The lease applied area is exhibits plain topography. The area has gentle sloping towards Western side. The altitude of the area is 355m (max) above mean sea level. The area is covered by 2m thickness of Gravel formation. Massive Charnockite is found after 2m of Gravel formation which is clearly inferred from the existing quarrying pit.		
Machinery proposed	Jack Hammer	8 Nos	
	Compressor	2 Nos	
	Hydraulic Excavator with Bucket and Rock breaker	2 Nos	
	Tipppers	5 Nos	
Blasting method and type of Explosives proposed	Controlled Blasting Method by shot hole drilling (30-32mm dia hole) and small dia of 25mm slurry explosive are proposed to use for winning of Rough Stone. No deep hole drilling is proposed.		
Proposed Manpower Deployment	42 Nos		
Project Cost	Rs.62,63,000/-		
CER Cost	Rs.5,00,000/-		
Nearby Water Bodies	Canal	130m SE	
	Kodavadi Odai	2km NW	
	Kothavadi Lake	2.5km SW	
	Canal	900m SE	
	PAP Canal	7.5km SE	
Greenbelt Development Plan	1200 trees will be planned in safety area, approach road and panchayat roads		
Proposed Water Requirement	5.3 KLD		
Nearest Habitation	650m SouthEast		

TABLE 7.6: SALIENT FEATURES OF PROPOSAL “P2”

Name of the Project	Thiru.S. Abdul Jabbar Rough Stone and Gravel Quarry	
Toposheet No	58-F/01	
SF.No & Extent	43/4 (P), 43/5 (P), 43/10, 44/6, 44/7, 44/8, 45 (P), 47/1 (P) & 47/2 (P) & 2.80.0 Ha	
Mining period	Five	
Latitude between	10°48'54.33"N to 10°49'00.32"N	
Longitude between	77°05'23.96"E to 77°05'31.57"E	
Highest Elevation	357 m AMSL	
Existing Pit Dimension	Pit – I - 71 m (L) * 53 m (W) * 6 m (D) bgl Pit – II - 62 m (L) * 46 m (W) * 1 m (D) bgl	
Proposed Depth of Mining	47 m bgl (2 m Gravel + 45 m Rough Stone)	
Existing Depth of Mining	22m [2m Gravel + 20m Roughstone] below ground level	
Geological Resources	Rough Stone in m ³	Gravel m ³
	12,28,985	55,416
Mineable Reserves	Rough Stone in m ³	Gravel m ³
	3,89,367	2,536
Yearwise production recommended in ToR	Rough Stone in m ³	Gravel m ³
	3,89,367	2,536
Existing Dump Dimension	182 m (L) * 118 m (W) * 22 m (H)	
Ultimate Pit Dimension	198m (L) x 127m (W) x 47m (D) bgl	
Water Level measured in the surrounding area	55m-50m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area exhibits plain terrain. The area has gentle sloping towards Southwestern side. The altitude of the area is 357m (max) above Mean sea level. The area is covered by the Gravel formation which is about 2m thickness. Massive Charnockite is found after 2m (Gravel) which is clearly inferred from the existing quarry pits.	
Machinery proposed	Jack Hammer	10 Nos
	Compressor	3 Nos
	Hydraulic Excavator with Bucket and Rock breaker	2 Nos
	Tippers	5 Nos
Blasting method and type of Explosives proposed	Controlled Blasting Method by shot hole drilling (30-32mm dia hole) and small dia of 25mm slurry explosive are proposed to use for winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	41 Nos	
Project Cost	Rs.74,42,100/-	
CER Cost	Rs.5,00,000/-	
Nearby Water Bodies	Canal	130m SE
	Kodavadi Odai	2km NW
	Kothavadi Lake	2.5km SW
	Canal	900m SE
	PAP Canal	7.5km SE
Greenbelt Development Plan	1400 trees will be planned in 7.5m safety barrier and Nearest Panchayat Roads has been identified to be utilized.	
Proposed Water Requirement	5.3 KLD	
Nearest Habitation	510 m -NW	

Source: Approved Mining Plan

TABLE 7.7: SALIENT FEATURES OF PROPOSAL “E1”

Name of the Project	Thiru.S. Abdul Jabbar, Rough Stone and Gravel Quarry
Toposheet No	58-F/01
SF.No & Extent	107/1 (P) & 108/1 (P) & 1.66.0 Ha

Mining period	Five	
Latitude between	10°48'51.68"N to 10°48'58.33"N	
Longitude between	77°05'46.64"E to 77°05'49.80"E	
Highest Elevation	372m AMSL	
Proposed Depth of Mining	32m bgl (2 m Gravel + 30 m Rough Stone)	
Geological Resources	Rough Stone in m ³	Gravel m ³
	4,90,350	32,690
Mineable Reserves	Rough Stone in m ³	Gravel m ³
	1,63,445	23,632
Yearwise production recommended in ToR	Rough Stone in m ³	Gravel m ³
	1,63,445	23,632
Environmental Clearance	Lr.No. SEIAA-TN/F.No.7059/EC/1(a)/4171/2020 dated: 20.03.2020	
Ultimate Pit Dimension	179m (L) x 68m (W) x 32m (D) bgl	
Water Level measured in the surrounding area	55m-50m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area exhibits plain topography. In this area the rock type is Charnockite with gneissic bands, this rock formation is suitable for the building construction and crushing units. The area has gentle sloping towards South West side. The altitude of the area is 372m (max) above MSL. The thickness of the Gravel formation is 2m, Massive Charnockite is found after 2m (Gravel) which is clearly inferred from the quarry pits in the vicinity of the area.	
Machinery proposed	Jack Hammer	7 Nos
	Compressor	2 Nos
	Hydraulic Excavator with Bucket and Rock breaker	1 Nos
	Tippers	3 Nos
Blasting method and type of Explosives proposed	Controlled Blasting Method by shot hole drilling (30-32mm dia hole) and small dia of 25mm slurry explosive are proposed to use for winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	28Nos	
Project Cost	Rs.49,50,000/-	
CER Cost	Rs.5,00,000/-	
Nearby Water Bodies	Canal	130m SE
	Kodavadi Odai	2km NW
	Kothavadi Lake	2.5km SW
	Canal	900m SE
	PAP Canal	7.5km SE
Greenbelt Development Plan	830 trees will be planned in 7.5m safety barrier and Nearest Panchayat Roads has been identified to be utilized.	
Proposed Water Requirement	4.26 KLD	
Nearest Habitation	255m -S	

Source: EC letter copy, PFR, Approved Mining Plan

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

Air Environment –

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

TABLE 7.8: CUMULATIVE PRODUCTION LOAD OF ROUGH STONE

Quarry	Production for five year plan period	Per Year Production in m ³	Per Day Production in m ³	Number of Lorry Load Per Day
P1	347734	69547	232	39
P2	389367	77873	260	43
Total	737101	147420	492	82
E1	163445	32689	109	18

Total	163445	32689	109	18
Grand Total	900546	180109	601	100

TABLE 7.9: CUMULATIVE PRODUCTION LOAD OF GRAVEL

Quarry	Production for five year plan period	Per Year Production in m ³	Per Day Production in m ³	Number of Lorry Load Per Day 6 m ³
P1	22478	7493	25	4
P2	2536	845	3	1 day/week
Total	2504	8338	28	4
E1	23632	7877	26	4
Total	23632	7877	26	4
Grand Total	26136	16215	54	8

On a cumulative basis considering the proposed quarries, it can be seen that the overall production of Rough Stone is 601m³ per day and overall production of Gravel is 54m³ per day with a capacity of 100trips of Rough Stone per day and 8 Trips per day of Gravel from the cluster.

Note: Per day production of Rough Stone is calculated for 5 Years Lease Period and for Gravel production with 2 or 3 years of production period. And the load of existing quarries is covered under existing environment of the cluster.

Based on the above production quantities the emissions due to various activities in all the 4 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 7.10.

TABLE 7.10: EMISSION ESTIMATION FROM QUARRIES WITHIN 500 METER RADIUS

EMISSION ESTIMATION FOR QUARRY "P1"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.095063058	g/s
	Blasting	Point Source	0.001877904	g/s
	Mineral Loading	Point Source	0.043801529	g/s
	Haul Road	Line Source	0.002495755	g/s
	Overall Mine	Area Source	0.054567507	g/s
	Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.000920934
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000045423	g/s
EMISSION ESTIMATION FOR QUARRY "P2"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.095858419	g/s
	Blasting	Point Source	0.001957788	g/s
	Mineral Loading	Point Source	0.043427702	g/s
	Haul Road	Line Source	0.002494638	g/s
	Overall Mine	Area Source	0.060289040	g/s
	Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.000887682
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000055072	g/s
EMISSION ESTIMATION FOR QUARRY "E1"				
	Activity	Source type	Value	Unit
Estimated Emission Rate for PM ₁₀	Drilling	Point Source	0.073881326	g/s
	Blasting	Point Source	0.000532461	g/s
	Mineral Loading	Point Source	0.040555766	g/s
	Haul Road	Line Source	0.002488455	g/s
	Overall Mine	Area Source	0.047721156	g/s
	Estimated Emission Rate for SO ₂	Overall Mine	Area Source	0.000417798
Estimated Emission Rate for NO _x	Overall Mine	Area Source	0.000015933	g/s

Source: Emission Calculation

TABLE 7.11: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER

PM₁₀ in µg/m³	
Background	43.8
Incremental	16.89

Resultant	60.7
NAAQ Norms	100 µg/m³
PM_{2.5} in µg/m³	
Background	22.1
Incremental	7.9
Resultant	30.0
NAAQ Norms	60 µg/ m³
So₂ in µg/m³	
Background	8.1
Incremental	3.4
Resultant	11.5
NAAQ Norms	80 µg/ m³
No₂ in µg/m³	
Background	20.7
Incremental	11.68
Resultant	32.4
NAAQ Norms	80 µg/ m³

Noise Environment –

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

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

$$L_{p2} = L_{p1} - 20 \log (r_2/r_1) - A_{e1,2}$$

Where:

L_{p1} & L_{p2} are sound levels at points located at distances r_1 & r_2 from the source.

$A_{e1,2}$ is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

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

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

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

TABLE 7.12: PREDICTED NOISE INCREMENTAL VALUES FROM CLUSTER

Location ID	Background Value (Day) dB(A)	Incremental Value dB(A)	Total Predicted dB(A)	Residential Area Standards dB(A)
Habitation Near P1	54.0	43.8	54.4	55
Habitation Near P2	52.0	45.9	53.0	
Habitation Near E1	51.2	52.0	54.6	

Source: Lab Monitoring Data

The incremental noise level is found within the range of 43.8– 52.0dB (A) in Buffer zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations near habitations are within permissible limits of Residential Area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000(The Principal Rules were published in the Gazette of India, vide S.O.123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E),dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment(Protection) Act, 1986).

Ground Vibrations

Ground vibrations due to mining activities in the all the 4 Mines within cluster are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc. However, the major source of ground vibration from the all the 4 mines is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements.

Another impact due to blasting activities is fly rocks. These may fall on the houses or agricultural fields nearby the mining areas and may cause injury to persons or damage to the structures.

Nearest Habitations from 4 mines respectively are as in below Table 7.21.

TABLE 7.13: NEAREST HABITATION FROM EACH MINE

Location ID	Distance & Direction
Habitation Near P1	650m -SE
Habitation Near P2	510m Northeast
Habitation Near E1	255m -S

The ground vibrations due to the blasting in all the mines are calculated using the empirical equation for assessment of peak particle velocity (PPV) is:

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

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

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

R = distance from charge (m)

TABLE 7.14: GROUND VIBRATIONS AT 4 MINES

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in m/ms
P1	100	650m -SE	0.629
P2	112	510m -NW	1.014
E1	47	255m- S	1.535

Source: Blasting Calculations

From the above table, the charge per blast is considered as maximum in each mine and the resultant PPV is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997.

Socio Economic Environment –

The 3 mines shall contribute towards CER and the community shall develop.

TABLE 7.15: SOCIO ECONOMIC BENEFITS FROM 3 MINES

Location ID	Project Cost	CER @ 2%
P1	Rs.62,63,000	Rs.5,00,000
P2	Rs.74,42,100	Rs.5,00,000
Total	Rs. 1,37,05,100	Rs.10,00,000
E1	Rs.49,50,000	Rs.5,00,000
Total	Rs.49,50,000	Rs.5,00,000
Grand Total	Rs. 1,86,55,100	Rs. 15,00,000

As per para 6 (II) of the office memorandum, all the mines being a green field project & Capital Investment is \leq 100 crores, they shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC.

- Proposed Projects shall fund towards CER – **Rs 10,00,000/-**
- Existing Projects shall fund towards CER – **Rs 5,00,000/-**
- Projects in Cluster shall fund towards CER – **Rs 15,00,000/-**

TABLE 7.16: EMPLOYMENT BENEFITS FROM 3 MINES

Description	Employment
P1	42
P2	41
Total	83
E1	28
Total	28
Grand Total	111

A total of 111 people will get employment due to 3 proposed and existing mine in cluster and 28 people are already employed at existing mines.

TABLE 7.17: GREENBELT DEVELOPMENT BENEFITS FROM 4 MINES

Code	No of Trees proposed to be planted	Survival %	Area	Name of the Species	No. of Trees expected to be grown
P1	1080	80%	Safety Barrier, approach roads and village roads	Neem, Pungmia Pinnata,etc.,	866
P2	1400	80%			1120
Total	2480	80%			1986
E1	830	80%			664
Total	830	80%			664
G.Total	3,310	80%		2,650	

Based on the Proposed Mining Plans it's anticipated that there shall growth of native species of Neem, Pungmia Pinnata, etc in the Cluster at a rate of 1080 Trees Planted over a period of 5 Years with Survival Rate of 80% and expected growth is around 866 Trees over an area of Safety Barrier, approach roads and village roads. in Proposed Quarry.

7.5 PLASTIC WASTE MANAGEMENT PLAN

The Project Proponent shall comply with Tamil Nadu Government Order (Ms) No. 84 Environment and Forest (EC.2) Department Dated: 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986.

Objective –

- To investigate the actual supply chain network of plastic waste.
- To identify and propose a sustainable plastic waste management by installing bins for collection of recyclables with all the plastic waste
- Preparation of a system design layout, and necessary modalities for implementation and monitoring.

TABLE 7.18: ACTION PLAN TO MANAGE PLASTIC WASTE

Sl.No.	Activity	Responsibility
1	Framing of Layout Design by incorporating provision of the Rules, user fee to be charged from waste generators for plastic waste management, penalties/fines for littering, burning plastic waste or committing any other acts of public nuisance	Mines Manager
2	Enforcing waste generators to practice segregation of bio-degradable, recyclable and domestic hazardous waste	Mines Manager
3	Collection of plastic waste	Mines Foreman
4	Setting up of Material Recovery Facilities	Mines Manager
5	Segregation of Recyclable and Non-Recyclable plastic waste at Material Recovery Facilities	Mines Foreman
6	Channelization of Recyclable Plastic Waste to registered recyclers	Mines Foreman
7	Channelization of Non-Recyclable Plastic Waste for use either in Cement kilns, in Road Construction	Mines Foreman
8	Creating awareness among all the stakeholders about their responsibility	Mines Manager
9	Surprise checking's of littering, open burning of plastic waste or committing any other acts of public nuisance	Mine Owner

Source: Proposed by FAE's and EC

8. PROJECT BENEFITS

8.0 GENERAL

Thiru.S.Abdul Jabbar for Quarrying Rough Stone and Gravel at Kurunallipalayam Village aims to produce 3,47,734 m³ Rough Stone over a period of 5 Years and 22,478 m³ for Gravel over the period of 3 years This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits

- ✚ Increase in Employment Potential
- ✚ Improvement in Socio-Economic Welfare
- ✚ Improvement in Physical Infrastructure
- ✚ Improvement in Social infrastructure

8.1 EMPLOYMENT POTENTIAL

It is proposed to provide employment to about 42 persons for carrying out mining operations and give preference to the local people in providing employment in the one proposed quarry in the cluster. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project.

8.2 SOCIO-ECONOMIC WELFARE MEASURES PROPOSED

The impact of mining activity in the area will be more positive on the socio-economic environment in the immediate project impact area. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities.

8.3 IMPROVEMENT IN PHYSICAL INFRASTRUCTURE

Thiru.S.Abdul Jabbar for Quarrying Rough Stone and Gravel at Kurunallipalayam Village, Kinathukadavu Taluk, and Coimbatore 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.,
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CORPORATE SOCIAL RESPONSIBILITY

Individual Project Proponents will take responsibility to develop awareness among all levels of their staff about CSR activities and the integration of social processes with business processes. Those involved with the undertaking of CSR activities will be provided with adequate training and re-orientation.

Under this programme, the project proponents will take-up following programmes for social and economic development of villages within 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

CSR Cost Estimation

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

CORPORATE ENVIRONMENT RESPONSIBILITY

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, the proposed project shall contribute 2% of Capital Investment towards CER as per directions of EAC/SEAC. Cumulative Capital cost is Rs.62,63,000/- and 2% of the same works out to Rs5,00,000/-

TABLE 8.1: CER – ACTION PLAN

Activity	Beneficiaries	Total
Installation of Solar lamps at Kurunallipalayam village roads	Kurunallipalayam villagers	Rs.5,00,000/-
Providing funds for improving Sanitation facilities at Kurunallipalayam village Government School	Kurunallipalayam villagers	
Providing funds for smart class facilities at Kurunallipalayam village Government School	Kurunallipalayam villagers	
TOTAL		Rs.5,00,000/-

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

9. ENVIRONMENTAL COST BENEFIT ANALYSIS

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

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

The Proponent Thiru.S. Abdul Jabbar will –

- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities
- Allocate necessary resources to ensure the implementation of the environmental policy
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts
- Implement monitoring programmes to provide early warning of any deficiency or unanticipated performance in environmental safeguards
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement.

Description of the Administration and Technical Setup –

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

The said team will be responsible for:

- Monitoring of the water/ waste water quality, air quality and solid waste generated
 - Analysis of the water and air samples collected through external laboratory
 - Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
 - Co-ordination of the environment related activities within the project as well as with outside agencies
 - Collection of health statistics of the workers and population of the surrounding villages
 - Green belt development
 - Monitoring the progress of implementation of the environmental monitoring programme
 - Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.
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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 (unutilized 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
Design vehicle wash-down areas so that all runoff water is captured and passed through oil water separators and sediment catchment devices.	Mines Manager
Refueling to be undertaken in a safe location, away from vehicle movement pathways & 100 m away of any watercourse Refueling activity to be under visual observation at all times. Drainage of refueling areas to sumps with oil/water separation	Mine Foreman & Mining Mate
Soil and groundwater testing as required following up a particular incident of contamination.	Mines Manager
At conceptual stage, the mining pits will be converted into Rain Water Harvesting. Remaining area will be converted into greenbelt area	Mines Manager
No external dumping i.e., outside the project area	Mine Foreman
Garland drains with catch pits / settlement traps to be provided all around the project area to prevent run off affecting the surrounding lands.	Mines Manager
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.3 SOIL MANAGEMENT

There is no overburden or waste anticipated from proposed project.

TABLE 10.2: PROPOSED CONTROLS FOR SOIL MANAGEMENT

CONTROL	RESPONSIBILITY
Surface run-off from the project boundary via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Mines Manager
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Mines Manager
Test soils for pH, EC, chloride, size & water holding capacity	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

10.4 WATER MANAGEMENT

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mine office.

The quarrying operation is proposed upto a depth of **47m BGL**, the water table in the area is 65m – 60m below ground level, hence the proposed projects will not intersect the Ground water table during entire quarry period.

TABLE 10.3: PROPOSED CONTROLS FOR WATER ENVIRONMENT

CONTROL	RESPONSIBILITY
To maximize the reuse of pit water for water supply	Mines Foreman
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Mines Manager
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations	Mines Manager
Ensure there is no process effluent generation or discharge from the project area into water bodies	Mines Foreman

Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Foreman
Monthly or after rainfall, inspection for performance of water management structures and systems	Mines Manager
Conduct ground water and surface water monitoring for parameters specified by CPCB	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

10.5 AIR QUALITY MANAGEMENT

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

TABLE 10.4: PROPOSED CONTROLS FOR AIR ENVIRONMENT

CONTROL	RESPONSIBILITY
Generation of dust during excavation is minimized by daily (twice) water sprinkling on working face and daily (twice) water sprinkling on haul road	Mines Manager
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself is implemented	Mines Manager
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Mines Manager
Provision of Dust Mask to all workers	Mines Manager
Greenbelt development all along the periphery of the project area	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.6 NOISE POLLUTION CONTROL

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

TABLE 10.5: PROPOSED CONTROLS FOR NOISE ENVIRONMENT

CONTROL	RESPONSIBILITY
Development of thick greenbelt all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained	Mines Manager
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Foreman
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Mines Manager
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Mining Mate
Provision of effective silencers for mining machinery and transport vehicles	Mines Manager
Provision of sound proof AC operator cabins to HEMM	Mines Manager
Sharp drill bits are used to minimize noise from drilling	Mines Foreman
Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring are carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Mines Manager
Reduce maximum instantaneous charge using delays while blasting	Mining Mate
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination	Mines Manager
Undertake noise or vibration monitoring	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.7 GROUND VIBRATION AND FLY ROCK CONTROL

The Rough stone and gravel quarry operation creates vibration due to the blasting and movement of Heavy Earth moving machineries, fly rocks due to the blasting.

TABLE 10.6: PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK

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 will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Suitable spacing and burden will be maintained to avoid misfire / fly rocks	Manager Mines
Number of blast holes will be restricted to control ground vibrations	Manager Mines
Blasting will be carried out only during noon time	Mining Mate
Undertake noise or vibration monitoring	Mines Manager
ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material	Mines Foreman

Source: Proposed by FAE's & EIA Coordinator

10.8 BIOLOGICAL ENVIRONMENT MANAGEMENT

The proponent will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,

Following control measures are proposed for its management and will be the responsibility of the Mines Manager.

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

10.8.1 Green Belt Development Plan

About 1080 nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area with survival rate 80%. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

TABLE 10.7: PROPOSED GREENBELT ACTIVITIES FOR 5 YEAR PLAN PERIOD

Year	No. of trees proposed to be planted	Area	Name of the species	Survival rate expected in %	No. of trees expected to be grown
I	1080	Safety barrier, village roads	Neem, Pongamia Pinnata, etc.,	80	866

Source: Conceptual Plan of Approved Mining plan & proposed by FAE's & EIA Coordinator

The objectives of the greenbelt development plan are –

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

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

10.8.2 Species Recommended for Plantation

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

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

TABLE 10.8: RECOMMENDED SPECIES TO PLANT IN THE GREENBELT

S.No	Botanical Name	Local Name	Importance
1.	Azadirachta indica	Neem, Vembu	Neem oil & neem products
2.	Tamarindus indica	Tamarind	Edible & Medicinal and other Uses
3.	Polyalthia longifolia	Nettilinkam	Tall and evergreen tree
4.	Borassus Flabellifer	Palmyra Palm	Tall Wind breaker tree and its fruits are edible

Source: Proposed by FAE's & EIA Coordinator

10.9 OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

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

10.9.1 Medical Surveillance and Examinations –

- 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 detailed medical examination at the time of employment. The medical examination covers the following tests under mines act 1952.

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

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

TABLE 10.9: MEDICAL EXAMINATION SCHEDULE

Sl.No	Activities	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
1	Initial Medical Examination (Mine Workers)					
A	Physical Check-up					
B	Psychological Test					
C	Audiometric Test					
D	Respiratory Test					
2	Periodical Medical Examination (Mine Workers)					
A	Physical Check – up					
B	Audiometric Test					
C	Eye Check – up					
D	Respiratory Test					
3	Medical Camp (Mine Workers & Nearby Villagers)					
4	Training (Mine Workers)					
Medical Follow ups:- Work force will be divided into three targeted groups age wise as follows:-						
Age Group	PME as per Mines Rules 1955	Special Examination				
Less than 25 years	Once in a Three Years	In case of emergencies				
Between 25 to 40 Years	Once in a Three Years	In case of emergencies				
Above 40 Years	Once in a Three Years	In case of emergencies				
Medical help on top priority immediately after diagnosis/ accident is the essence of preventive aspects.						

10.9.2 Proposed Occupational Health and Safety Measures –

- The mine site will have adequate drinking water supply so that workers do not get dehydrated.
- Lightweight and loose-fitting clothes having light colours will be preferred to wear.
- Noise exposure measurements will be taken to determine the need for noise control strategies.
- The personal protective equipment will be provided for mine workers.
- Supervisor will be instructed for reporting any problems with hearing protectors or noise control equipment.
- At noisy working activity, exposure time will be minimized.
- Dust generating sources will be identified and proper control measure will be adopted.
- Periodic medical examinations will be provided for all workers.
- Strict observance of the provisions of DGMS Acts, Rules and Regulations in respect of safety both by management and the workers.
- The width of road will be maintained more than thrice the width of the vehicle. A code of traffic rules will be implemented.
- In respect of contract work, safety code for contractors and workers will be implemented. They will be allowed to work under strict supervision of statutory person/officials only after they will impart training at vocational training centres. All personal protective equipment's will be provided to them.
- A safety committee meeting every month will be organized to discuss the safety of the mines and the persons employed.
- Celebration of annual mines safety week and environmental week in order to develop safety awareness and harmony amongst employees and co quarry owners.

FIGURE 10.1: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS

10.9.3. Health and Safety Training Programme

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

TABLE 10.10: LIST OF PERIODICAL TRAININGS PROPOSED FOR EMPLOYEES

Course	Personnel	Frequency	Duration	Instruction
New-Employee Training	All new employees 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 10.11: 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	21650	21650
	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	200000	20000
	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 - 5 Units	25000	1250
	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	43300
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	904108
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	21650	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	433000	10000
	3. Progressive Closure Activity Green belt development - 500 trees per one hectare - Proposal for 1080Trees - (590 Inside Lease Area & 550 Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendmets, transplantation of saplings @ 200 per plant (capital) for	118000	17700

		plantation inside the lease area and @ 30 per plant maintenance (recurring)		
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	165000	16500
	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	87300	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	2051631	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) - 42 Employees	168000	42000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	42000

	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	4330
	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	108250	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			2720550	2094838.4

Yearwise Break Up Cost

Year	Total Cost
1 st	Rs.4815388.4
2 nd	Rs 2199580.3
3 rd	Rs 2309559.3
4 th	Rs 2425037.3
5 th	Rs 2633589.2
Total	Rs.144 Lakhs

Cost inflation 5% per annum

Note: This Environmental Management plan cost will vary according to the public consultation comments

In order to implement the environmental protection measures, an amount of Rs.27.20 lakhs as capital cost and recurring cost as Rs. 20.94 lakhs as recurring cost is proposed considering present market price considering present market scenario for the proposed project.

10.10 CONCLUSION –

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

11. SUMMARY AND CONCLUSION

Thiru.S.Abdul Jabbar Rough Stone and Gravel Cluster (**Extent – 6.62.5 ha**) consisting of 2 Proposed, 1 Existing Quarries falls under “B” category as per MoEF & CC Notification S.O. 3977 (E).

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

The proposed projects are categorized under category “B1” Activity 1(a) (mining lease area in cluster situation) and will be considered at SEIAA – TN after conducting Public Hearing and Submission of EIA/EMP Report for Grant of Environmental Clearance. “Draft EIA report prepared on the basis of ToR Issued for carrying out public hearing for the grant of Environmental Clearance from SEIAA, Tamil Nadu”.

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

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the months October 2022 to December 2022 for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suitable mitigation measures for likely adverse impacts due to the proposed project is suggested individually for the respective proposed project under Chapter 10.

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

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

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

Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for nearly 42 people directly in the proposed projects and indirectly around 50 people.

As discussed, it is safe to say that the proposed quarries are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigate technique, as well as to serve as biological indicators for the pollutants released from the Thiru.S.Abdul Jabbar Rough Stone and Gravel Cluster Quarry (**Extent – 6.62.5ha**).

12. DISCLOSURE OF CONSULTANT

Thiru. S.Abdul Jabbar, 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 for the proposed projects.

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

DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

Declaration by experts contributing to the EIA/EMP for Thiru.S.Abdul Jabbar Rough Stone and Gravel Cluster Quarry (**Extent – 6.62.5ha**) in Kurunallipalayam Village of Kinathukadavu Taluk, Coimbatore 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:




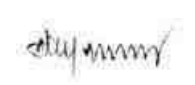

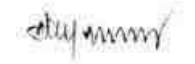














Period of Involvement: **January 2021 to till date**

Associated Team Member with EIA Coordinator:


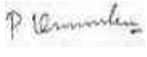


1. Mr. S. Nagamani
2. Mr.P. Viswanathan
3. Mr. M.Santhoshkumar
4. Mr. S. Ilavarasan

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. Viswathanan	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 ▪ 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 	<i>A. Allimuthu</i>
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 	<i>S. Ilavarasan</i>
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 	<i>E. Vadivel</i>
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 	<i>D. Dinesh</i>
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 	<i>P. Panneer Selvam</i>
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 	<i>T. Annappan</i>

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 Thiru.S.Abdul Jabbar Rough Stone and Gravel Cluster Quarry (**Extent – 6.62.5ha**) in Kurunallipalayam Village of Kinathukadavu Taluk, Coimbatore District of Tamil Nadu. It is also certified that information furnished in the EIA study are true and correct to the best of our knowledge.

Signature& Date:



Name:

Dr. M. Ifthikhar Ahmed

Designation:

Managing Partner

Name of the EIA Consultant Organization:

M/s. Geo Exploration and Mining Solutions

NABET Certificate No & Issue Date:

NABET/EIA/2225/RA 0276 Dated: 20-02-2023

Validity:

Valid till 06.08.2025

ANNEXURE

THIRU. S. ABDUL JABBAR ROUGH STONE AND GRAVEL QUARRY

At

Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District

Extent : 2.16.5 ha

Obtained ToR

**Lr.No. SEIAA-TN/F.No.8763/SEAC/ToR-1100/2021 Dated:
21.03.2022**

PROJECT PROPONENT

Thiru. S. Abdul Jabbar,

S/o. Shand Mohammed Rawther,

No.3/33, Vadachithur Post,

Kinathukadavu Taluk,

Coimbatore District,

Tamil Nadu State – 641 202

LIST OF ANNEXURES

THIRU. S. ABDUL JABBAR ROUGH STONE AND GRAVEL QUARRY		
Proposed Quarries		
P1 S. ABDUL JABBAR	Copy of ToR	1A-17A
	Copy of 500m Radius Letter & Pit letter	18A-19A
	Copy of Mining plan approval letter	20A-21A
	Copy of Approved Mining plan and Drawing	22A-97A
	Copy Of Additional Documents	98A-132A
	EXISTING QUARRIES	
E1 +S. ABDUL JABBAR	Copy of ToR	133A-148A
	Baseline data	149A-178A
	Copy Of NABET Certificate	179A



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

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

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.8763/SEAC/ToR-1100/2021 Dated:21.03.2022

To

Thiru S.Abdul Jabbar,
S/o. Shand Mohammed Rawther,
No.3/33, Vadachithur Post,
Kinathukadavu Taluk,
Coimbatore District– 641 202


Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with Public Hearing (ToR) for the Proposed Rough stone and Gravel for over an extent of 2.16.5ha of Patta lands in S.F.Nos.44/9 (P), 45 (P), 46/1 & 47/3 (P)of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District,Tamil Nadu by Thiru. S. Abdul Jabbar - 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/ 67101/2021, dated: 30.08.2021
 2. Your application seeking Terms of Reference submitted on: 03.09.2021
 3. Minutes of the 250th meeting of SEAC held on 03.03.2022, minutes received on 19.03.2022
 4. Minutes of the 494th meeting of SEIAA held on 21.03.2022.

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

The proponent, Thiru S.Abdul Jabbar has submitted application seeking ToR for B1 category project in Form-I, for the Proposed Rough stone and Gravel for over an extent of 2.16.5ha of Patta


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lands in S.F.Nos.44/9 (P), 45 (P), 46/1 & 47/3 (P) of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu and has furnished Pre-feasibility report.

Discussion by SEAC and the Remarks:-

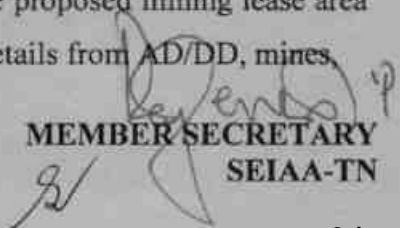
The proposal was placed in 250th SEAC meeting held on 03.03.2022. The details of the project furnished by the proponent are given in the website (parivesh.nic.in).

The SEAC noted the following:

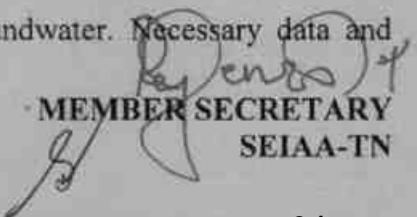
1. The Project Proponent, Thiru.Abdul Jabbar has applied for Terms for Reference for the proposed Rough stone & gravel quarry lease over an extent of 2.16.5 Ha at S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P) of Kurunallipalayam village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. The Production for the five years states that total quantity should not exceed 3,47,734 m³ of rough stone & 22,478 m³ of gravel with a ultimate depth of mining is 47m (2m Gravel + 45m Rough stone) below ground level.

Based on the presentation made by the proponent and the documents furnished, SEAC decided to **recommend the proposal for the grant of Terms of Reference (TOR) with Public Hearing for the Production for the five years states that total quantity should not exceed 3,47,734 m³ of rough stone & 22,478 m³ of gravel with a ultimate depth of mining is 47m (2m Gravel + 45m Rough stone) below ground level**, Subject to the following TORs , in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC to be included in EIA/EMP Report:

1. The Proponent shall carry out the cumulative & comprehensive impact study due to mining operations carried out in the quarry cluster specifically with reference to the environment in terms of air pollution, water pollution, & health impacts, accordingly the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
2. The project proponent shall furnish certified EC compliance report along with photographs of fencing and green belt provided to the site.
3. 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,

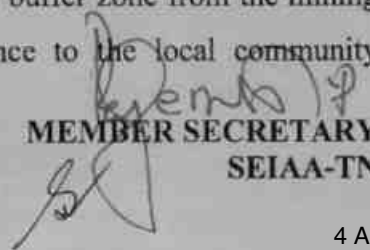

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- a) What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
 - b) Quantity of minerals mined out.
 - c) Highest production achieved in any one year
 - d) Detail of approved depth of mining.
 - e) Actual depth of the mining achieved earlier.
 - f) Name of the person already mined in that leases area.
 - g) If EC and CTO already obtained, the copy of the same shall be submitted.
 - h) Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
4. 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).
 5. 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.
 6. 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.
 7. A safety distance of 10m should be provided for the vari passing on the western and southern side of the applied area.
 8. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
 9. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and


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documentation in this regard may be provided.

10. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
11. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
12. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
13. The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.
14. The recommendation for the issue of "Terms of Reference" is subjected to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A No.186 of 2016 (M.A.No.350/2016) and O.A. No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No. 758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No.12/2017 & M.A. No. 843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No. 981/2016, M.A.No.982/2016 & M.A.No.384/2017).
15. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the **appendix** in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
16. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper spacing as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner
17. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
18. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.
19. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community


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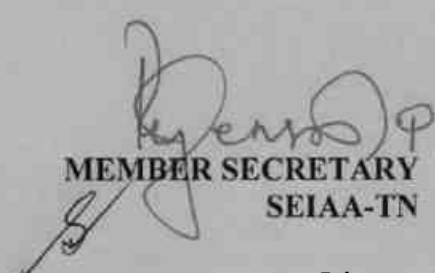
proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

20. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.
21. The PP shall use drone video to cover the cluster area showing clearly the extent of operation and the surrounding environment and submit the video as part of EIA report.
22. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.


Appendix

List of Native Trees for Planting

1. Aegle marmelos – Vilvam
2. Adenaanthera pavonina - Manjadi
3. Albizia lebbeck – Vaagai
4. Albizia amara - Usil
5. Bauhinia purpurea - Mantharai
6. Bauhinia racemosa - Aathi
7. Bauhinia tomentosa – Iruvathi
8. Buchanania aillaris - Kattuma
9. Borassus flabellifer - Panai
10. Butea monosperma - Murukka maram
11. Bobax ceiba – Ilavu, Sevvilavu
12. Calophyllum inophyllum - Punnai
13. Cassia fistula - Sarakondrai
14. Cassia roxburghii- Sengondrai
15. Chloroxylon sweitenia - Purasa maram
16. Cochlospermum religiosum – Kongu, Manjal Ilavu
17. Cordia dichotoma – Mookuchali maram
18. Creteva adansonii – Mavalingum
19. Dillenia indica – Uva, Uzha


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20. *Dillenia pentagyna* – Siru Uva, Sitruzha
21. *Diospyros ebenum* - Karungali
22. *Diospyros chloroxylon* – Vaganai
23. *Ficus amplissima* – Kal Itchi
24. *Hibiscus tiliaceous* – Aatru poovarasu
25. *Hardwickia binata* – Aacha
26. *Holoptelia integrifolia* - Aayili
27. *Lannea coromandelica* - Odhiam
28. *Lagerstroemia speciosa* - Poo Marudhu
29. *Lepisanthus tetraphylla* - Neikottai maram
30. *Limonia acidissima* - Vila maram
31. *Litsea glutinosa* –Pisin pattai
32. *Madhuca longifolia* - Illuppai
33. *Manilkara hexandra* – Ulakkai Paalai
34. *Mimusops elengi* - Magizha maram
35. *Mitragyna parvifolia* - Kadambu
36. *Morinda pubescens* – Nuna
37. *Morinda citrifolia* – Vellai Nuna
38. *Phoenix sylvestre* - Eachai
39. *Pongamia pinnata* – Pungam
40. *Premna mollissima* – Munnai
41. *Premna serratifolia* – Narumunnai
42. *Premna tomentosa* - Purangai Naari, Pudanga Naari
43. *Prosopis cinerea* - Vanni maram
44. *Pterocarpus marsupium* - Vengai
45. *Pterospermum canescens* – Vennangu, Tada
46. *Pterospermum xylocarpum* - Polavu
47. *Puthranjiva roxburghii* – Puthranjivi
48. *Salvadora persica* – Ugaa Maram
49. *Sapindus emarginatus* - Manipungan, Soapu kai
50. *Saraca asoca* - Asoca
51. *Streblus asper* - Piraya maram
52. *Strychnos nuxvomica* – Yetti


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53. Strychnos potatorum - Therthang Kottai
54. Syzygium cumini - Naval
55. Terminalia bellerica - Thandri
56. Terminalia arjuna - Ven marudhu
57. Toona ciliate – Sandhana vembu
58. Thespesia populnea - Puvarasu
59. Walsura trifoliata – valsura
60. Wrightia tinctoria - Vep

Discussion by SEIAA and the Remarks:-

The subject was placed in the 494th Authority meeting held on 21.03.2022. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal condition in addition to the following conditions:

1. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.
2. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.
3. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.
4. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
5. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
6. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
7. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.


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8. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
9. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.
10. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.
11. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.
12. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.
13. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.
14. The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.
15. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
16. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.
17. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.

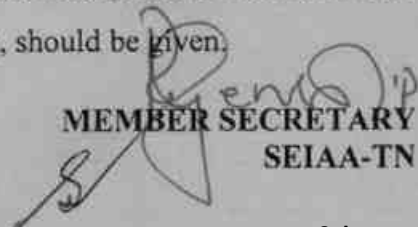
A. STANDARD TERMS OF REFERENCE

- 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

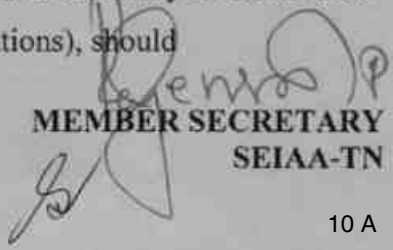

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management, mining technology etc. and should be in the name of the lessee.

- 4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- 5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- 6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- 7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
- 8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.


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- 12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should


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also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the


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map.

- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including


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action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-


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- a) Executive Summary of the EIA/EMP Report
- b) All documents to be properly referenced with index and continuous page numbering.
- c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
- d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
- e) Where the documents provided are in a language other than English, an English translation should be provided.
- f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
- g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
- h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable)).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and


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solid and hazardous wastes.

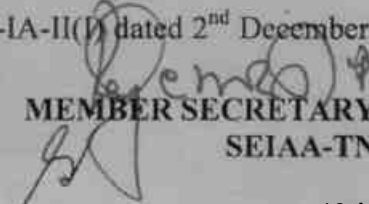
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies


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22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

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

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
- d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF & CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
- e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -11013/77/2004-IA-II(I) dated 2nd December,


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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(1)(part) dated 29th August, 2017.


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Copy to:

1. The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
4. The APCCF (C), Regional Office, MoEF & CC (SZ), 34, HEPC Building, 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, Coimbatore District.
7. Stock File.

From
Thiru.S.Rameshkumar, M.Sc.,
Assistant Director,
Dept. of Geology and Mining,
Coimbatore.

To
Thiru.Abdul Jappar,
S/o. Shand Mohammed Rawther,
3/33, Vadachithur post,
Kinathukadavu,
Coimbatore.

Rc.No.337/Mines/2020 Dated: 03.08.2021

Sir,

Sub: Mines & Minerals – Minor Mineral – Coimbatore District – Kinathukadavu Taluk – Kurunallipalayam Village – Survey Nos. 44/9 (P) (0.95.0 Hec), 45 (P) (0.45.0 Hec), 46/1 (0.46.0 Hec) & 47/3 (P) (0.30.5 Hec) -over an extent of 2.16.5 hectares of patta land -Application preferred by Thiru.Abdul Jappar for quarrying Rough stone and Gravel- Precise area communicated - Details of quarries situated within 500 meter radial distance - Requested – furnished - reg.

- Ref. 1. Assistant Director, Dept. of Geology and Mining, Coimbatore Letter Rc.No.337/Mines/2020, Dated: 08.02.2021
2. Thiru.Abdul Jappar, Coimbatore letter dated 06.05.2021.

I invite kind attention to the reference cited wherein Thiru.Abdul Jappar has been issued precise area for the grant of quarry lease for Rough Stone and Gravel over an extent of 2.16.5 hectares of patta land in Survey Nos. 44/9 (P) (0.95.0 Hec), 45 (P) (0.45.0 Hec), 46/1 (0.46.0 Hec) & 47/3 (P) (0.30.5 Hec) of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District.

In the reference 2nd cited of Thiru.Abdul Jappar has requested to furnish details of quarries situated within 500 meter radial distance from the proposed area.

In this connection the details of abandoned, expired, existing and proposed quarries situated within 500 meter radial distance from the proposed area is furnished below.

i) Existing Quarries

Sl. No.	Name of the Owner	Village & S.F.Nos.	Extent in Hect.	Lease period	Remarks
1	S.Abdul Jappar	Andipalayam 107/1(P) & 108/1 (P)	1.66.0	10.09.2020 to 09.09.2025	



ii) **Expired Quarries**

Sl. No.	Name of the Owner	Village & S.F.Nos.	Extent in Hect.	Lease period	Remarks
--NIL--					

iii) **Abandoned quarries**


Sl. No.	Name of the Owner	Village & S.F.Nos.	Extent in Hect.	Lease period	Remarks
--NIL--					

iv) **Proposed quarries**

Sl. No.	Name of the Owner	Village & S.F.Nos.	Extent in Hect.	Remarks
1	S.Abdul Jappar	Kurunallipalayam 49/9 (P), 45 (P), 46/1 & 47/3 (P)	2.16.5	Subject Area Precise area communicated
2	S.Abdul Jappar	Kurunallipalayam 43/4(P), 43/5(P), 43/10, 44/6, 44/7, 44/8, 45(P), 47/1(P), 47/2(P)	2.80.0	Subject Area Precise area communicated

v) **Future Proposed quarries**

Sl. No.	Name of the Owner	Village & S.F.Nos.	Extent in Hect.	Remarks
---NIL---				


Assistant Director,
Dept. of Geology and Mining,
Coimbatore.


3/2/24



From
Thiru.S.Rameshkumar, M.Sc.,
Assistant Director,
Dept. of Geology and Mining,
Coimbatore.

To
Thiru.AbdulJappar,
S/o. Shand Mohammed Rawther,
3/33, Vadachithur post,
Kinathukadavu,
Coimbatore

Rc.No.337/Mines/2020 Dated: 03.08.2021

Sir,

Sub: Mines & Minerals - Minor Mineral - Coimbatore District - Kinathukadavu Taluk - Kurunallipalayam Village - Survey Nos.44/9 (P) (0.95.0 Hec), 45 (P) (0.45.0 Hec), 46/1 (0.46.0 Hec)& 47/3 (P) (0.30.5 Hec)- over an extent of 2.16.5 hectares of patta land -Application preferred by Thiru.Abdul Jappar for quarrying Rough stone and Gravel- Submission of mining plan for approval - approved - regarding.

- Ref: 1. Quarry lease application dated 23.07.2020 preferred by Thiru.Abdul Jappar, Coimbatore District.
2. Assistant Director, Dept. of Geology and Mining, Coimbatore Letter Rc.No.337/Mines/2020, Dated: 08.02.2021.
3. Thiru.Abdul Jappar, Coimbatore District letter dated 06.05.2021.

In response to the precise area communicated by the Assistant Director of Geology and Mining, Coimbatore the applicant Thiru.Abdul Jappar vide reference 3rd cited has submitted three copies of mining plan for the area applied for the grant of quarry lease for Rough stone and Gravel over an extent of 2.16.5 hectares of patta land in Survey Nos.44/9 (P) (0.95.0 Hec), 45 (P) (0.45.0 Hec), 46/1 (0.46.0 Hec) & 47/3 (P) (0.30.5 Hec) of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District.


2. The mining plan submitted for the grant of quarry lease for Roughstone and Gravel over an extent of 2.16.5 hectares of patta land in Survey Nos. 44/9 (P) (0.95.0 Hec), 45 (P) (0.45.0 Hec), 46/1 (0.46.0 Hec) & 47/3 (P) (0.30.5 Hec) of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District has been verified in detail.

3. As per the guidelines/instructions issued by the Commissioner of Geology and Mining, Chennai vide letter Rc.No.3868/LC/2012, dated 19.11.2012, the mining plan is hereby approved, subject to the following conditions:



- (i) The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.
- (ii) This approval of the mining plan does not in any way imply the approval of the Government in terms or any other provisions of the Mines and Minerals (Development and Regulation) Amended Act, 2015, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Explosives Act, 1884 (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- (iii) The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- (iv) As per the Assistant Director, Dept. of Geology and Mining, Coimbatore letter Rc.No.337/Mines/2020, Dated: 08.02.2021 the following conditions have been incorporated in the Mining Plan.
- a) No hindrance should be caused to the adjacent pattadars and public
- b) A safety distance of 7.5 meters should be provided for the adjacent patta lands from the lease applied area.
- c) A safety distance of 10 meters should be provided for the vari passing on the western and southern side of the applied area.
- d) A unused EB line passing within the applied area should be shifted 50 meter away from the applied area before granting of quarry lease.
- v) Quarrying shall be done as per the approved Mining Plan and that the mining plan is approved without prejudice to any other law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.

Encl: Two copies of Approved Mining Plan.


Assistant Director,
Dept. of Geology and Mining,
Coimbatore.

Copy submitted to:
The Director of Geology and Mining, Chennai-32.


3/8/21


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3 AUG 2021

**MINING PLAN AND PROGRESSIVE QUARRY
CLOSURE PLAN FOR KURUNALLIPALAYAM
ROUGH STONE AND GRAVEL QUARRY**

(PREPARED UNDER RULES-41 & 42 AS AMENDED IN TAMILNADU MINOR MINERAL CONCESSION RULES, 1989)

Putta Lands / Lease Period = Five Years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT : 2.16.5ha
S.F.NOS : 44/9 (P), 45 (P), 46/1 & 47/3 (P)
VILLAGE : KURUNALLIPALAYAM
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMIL NADU

FOR

APPLICANT

Thiru. Abdul Jabbar,

S/o. Shand Mohammed Rawther,

No.3/33, Vadachithur Post,

Kinathukadavu Taluk, Coimbatore District,

Tamil Nadu State – 641 202.

PREPARED BY

Dr. P. Thangaraju, M.Sc., Ph.D.,

Qualified Person

Regd. Off. No.17, Advaita Ashram Road,

Alagapuram, Salem District – 636 004.

Cell: +91 94422 78601 & 94433 56539.

E-mail: infogeoexploration@gmail.com



- 3 AUG 2021

Abdul Jabbar,
S/o. Shand Mohammed Rawther,
No.3/33, Vadachithur Post,
Kinathukadavu Taluk, Coimbatore District,
Tamil Nadu State – 641 202.

CONSENT LETTER FROM APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Kurunallipalayam Rough stone and Gravel Quarry in S.F.Nos.44/9 (P), 45 (P), 46/1 & 47/3 (P) over an extent of 2.16.5ha of Patta lands in Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State has been prepared by

Dr. P. Thangaraju, M.Sc., Ph.D.,
Qualified Person

I request to the Assistant Director, Department of Geology and Mining, Coimbatore District to make further correspondence regarding the modification of the Mining Plan with the said Qualified Person at his following address.

Dr. P. Thangaraju, M.Sc., Ph.D.,
Regd. Off. No. 17,
Advaita Ashram Road,
Alagapuram, Salem District – 636 004.
Cell: +91 94422 78601 & 94433 56539.

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

Signature of the Applicant



Abdul Jabbar

Place: Coimbatore

Date: 09.02.2021



Abdul Jabbar,

S/o. Shand Mohammed Rawther,

No.3/33, Vadachithur Post,

Kinathukadavu Taluk, Coimbatore District,

Tamil Nadu State – 641 202.



DECLARATION OF THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Kurunallipalayam Rough stone and Gravel Quarry in S.F.Nos.44/9 (P), 45 (P), 46/1 & 47/3 (P) over an extent of 2.16.5ha of Patta lands in Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State has been prepared in full consultation with me.

I have understood its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to Quarry.

Signature of the Applicant

Abdul Jabbar

Place: Coimbatore

Date: 09.02.2021

-3 AUG 2021


CERTIFICATE

Certified that I am, **Dr. P. THANGARAJU, M.Sc., Ph.D.**, having an office at Regd. Off. No. 17, Advaita Ashram Road, Alagapuram, Salem District – 636 004, holding a Post Graduate Degree in Geology (M.Sc. Geology) from Madras University, Chennai and I worked in the field of Geology in a role of Geologist.

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

Accordingly, I am prepare this Mining Plan and Progressive Quarry Closure Plan in Respect of Kurunallipalayam Rough stone and Gravel Quarry in S.F.Nos.44/9 (P), 45 (P), 46/1 & 47/3 (P) over an extent of 2.16.5ha of Patta lands in Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State for **Thiru.Abdul Jabbar**, S/o.Shand Mohammed Rawther, No.3/33, Vadachithur Post, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State – 641 202. Since the Mining Plan is prepared as per the provisions contained in Rule 15(I)(a) and (I)(b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person



Dr. P. Thangaraju, M.Sc., Ph.D.,

Place: Salem

Date: 17.02.2021



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- 3 AUG 2021

Dr. P. Thangaraju, M.Sc., Ph.D.,
Regd. Off. No. 17,
Advaita Ashram Road,
Alagapuram, Salem District – 636 004.
Cell: +91 94422 78601 & 94433 56539.

CERTIFICATE FROM THE QUALIFIED PERSON


This is to certify that the Provisions of under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959 have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Kurunallipalayam Rough stone and Gravel Quarry in S.F.Nos.44/9 (P), 45 (P), 46/1 & 47/3 (P) over an extent of 2.16.5ha of Patta lands in Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State has been prepared for

Thiru.Abdul Jabbar,
S/o. Shand Mohammed Rawther,
No.3/33, Vadachithur Post,
Kinathukadavu Taluk, Coimbatore District,
Tamil Nadu State – 641 202.

Whenever specific permissions/ exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of the Assistant Director, Department of Geology and Mining, Coimbatore District, Tamil Nadu for such permissions/ exemptions/ relaxations and approvals.

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

Signature of the Qualified Person


Dr. P. Thangaraju, M.Sc., Ph.D.,

Place: Salem
Date: 17.02.2021



Dr. P. Thangaraju, M.Sc., Ph.D.,
Regd. Off. No. 17,
Advaitha Ashram Road,
Alagapuram, Salem District – 636 004.
Cell: +91 94422 78601 & 94433 56539.



CERTIFICATE FROM THE QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations and Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Kurunallipalayam Rough stone and Gravel Quarry in S.F.Nos.44/9 (P), 45 (P), 46/1 & 47/3 (P) over an extent of 2.16.5ha of Patta lands in Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State has been prepared for

Thiru.Abdul Jabbar,
S/o. Shand Mohammed Rawther,
No.3/33, Vadachithur Post,
Kinathukadavu Taluk, Coimbatore District,
Tamil Nadu State – 641 202.

Whenever specific permissions/ exemptions/ relaxations and approvals are required, the Applicant will approach the concerned authorities of Director General of Mines Safety (DGMS), No.5, II Street, Block-AA, Anna Nagar, Chennai-40, Tamil Nadu for such permissions / exemptions / relaxations and approvals.

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

Signature of the Qualified Person


Dr. P. Thangaraju, M.Sc., Ph.D.,

Place: Salem

Date: 17.02.2021



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**MINING PLAN AND PROGRESSIVE QUARRY CLOSURE PLAN FOR
KURUNALLIPALAYAM ROUGH STONE AND GRAVEL QUARRY OVER AN
EXTENT OF 2.16.5ha IN KURUNALLIPALAYAM VILLAGE,
KINATHUKADAVU TALUK, COIMBATORE DISTRICT,
TAMIL NADU STATE.**

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL
CONCESSION RULES, 1959)

1.0 INTRODUCTION AND EXECUTIVE SUMMARY

This Mining Plan and Environment Management Plan are prepared for **Thiru.Abdul Jabbar**, S/o. Shand Mohammed Rawther, residing at No.3/33, Vadachithur Post, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State – 641 202.

The applicant applied for Rough stone and Gravel quarry over an extent of 2.16.5ha of Patta lands in S.F.Nos.44/9 (P), 45 (P), 46/1 & 47/3 (P) of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State.

The application was processed by the Assistant Director, Department of Geology and Mining, Coimbatore District and passed a Precise Area Communication letter vide **Rc.No.337/Mines/2020**, **Dated: 08.02.2021** to submit Mining Plan for the approval in Department of Geology and Mining, Coimbatore District and obtain Environmental Clearance from the SEIAA, Chennai, Tamil Nadu State, with the conditions to provide:

1. No hindrance shall be caused to the adjoining Patta lands, Public, Garden road and habitation while carrying out Rough stone and Gravel quarrying operations.
2. A safety distance of 7.5 meters should be provided for the adjoining Patta lands while carrying out quarrying operations.
3. There is an unused EB (LT) line passing on the Eastern side of the lease area has to be shifted away before grant of quarry lease.
4. Quarrying should not be cut upgraded granite stones.
5. Quarrying should not be employed Child labour.

(Please refer Annexure No – I).

In order to ensure compliance of the order of the Honourable Supreme Court Dated: 27-02-2012 in I.A.No.12.13.2011 in Special Leave Petition SLP (C) No 19628-19629/2009, it has been now decided that all mining projects of minor minerals including their renewal irrespective of sizes of the lease would hence forth require prior environmental clearance mining project within the lease applied area up to less than 100ha including projects or minor mineral with lease applied area less then 5ha would be treated as category B as defined in the EIA notification 2006 and will be considered by the state notified by MoEF as prescribed procedure under EIA notification 2006.

In the above circumstances the applicant through his consultant is hereby preparing the Mining Plan, Environmental Management Plan and Progressive Quarry Closure Plan for approval and subsequent submission of Form-I, Form-IM and Pre feasibility report to obtain environmental clearance from the SEIAA, Chennai, Tamil Nadu State, Rough stone and Gravel quarry. This mining plan is prepared by considering the Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent Amendment and judgments till 24.01.2019.

Short Notes of Mining Plan:

- a. Village Panchayat - Kurunallipalayam
- b. Panchayat Union - Kinathukadavu
- c. The Geological Resources are **10,01,579m³** of Rough stone and **31,463m³** of Gravel formation in the entire area.
- d. The Total Mineable Reserves are **3,47,734m³** of Rough stone and **22,478m³** of Gravel in the entire area.
- e. The proposed quantity of reserves/ (level of production) to be mined are **3,47,734m³** of Rough stone, **22,478m³** of Gravel and **7,170m³** of Existing Gravel Dump for five years in the entire area.
- f. Total extent of the lease applied area = 2.16.5ha
- g. Topography of the area = The area exhibits plain topography
- h. Proposed Depth of mining = 47m (2m Gravel + 45m Rough stone) below ground level
- i. This Mining Plan period = Five years

- j. It is a fresh lease application but, the applied area has been considered quarrying operation earlier. The quarry lease was previously granted in the favour of **Thiru.Abdul Jabbar**, over an extent of 2.80.0hectares of Patta lands in S.F.Nos.43/4 (P), 43/5 (P), 43/10, 44/6, 44/7, 44/8 & 45 of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District vide **Rc.No.1049/2003/MM1, Dated: 11.08.2003** for the period of five years from 21.08.2003 to 20.08.2008 for quarrying of Rough stone and Gravel. The applicant was again granted to a quarry lease, over an extent of 2.80.0hectares of Patta lands in S.F.Nos.43/4 (P), 43/5 (P), 43/10, 44/6, 44/7, 44/8 & 45 of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District vide **Rc.No.1193/2008/MM2, Dated: 12.01.2009** for the period of five years from 12.01.2009 to 11.01.2014 for quarrying of Rough stone and Gravel. The applicant was once again granted to a quarry lease, over an extent of 2.80.0hectares of Patta lands in S.F.Nos.43/4 (P), 43/5 (P), 43/10, 44/6, 44/7, 44/8 (P), 45 (P), 47/1 (P) & 47/2 (P) of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District vide **Rc.No.729/2013/MM-2, Dated: 28.08.2014** for the period of five years from 28.08.2014 to 27.08.2019 for quarrying of Rough stone and Gravel. The applicant has once again applied a quarry lease on 23.07.2020, over an extent of 2.16.5hectares of Patta lands in S.F.Nos.44/9 (P), 45 (P), 46/1 & 47/3 (P) of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District for the period of five years. The application was meritoriously processed by the Assistant Director, Department of Geology and Mining, Coimbatore District and recommended the quarry lease for the period of five years. The maximum dimension of the **existing quarry pit** is given table below (Refer Plate No. II).

Pit	Length (m) (max)	Width (m) (max)	Depth (m) (max)
I	71	53	6m below ground level
II	62	46	1m below ground level

- k. Method of mining / level of mechanization.
Opencast mechanized method, the quarry operation involves shallow jack hammer drilling, slurry blasting.
- l. Type of machineries proposed in the quarrying operation is given below:
Excavators attached with rock breaker (Rental Basis).
Jack hammer, Compressor (Diesel drive) (4 Jack Hammer capacity) (Rental Basis).
- m. No trees will be uprooted due to this quarrying operation.

- n. The existing road from the main road to quarry is in good condition. The same will be maintained and utilized for Transportation of quarry materials and machineries.
- o. There is No Export of this Rough stone and Gravel.
- p. Topo sketch covering 10km and 1km radius around the proposed area with markings of habitations, water bodies including streams, rivers, roads, major structure like bridges, wells, archaeological importance, places of worships is marked and enclosed as Plate Nos. IA & IB.
- q. The lease applied area is about 2.16.5ha bounded by fifteen corners; the corners are designated as 1-15 Clockwise from the Southern corner the Co – ordinates for the all the corners are clearly marked in the Quarry Lease and Surface Plan enclosed as Plate No. II.
- r. The plans of proposed quarrying area showing the dimensions of the pit, their proposed depth and maximum area of proposed quarrying are enclosed as Plate Nos. III and IV.
- s. General conditions will not be applicable for the proposed area. The area applied for lease is 10Km away from the,
 - i) *Interstate Boundary.*
 - ii) *Protected area under wild life protection ACT, 1972,*
 - iii) *Critically polluted areas as identified by CPCB,*
 - iv) *Notified Eco sensitive areas.*
- t. There is no waste anticipated during this quarry operation. Existing Gravel Dump is proposed.
- u. Around 42 employees are deploying in the quarrying operation.
- v. Total Cost of the project is about **Rs.67,76,000/-**.
- w. Infrastructures around the lease applied area given below in the table:

TABLE-1

Particulars	Location	Approximate aerial distance and direction from lease applied area
Nearest Post Office	Kurunallipalayam	1km – Southwest
Nearest School	Vadachithur	3km – Northwest
Nearest Dispensary	Kinathukadavu	12km – Northwest
Nearest Town	Kinathukadavu	12km – Northwest
Nearest Police Station	Kinathukadavu	12km – Northwest
Nearest Hospital	Kinathukadavu	12km – Northwest
Nearest D.S.P. Office	Pollachi	20km – Souweeast
Nearest Railway Station	Kinathukadavu	12km – Northwest
Nearest Airport	Coimbatore	27km – Northwest
Nearest Seaport	Kochi	133km – Southwest
District Head quarters	Coimbatore	27km – Northwest



**2.0 GENERAL INFORMATION**

2.1 a) Name of the Applicant : Thiru.Abdul Jabbar,
S/o. Shand Mohammed Rawther,

b) Address of the Applicant (With Phone No and Aadhaar No)

Address : No.3/33, Vadachithur Post,
Kinathukadavu Taluk, Coimbatore.

Pin Code : 641 202

Mobile No : +91 98422 56677 & 85250 94054

Aadhaar No : 9677 9610 2315

Email ID : msrbluemetals@gmail.com

c) Status of the Applicant (Individual / Company / Firm):

The applicant is an Individual.

2.2 a) Mineral which the Applicant intends to mine:

The Applicant intends to quarry Rough stone and Gravel only.

b) Precise area communication letter details received from the Competent Authority of the Government:

The precise area communication letter was received from the Assistant Director, Department of Geology and Mining, Coimbatore District vide **Rc.No.337/Mines/2020, Dated: 08.02.2021** to submit approved mining plan and to obtain Environmental Clearance from the SEIAA, Chennai, Tamil Nadu State.

c) Period of permission / lease to be granted:

The applicant has applied for five years, the Assistant Director, Department of Geology and Mining, Coimbatore District has recommended for five years for Rough stone and Gravel.

d) Name and address of the Qualified Person who preparing the Mining Plan:

Name : **Dr. P. Thangaraju, M.Sc., Ph.D.,**
Qualified Person

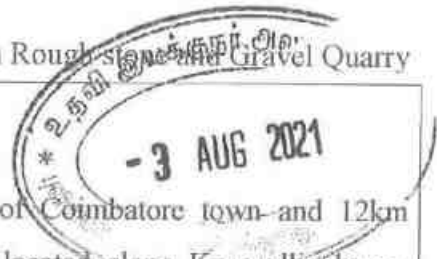
Address : Regd. Off. No. 17,
Advaita Ashram Road,
Alagapuram, Salem District – 636 004.

Telephone : 0427- 2431989 (Office)

Cell No : +91 94422 78601 & 94433 56539

Email : infogeoexploration@gmail.com

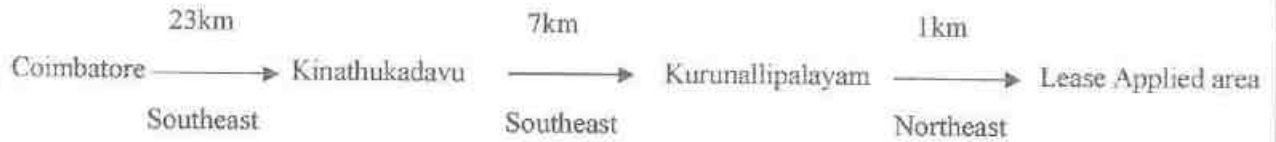
(Refer Annexure Nos. IX and X).



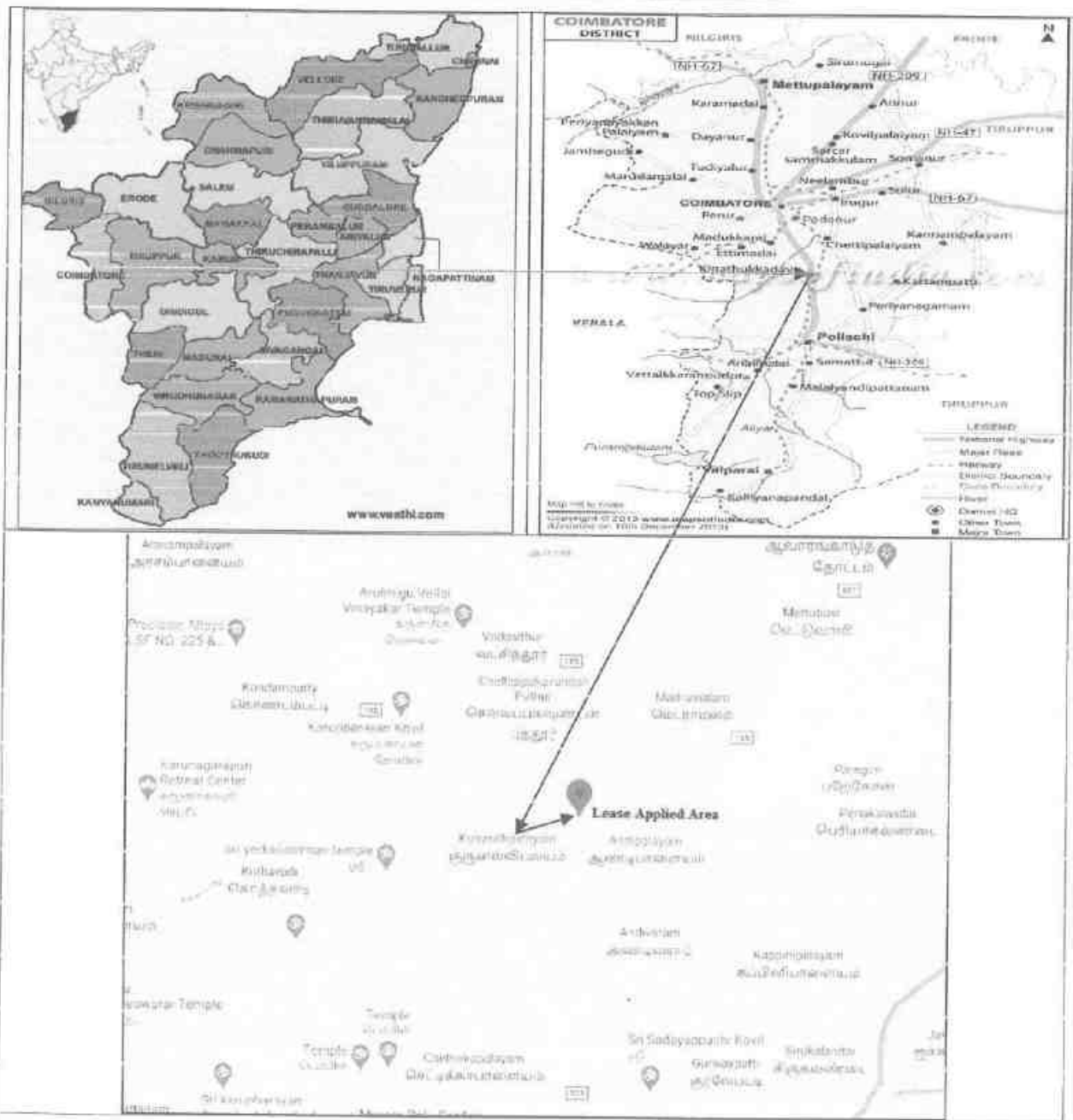
3.0 LOCATION

a) Details of the area with location map:

The lease applied area is about 27km Southeastern side of Coimbatore town and 12km Southeastern side of Kinathukadavu town, the lease applied area located along Kurunallipalayam Village at a distance of 1km Northeastern side.



Location Map of the Lease Applied Area



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TABLE-2

District	Taluk	Village	S.F. Nos.	Lease Applied Area in ha.	Patta No.
Coimbatore	Kinathukadavu	Kurunallipalayam	44/9 (P)	0.95.0	99
			45 (P)	0.45.0	680
			46/1	0.46.0	783
			47/3 (P)	0.30.5	
Total Extent				2.16.5ha	

b) Classification of the area (Ryotwari/ Poramboke / others):

It is a Patta lands (Barren land) which is not fit for vegetation/ Cultivation.

c) Ownership / Occupancy of the applied area (surface right):

It is a Patta lands. S.F.Nos.45, 46/1 & 47/3 are registered in the name of the applicant (Thiru.Abdul Jabbar), vide Patta Nos.680 & 783 and S.F.No.44/9 is registered in the name of Thiru.A.Tharik Ajees, vide Patta No.99. The applicant has obtained consent from the Pattadar. Refer Annexure Nos. IV & VII.

d) Topo sheet No. with latitude and longitude:

The lease applied area falls in the Topo sheet No: 58 - F/01 Latitude between: 10°48'51.86"N to 10°49'01.67"N and Longitude between: 77°05'25.09"E to 77°05'33.44"E on WGS datum-1984. Please refer the Plate Nos. I to II.

e) Existence of public road / Railway line, if any nearby and approximate distance:

The approach (metal) road is situated on the Western side which connects the Village Road at a distance 240m on the Northwestern side of the applied area.

Multiple road access is available from the quarry to state highways and National Highway, no villages are enrooted hence the traffic density is not much more due to the transportation of Rough stone.

The approach road from the quarry is already in existence, the same will be utilized for haulage and maintained during the entire lease period, tree sapling will be planted on the either side of the road to prevent dust and noise propagation to the nearby areas.

The Nearest Railway line is Coimbatore – Pollachi which is about 7km on the Northwestern side of the lease applied area.

PART - A

4.0 GEOLOGY AND MINERAL RESERVES

4.1 Brief description of the Topography and general Geology of the area (with plans):

The lease applied area is exhibits plain topography. The area has gentle sloping towards Western side. The altitude of the area is 355m (max) above Mean Sea level. The area is covered by 2m thickness of Gravel formation. Massive Charnockite is found after 2m (Gravel) which is clearly inferred from the existing quarry pit.

The Water table is found at a depth of 65m in summer and at 60m in rainy seasons. Average annual rainfall is about 689mm.

Topographical View of lease applied area



Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N30°E – S30°W with dipping towards SE40°.

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

AGE	FORMATION
Recent	- Quaternary Formation (Gravel)
-----Unconformity-----	
Archaean	- Charnockite Peninsular Gneiss complex

4.2 Details of exploration already carried out if any:

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

Geological Survey of India has carried out detailed mapping in Coimbatore District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. The Rough stone formation is clearly inferred from the existing quarry pit.

4.3 Estimation of Reserves:**a) Geological reserves with geological sections on a scale of 1:1000 / 1:2000**

As far as Rough stone (Charnockite) is concerned, the only practical method is the systematic geological mapping and delineation of Rough stone within the field and careful evaluation of body luster, physical properties, engineering properties and commercial aspects etc.,

Totally eight sections have been drawn, three sections are drawn Length wise as (X-Y), (X1-Y1) & (X2-Y2) and other five cross sections are drawn Width wise as (A-B), (C-D), (E-F), (G-H) & (I-J) to cover the maximum area considered for lease.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone (Charnockite) deposit has been prepared in 1:1000 scale (please refer the Geological plan and sections Plate No. III). As the sale of Rough stone is in terms of cubic meters (Volume) only and not in terms of tonnage.

Geological Resources (Plate No. III):

The Geological Resources of Rough stone and Gravel are calculated up to a maximum depth of 47m (2m Gravel + 45m Rough stone) below ground level. **The total Geological resources are calculated by sectional method and the resources are estimated after depletion of existing quarry pit.** The total available geological resources are given below:

TABLE-3

GEOLOGICAL RESOURCES						
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Geological Resources in Rough stone (m ³)	Gravel Formation (m ³)
XY-AB	I	55	91	2	-	10010
	II	55	91	5	25025	-
	III	55	91	5	25025	-
	IV	55	91	5	25025	-
	V	55	91	5	25025	-
	VI	55	91	5	25025	-
	VII	55	91	5	25025	-
	VIII	55	91	5	25025	-
	IX	55	91	5	25025	-
	X	55	91	5	25025	-
	Total					225225
XY-CD	I	47	28	1	-	1316
	I	47	52	1	-	2444
	II	47	75	5	17625	-
	III	47	75	5	17625	-
	IV	47	75	5	17625	-
	V	47	75	5	17625	-
	VI	47	75	5	17625	-
	VII	47	75	5	17625	-
	VIII	47	75	5	17625	-
	IX	47	75	5	17625	-
	X	47	75	5	17625	-
Total					158625	3760
XY-EF	I	19	10	1	-	190
	I	19	17	1	-	323
	II	19	17	4	1292	-
	II	89	63	1	5607	-
	III	89	63	5	28035	-
	IV	89	63	5	28035	-
	V	89	63	5	28035	-
	VI	89	63	5	28035	-
	VII	89	63	5	28035	-
	VIII	89	63	5	28035	-
	IX	89	63	5	28035	-
X	89	63	5	28035	-	
Total					231179	513

Mining Plan and PQCP

Kurunallipalayam Rough stone and Gravel Quarry

XY-GH	I	42	57	2	-	4788
	II	42	57	5	11970	-
	III	42	57	5	11970	-
	IV	42	57	5	11970	-
	V	42	57	5	11970	-
	VI	42	57	5	11970	-
	VII	42	57	5	11970	-
	VIII	42	57	5	11970	-
	IX	42	57	5	11970	-
	X	42	57	5	11970	-
Total					107730	4788
XIY1-GH	I	44	53	2	-	4664
	II	44	53	5	11660	-
	III	44	53	5	11660	-
	IV	44	53	5	11660	-
	V	44	53	5	11660	-
	VI	44	53	5	11660	-
	VII	44	53	5	11660	-
	VIII	44	53	5	11660	-
	IX	44	53	5	11660	-
	X	44	53	5	11660	-
Total					104940	4664
X2Y2-IJ	I	42	92	2	-	7728
	II	42	92	5	19320	-
	III	42	92	5	19320	-
	IV	42	92	5	19320	-
	V	42	92	5	19320	-
	VI	42	92	5	19320	-
	VII	42	92	5	19320	-
	VIII	42	92	5	19320	-
	IX	42	92	5	19320	-
	X	42	92	5	19320	-
Total					173880	7728
Grand Total					1001579	31463

Total Geological Resources of Gravel formation : 31,463m³

Total Geological Resources of Rough stone : 10,01,579m³

Existing Pit Dimension:

The lease applied area has been quarried in earlier the existing pits dimensions are follows:

TABLE-4

Pit	Length (m) (max)	Width (m) (max)	Depth (m) (max)
I	71	53	6m below ground level
II	62	46	1m below ground level

Existing Gravel Dump:

The lease applied area has been quarried in earlier. The existing dump Gravel dimension is follows:

TABLE-5

Dumps	Length (m) (max)	Width (m) (max)	Depth (m) (max)	Volume (m ³)
I	37	5	2m (h)	370
II	175	4	2m (h)	1400
III	60	45	2m (h)	5400
Total				7170

Available Mineable Reserves:

The available Mineable reserves are calculated after leaving the safety distance and bench loss to a maximum depth of 47m below ground level.

TABLE-6

MINEABLE RESERVES						
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Mineable Reserves in Rough stone (m ³)	Gravel (m ³)
XY-AB	I	46	82	2	-	7544
	II	43	79	5	16985	-
	III	38	74	5	14060	-
	IV	33	69	5	11385	-
	V	28	64	5	8960	-
	VI	23	59	5	6785	-
	VII	18	54	5	4860	-
	VIII	13	49	5	3185	-
	IX	8	44	5	1760	-
	X	3	39	5	585	-
Total					68565	7544
XY-CD	I	47	19	1	-	893
	I	47	43	1	-	2021
	II	47	63	5	14805	-
	III	47	58	5	13630	-
	IV	47	53	5	12455	-
	V	47	48	5	11280	-
	VI	47	43	5	10105	-
	VII	47	38	5	8930	-
	VIII	47	33	5	7755	-
	IX	47	28	5	6580	-
	X	47	23	5	5405	-
Total					90945	2914

Mining Plan and PQCP

Kurunallipalayam Rough stone and Gravel Quarry

XY-EF	I	19	8	1	-	152
	II	19	6	4	456	-
	II	89	52	1	4628	-
	III	89	47	5	20915	-
	IV	89	42	5	18690	-
	V	89	37	5	16465	-
	VI	89	32	5	14240	-
	VII	89	26	5	11570	-
	VIII	89	22	5	9790	-
	IX	84	17	5	7140	-
	X	79	12	5	4740	-
Total					108634	152
XY-GH	I	33	49	2	-	3234
	II	30	46	5	6900	-
	III	25	41	5	5125	-
	IV	20	36	5	3600	-
	V	15	31	5	2325	-
	VI	10	26	5	1300	-
	VII	5	21	5	525	-
Total					19775	3234
X1Y1-GH	I	36	53	2	-	3816
	II	33	53	5	8745	-
	III	28	53	5	7420	-
	IV	23	53	5	6095	-
	V	18	53	5	4770	-
	VI	13	53	5	3445	-
	VII	8	53	5	2120	-
	VIII	3	53	5	795	-
Total					33390	3816
X2Y2-IJ	I	33	73	2	-	4818
	II	30	67	5	10050	-
	III	25	57	5	7125	-
	IV	20	47	5	4700	-
	V	15	37	5	2775	-
	VI	10	27	5	1350	-
	VII	5	17	5	425	-
Total					26425	4818
Grand Total					347734	22478

The mineable reserves have been computed as 3,47,734m³ of Rough stone and 22,478m³ of Gravel at the rate of 100% recovery upto a maximum depth of 47m below ground level for a period of five years.

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5.0 MINING**5.1 Method of mining (opencast / underground):**

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height.

However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106 (2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with the Regulation 106 (2) (b) of MMR-1961, under Mine Act - 1952.

5.2 Mode of working (mechanized, semi mechanized, manual):

The Rough stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves shallow jack hammer drilling, slurry explosives in blasting, excavation, loading and transportation of Rough stone to the needy crusher.

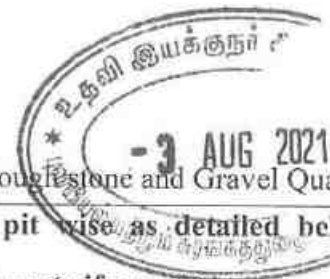
The production of Rough stone in this quarry involves the following method which is typical for Rough stone quarrying in contrast to other major mineral mining.

Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and slurry explosives blasting, hydraulic excavators are used for loading the Rough stone from pithead to the needy crushers.

Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting. The primary boulders thus splitted are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast mechanized method of mining.

5.3 Proposed Bench Height and Width:

The Charnockite is hard and compact rock, the bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height.



5.4 Indicate the overburden / mineral production expected pit wise as detailed below (composite plan and section showing pit layout, dumps, disposal of waste if any etc.):

The overburden in the form of Gravel, the Gravel will be directly loaded into tippers for the filling and levelling of low lying areas and the Gravel was dumped in Eastern side of the lease applied area, this will be transported only after obtaining permission and paying necessary seigniorage fees to the Government. The excavated Rough stone will be directly loaded into tippers to the needy customers. The Composite year wise Development and production plan and sections indicating the Pit lay out, Green belt development are shown in Plate No. III.

Year wise development and Production

TABLE-7

YEARWISE PRODUCTION DETAILS									
Years	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Recoverable Reserves in Rough stone (m ³)	Gravel (m ³)	Existing Gravel Dump (m ³)	
I	Existing Dump	I	37	5	2	-	-	370	
		II	175	4	2	-	-	1400	
	XY-AB	I	46	82	2	-	7544	-	
		II	43	79	5	16985	-	-	
		III	38	74	5	14060	-	-	
		IV	33	69	5	11385	-	-	
		V	28	64	5	8960	-	-	
	XY-CD	I	26	19	1	-	494	-	
		I	26	43	1	-	1118	-	
		II	23	63	5	7245	-	-	
		III	18	58	5	5220	-	-	
		IV	13	53	5	3445	-	-	
		V	8	48	5	1920	-	-	
		Total					69220	9156	1770
		II	Existing Dump	I	21	19	1	-	399
	I			21	43	1	-	903	-
	II			24	63	5	7560	-	-
	III			29	58	5	8410	-	-
IV	34			53	5	9010	-	-	
V	39			48	5	9360	-	-	
Existing Dump	III		60	45	2	-	-	5400	
XY-EF	I		19	8	1	-	152	-	
	II		19	6	4	456	-	-	
	II		58	52	1	3016	-	-	
	III		53	47	5	12455	-	-	
	IV		48	42	5	10080	-	-	
Total					68302	1454	5400		

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Mining Plan and PQCP

Kurunallipalayam Rough stone and Gravel Quarry

III		II	31	52	1	1612		
		III	36	47	5	8460	-	-
		IV	41	42	5	8610	-	-
		V	46	37	5	8510	-	-
	XY-GH	I	33	49	2	-	3234	-
		II	30	46	5	6900	-	-
		III	25	41	5	5125	-	-
		IV	20	36	5	3600	-	-
		V	15	31	5	2325	-	-
	X1Y1-GH	I	36	53	2	-	3816	-
		II	33	53	5	8745	-	-
		III	28	53	5	7420	-	-
		IV	23	53	5	6095	-	-
		I	33	73	2	-	4818	-
		Total				67402	11868	-
IV	X2Y2-IJ	II	30	67	5	10050	-	-
		III	25	57	5	7125	-	-
		IV	20	47	5	4700	-	-
		V	15	37	5	2775	-	-
		VI	10	27	5	1350	-	-
		VII	5	17	5	425	-	-
	X1Y1-GH	V	18	53	5	4770	-	-
		VI	13	53	5	3445	-	-
		XY-GH	VI	10	26	5	1300	-
	XY-EF	VI	89	32	5	14240	-	-
	XY-CD	VI	47	43	5	10105	-	-
		VI	23	59	5	6785	-	-
Total				67070	-	-		
V	XY-AB	VII	18	54	5	4860	-	-
		VIII	13	49	5	3185	-	-
		IX	8	44	5	1760	-	-
		X	3	39	5	585	-	-
	XY-CD	VII	47	38	5	8930	-	-
		VIII	47	33	5	7755	-	-
		IX	47	28	5	6580	-	-
		X	47	23	5	5405	-	-
	XY-EF	VII	89	26	5	11570	-	-
		VIII	89	22	5	9790	-	-
		IX	84	17	5	7140	-	-
		X	79	12	5	4740	-	-
	XY-GH	VII	5	21	5	525	-	-
	X1Y1-GH	VII	8	53	5	2120	-	-
		VIII	3	53	5	795	-	-
Total				75740	-	-		
Grand Total					347734	22478	7170	

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Mining Plan and PQCP

Kurunallipalayam Rough stone and Gravel Quarry

The Recoverable reserves have been computed as $3,47,734\text{m}^3$ of Rough stone, $22,478\text{m}^3$ of Gravel and $7,170\text{m}^3$ of Existing Gravel Dump for five years of 100% recovery upto depth of 47m below ground level for a mining period.

The applicant ensures the total quantity proposed in the benches will not exceed during the quarrying operation. Besides the Rough stone locked up in benches will be exploited after obtaining necessary permission from the office of **Director General of Mine Safety, Chennai** region by submitting relevant documents, appropriate safety plans and its Mitigation measures.

One lorry load	=	6m^3 (approx.)
Total No of Working days	=	300 Days per year
Total quantity to be removed in this five years plan period	=	$3,47,734\text{m}^3$
Hence total lorry loads per day	=	$3,47,734\text{m}^3/6\text{m}^3$
	=	57956 lorry loads
	=	57956/5 years
	=	11591/300 Days
Rough stone	=	38-39 lorry loads per day
Total quantity to be removed in this three years plan period	=	$22,478\text{m}^3$
Hence total lorry loads per day	=	$22,478\text{m}^3/6\text{m}^3$
	=	3746 lorry loads
	=	3746/3 years
	=	1249/300 Days
Gravel	=	4 lorry load per day
Total quantity to be removed in this two years plan period	=	$7,170\text{m}^3$
Hence total lorry loads per day	=	$7,170\text{m}^3/6\text{m}^3$
	=	1195 lorry loads
	=	1195/2 years
	=	598/300 Days
Existing Gravel Dump	=	1-2 lorry load per day
Working hours = 8.30 am to 5.30 pm (with 12.30-1.30 pm lunch break)		



5.5 Machineries to be used:**For Mining:**

The following machineries are utilized on rental basis for the development and production work at this quarry.

TABLE-8**I. DRILLING MACHINE:**

S. No.	Type	Nos	Dia Hole mm	Size Capacity	Motive power
1	Jack hammer	8	30-35	1.2m to 2.0m	Compressed air
2	Compressor	2	-	400 psi	Diesel Drive

II. EXCAVATION & LOADING EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Excavator with Bucket and Rock Breaker	2	300	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos	Capacity	Motive Power
1	Tippers	5	20 tonnes	Diesel Drive

5.6 Disposal of Overburden/Waste:

The overburden in the form of Gravel, the Gravel will be directly loaded into tippers for the filling and levelling of low lying areas. The excavated Rough stone (100%) will be directly loaded into tippers to the needy customers. There is no Waste anticipated during this plan period hence, disposal of waste does not arise.

5.7 Brief note on conceptual mining plan for the entire lease period base on the geological, mining and Environment considerations:

Conceptual mining plan is prepared with an object of long term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc.,

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

As the applicant has applied quarry lease for five years, the ultimate pit limit (dimension) at the end of this mining plan period is given below:

TABLE-9

Length in m (Max)	Width in m (Max)	Depth in m (Max)
217	103	47m below ground level

Greenbelt has proposed on the safety zone by planting Neem, Pongamia Pinnata, Casuarina, etc., trees of native species. All the base line information studies like Air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out every year as per the MoEF&CC Norms. Please refer Plate Nos. III & IV.

It is propose to engage any local institution to monitor the EIA and EMP during the course of quarrying operation after the grant of quarry lease.

There is no waste anticipated during the entire life of quarry. Hence, backfilling is not possible in this quarry. After completion of quarry operation, the quarry pit will be allowed to collect the seepage and rainwater, the water storage will be kept as temporary reservoir for charging the nearby wells and the storage water will be used for afforestation purpose. The quarry pit will be fenced with barbed wire fencing to prevent inadvertent entry of public and cattle (Refer Plate No. IV).

6.0 BLASTING

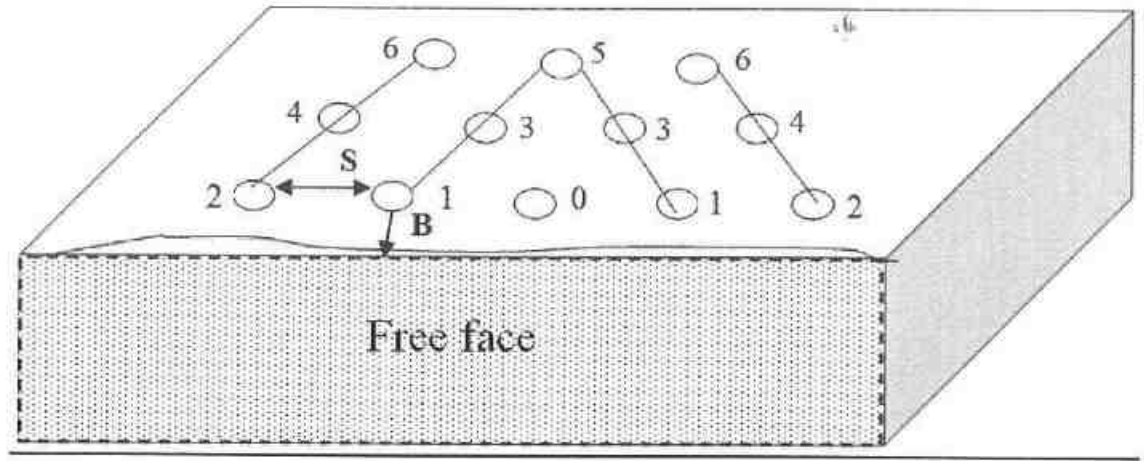
6.1 Blasting pattern:

The quarrying operation is proposed to carried out by Mechanized Opencast Method in conjunction with conventional method of mining using jack hammer drilling and slurry blasting of shattering effect for loosen the Rough stone.

Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.5m
Diameter of hole	:	30-32mm
Spacing between holes	:	1.2m
Burden for hole	:	1.0m
Pattern of hole	:	Zigzag – Multi-rows
Inclination of holes	:	80° from horizontal
Use of delay detonators	:	25millisecond relays
Detonating fuse	:	“Detonating” Cord

BLASTING PATTERN DRAWING



Staggered "V" Pattern of Blasting Design

Spacing	=	1.2m
Burden	=	1.0m
Depth of the hole	=	1.5m
No of holes proposed per day	=	202 Holes

6.2 Type of explosives to be used:

Small Dia. 25mm slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or primary blasting is proposed.

6.3 Measures proposed to minimize ground vibration due to blasting:

The quarry is situated more than 300m from the nearby villages, Controlled blasting measures is being adopt for minimizing ground vibration and fly rock.

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

Delay detonators:

Delay blasting (millisecond delays) permits to divide the shot in to smaller charges, which are detonated in a predetermined millisecond sequence at specific time intervals.

The major advantages of delay blasting are:

- Reduction of ground vibration.
- Reduction in air blast.
- Reduction in over break.
- Improved fragmentation.
- Better control of fly-rock.

Blasting program for the production per day:

No of Holes	= 202 Holes
Yield	= 606 Tons
Powder factor	= 6 Tons/Kg of explosives
Total explosive required	= 101 Kg-Slurry explosives
Charge/ hole	= 0.5 Kg
Blasting at day time only	= 12.00 – 12.30p.m (whenever required)

6.4 Storage and safety measures to be taken while blasting:

The applicant will engage authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory foreman/Permit Mines Manager. The explosives agencies should be have the valid Blaster certificate. He will blast holes in the quarry site. After the completion of Blasting the Explosives Agencies will take it out back the remaining quantity of Explosives. The magazine is available at the quarry site to temporarily store the explosives.

7.0 MINE DRAINAGE**7.1 Depth of water table (based on nearby wells and water bodies):**

The Water Table in the area is 65m in summer season and 60m in rainy season which is observed from the nearby bore wells and the data obtained from existing private boreholes. The lease area is fully covered by Massive Chamockite formation. Hence the Ground Water problem will not arise. If water seepage may occur due to the fracture, the same will be used for Greenbelt.

TABLE-10

Type	Distance & Direction	Location
Bore Well	90m Eastern side	10°48'56.45"N 77°05'36.25"E

7.2 Arrangements and places where the mine water is finally proposed to be discharged:

Quarry operations are confined well above the water table during the entire lease period. If water is encountered at due to rain water and seepage, the same will be pumped out by 5HP water pumps to the Greenbelt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

**8.0 OTHER PERMANENT STRUCTURES (also shown in the map)****8.1 Habitations/ Villages natham:**

There is no approved habitation within 300m radius from the lease applied area.

8.2 Power Lines (HT/LT):

There is an unused EB (LT) line passing on the Eastern side, the applicant should be shifted the line away from the applied area before grant of quarry lease. There is no Housing area, EB line (HT & LT Line) within the radius of 50m from the lease applied area.

8.3 Water bodies (river, ponds, lake, odai, canal, etc.):

There is no River, Pond, Lake, Odai, Canal located within 50m radius of the lease applied area.

8.4 Archaeological / historical monuments:

There is no Archacological / historical monuments within 300m radius from the lease applied area.

8.5 Road (NH, SH, others):

The Nearest National Highway (NH-209) Coimbatore – Dindigul is situated about 8km on the Northwestern side of the lease applied area.

The State Highway (SH-163) Palladam – Cochin Frontier is situated about 12km on the Northwestern side of the lease applied area.

The District Major Road (MD-165) Kinathikadavu – Kattampatti Road is situated about 2km on the Northeastern side of the lease applied area.

8.6 Places of worships:

There is no place of worships within the radius of 300m from the lease applied area.

8.7 Reserved forest / forest / social forest / wild life sanctuary etc.,:

There is no reserved forest / forest / social forest / wild life sanctuary etc., within radius of 500m of the lease applied area.

SALIENT FEATURES

S. No.	Salient Features Present around site	Prescribed safety distance	If any present within Prescribed distance it's actual distance and direction from the area		
1.	Railways, Highways, Reservoirs or Canal	50m	None of the above situated within 50m radius.		
2.	Village Road	10m	There is no village road situated within 10m radius of the area.		
3.	Habitation / Village	300m	There is no approved habitation within 300m radius from the lease applied area (Refer Plate No I-B).		
4.	Adjacent Patta lands / Govt. Land	7.5m/10m	Direction	Classification	Safety Distance
			North	Patta land	7.5m
			East	Patta land	7.5m
			South	Patta land	7.5m
			West	Patta land	7.5m
Common Boundary applicant's own lease 2.80.0ha					
			(Refer Plate No. II).		
5.	Housing area, EB line (HT & LT Line)	50m	There is an unused EB (LT) line passing on the Eastern side, the applicant should be shifted the line away from the applied area before grant of quarry lease. There is no Housing area, EB line (HT & LT Line) within the radius of 50m from the lease applied area.		
6.	Boundaries of the permitted area	7.5m/10m	The boundaries of the permitted areas is as follows: North – S.F.No.47/3 (P) East – S.F.Nos.47/4 & 46/2 South – S.F.Nos.53, 55 & 44/9 (P) West – S.F.Nos.44/6, 44/7, 44/8 & 45 (P) (Refer Plate No. II).		
7.	Reserve forest	60m	There is no reserved forest located within the radius of 60m from the lease applied area. (Refer Plate No. IA and IB).		
8.	Protected area / ECO sensitive area/Wild Life Sanctuary	10km	There is no ECO sensitive Zone/ Wild Life Sanctuary/ Critically Polluted Area/ HACA/ CRZ located within 10km radius of the area. (Refer Plate No. IA).		



9.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES

9.1 Employment potential (skilled, semi skilled, un skilled):

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

a. Skilled labour:

Mine Foreman	:	1
Blaster/mate	:	1
Excavator – Operator & Driver	:	7
Jack hammer operator	:	16

b. Semi-skilled:

Security	:	2
----------	---	---

c. Unskilled:

Labour & Helper	:	6
Co-operator and Cleaner	:	9
Total	:	42

The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations. It is been ensured that the labour will not be employed less than 18 years, **No child labour** will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the quarry lease period.

9.2 Welfare Measures:

a. Drinking Water:

Packaged drinking water is available from the nearby approved water vendors in Kurunallipalayam which is about 1km on the Southwestern side of the lease applied area.

b. Sanitary Facilities:

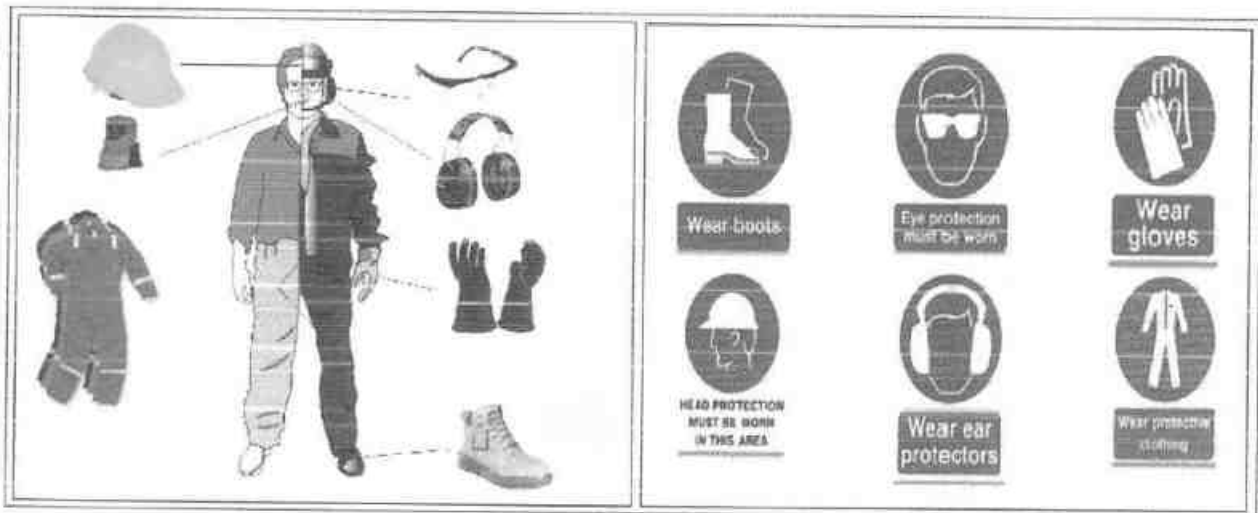
Hygienic modern Sanitary Facilities will be constructed as semi permanent structure and it will be maintained periodically as hygienic.

c. First aid facility:

First aid kits are kept in Mines office room, in case of such eventuality is the victim will be given first aid immediately at the site by the competent and statutory foreman/permit manager/mate will be in charge of first aid and injured person will be taken to the hospital by the applicant vehicle. Hospital is available in Kinathukadavu located at a distance of 8km on the Northwestern side.

d. Labour Health:

Periodically medical check-up related to occupational health safety will be conducted to all the workers in applicant own cost.

e. Precautionary safety measures to the labourers:

- Helmets,
- Mine Goggles,
- Ear plugs,
- Ear muffs,
- Dust mask,
- Reflector jackets,
- Safety Shoes

All personnel protective devices will be provided as per the specification approved by Director of mines safety. Periodically medical check-up will be conducted for all workers for any mine health related problems. Proper training and vocational education will be given by qualified and experienced safety officer to all the employees about the safety and systematic Rough stone quarrying operations. The drillers and workers will be sent for vocational training periodically, to carry out the quarrying operations scientifically and to safe guard the men and machinery and to create awareness about conventional opencast quarrying operations.

PART - B**10.0 ENVIRONMENT MANAGEMENT PLAN****10.1 Existing Land use pattern:**

The quarry lease applied area is exhibits plain topography. The area is a dry barren land devoid of Agriculture and Habitations. The lease applied area has utilized only for quarry operation in earlier.

LAND USE TABLE-11

Description	Present area in (ha)	Area at the end of this quarrying period (ha)
Area under Quarrying	0.66.9	1.80.9
Dump	0.33.8	Nil
Infrastructure	Nil	0.01.0
Roads	0.01.0	0.02.0
Green Belt	Nil	0.17.7
Unutilized Area	1.14.8	0.14.9
Grand Total	2.16.5	2.16.5






10.2 Water Regime:

It is a simple opencast quarry operation. The quality of water will not be affected due to this quarrying operation. However, mitigation measures will be carried out like Garland drains constructed on all sides of quarry pit to avoid surface run-off rain water entering into the pit.


The waste water discharged to water bodies will be met the standard prescribed under the Environment (Protection) Act – 1986 by The Ministry of Environment, Forest and Climate change.

10.3 Flora and Fauna:

TABLE-12

S.No.	Name of the plant (Scientific)	Family Name	Common Name	Habit	Picture
1.	<i>Cocos nucifera</i>	<i>Areaceae</i>	Coconut, Thennai	Tree	
2.	<i>Curcuma longa</i>	<i>Zingiberaceae</i>	Turmeric	Herb	
3.	<i>Sorghum bicolor</i>	<i>Poaceae</i>	Solam	Grass	
4.	<i>Borassus flabellifera</i>	<i>Areaceae</i>	Palmyra Palm	Tree	
5.	<i>Calotropis gigantea</i>	<i>Asclepiadaceae</i>	Crown Flower, Erukku	Shrub	

List of Fauna

S.No.	Scientific Name	Common Name	Picture
1.	<i>Egretta garzetta</i>	Little egret	
2.	<i>Boiga spp</i>	Cat snake	
3.	<i>Dicrurus macrocercus</i>	Black drongo	
4.	<i>Calotes versicolor</i>	Garden Lizard	
5.	<i>Funambulus palmarum</i>	Indian palm squirrel	
6.	<i>Hieroglyphus sp</i>	Grasshopper	

10.4 Climatic Conditions:

The area receives rainfall of about 689mm/annum and the rainy season is mainly from Oct - Dec during monsoon. The summer is hot with maximum temperature of 29°C and winter encounters a minimum temperature of 20°C.

10.5 Human settlement:

There are few villages located in this area within 5km radius; the approximate distance and population are given below:

TABLE-13

S. No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Mandrampalayam	2km – Northeast	1,200
2.	Andipalayam	2km – Southeast	3,400
3.	Kurunallipalayam	1km – Southwest	1,900
4.	Vadachithur	3km – Northwest	5,200

Basic human welfare Amenities such as Health Centre, Schools, Communication Facilities, and Commercial Centres etc., are available at Kinathukadavu located at a distance of 12km on the Northwestern side of the area.

10.6 Plan for air, dust suppression:

The air quality will be affected by the Suspended Particulate Matter (SPM) generated by the slurry blasting, jack hammer drilling, loading and unloading during the Rough stone quarry operation.

The following Mitigations measures will be carried out:

- Mist Water spraying will be carried out by means of water sprinklers to suppress the dust emission in the Haul roads.
- Vegetations will be formed on the non quarrying area.
- Avoiding spillages during the transportation.

Air quality will be monitored periodically as per Norms and Mitigative measures carried out to prevent dust and Air propagation in to air. The estimated budget for dust suppression would be around Rs.52,000/year.

**10.7 Plan for Noise level control:**

The noise level increased due to the Drilling, Blasting, Excavation and Transportation.

Engineering Noise control:

Noise will be created due to the usage of Machineries and Vehicles. The Noise will be controlled in the following manner.

- Selection of new low – noise equipment's is proposed to be deployed for the Rough stone quarry operation.
- Modifications of older equipments.
- Implementation of effective preventive maintenance which reduces noise more than 50%.
- Developing Green belts which act as Acoustic barrier, pollution absorbent and noise controller.
- The drivers will be strictly instructed to move the vehicle during the transportation not exceed 40km per hour.
- Sentries with flags & whistle will posted in village road junction and populated area to control and regulate traffic.

Shallow holes of 32mm diameter and maximum depth of 1.5m will be drilled and conventional low power explosives such as slurry explosives, ordinary safety fuse will be used for Rough stone. Hence, ground vibration and noise pollution i.e., minimal and restricted within the quarry working area.

Noise level monitoring and other Mitigation measures will be carried out to reduce Noise and Vibration. The estimated budget for Noise level monitoring would be around Rs.2,000/Year.

10.8 Environment impact assessment statement describing impact of mining on the next five years:

In the mining plan proposed for a production of Rough stone does not involve deep hole drilling and blasting. Such limited mining activity is not likely to cause any impact adversely on the environment. As far as pollution of air, water and noise concerned, the Environment impact studies will be conducted as per EIA notification issued by MoEF&CC. It is B2 Category mine. The estimated budget would be around Rs.3,80,000/-.

10.9 Proposal for waste management:

There is no waste anticipated in this Rough stone and Gravel quarrying operation. The entire quarried out materials will be utilized (100%).

10.10 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):

In the mining plan proposed only to a maximum depth of 47m below ground level has been envisaged as workable depth for safe & economic mining during entire lease applied area. There is no waste generated hence, backfilling is not possible. Hence, 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. The barbed wire fencing cost would be around **Rs.1,77,000/-**.

10.11 Programme of Greenbelt development (indicate extend, number, name of species to be afforested):

The safety zone all along the boundary barrier has been identified to be utilized for Greenbelt development. Appropriate native species of Neem, Pongamia Pinnata, Casuarina, etc., trees will be planted in a phased manner as described below.

TABLE-14

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	40	80	354	Neem, Pongamia Pinnata, Casuarina, etc.,	32
II	40	80	354		32
III	40	80	354		32
IV	40	80	354		32
V	40	80	354		32

Nearly 1,770sq.m area is proposed to use under Greenbelt by planting 40 Number of tree saplings during every year with an anticipated survival rate of 80% (Please refer Plate No. III). The estimated budget for plantation and maintenance of Greenbelt development would be around **Rs.20,000/-** for the period of five years.

The Greenbelt Development will be formed in around the quarried out top bench and approach road. The cost would be around **Rs.45,000/-**.

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

Budget Provision for the entire quarrying period:

TABLE-15

S. No	Monitory and Analysis Description	Rate per location	No. of location	Total Charges/ six months	Total Charges/ year
1	Ambient air quality monitoring	6500	4	26000	52000
2	Noise level monitoring	250	4	1000	2000
3	Ground vibration monitoring	1000	2	2000	4000
4	Water sampling and analysis	9000	1	9000	18000
Total EMP Cost/ year					76,000

The EMP cost would be around **Rs.3,80,000/-** for the period of five years.

A. Project / investment / Operational cost		
i) Land cost	<p>The Land value as per the Government Guideline land cost is calculated as follows,</p> <p>Total Extent = 2.16.5ha</p> <p>Cost per Hectare</p> <p>S.F.No.44/9 (P) : 0.95.0 x Rs.6,62,500/Ha = Rs.6,29,375/-</p> <p>S.F.Nos.45 (P), 46/1 & 47/3 (P) : 1.21.5 x Rs.8,28,000/Ha = Rs.10,06,020/-</p> <p>Total Land Cost = Rs.16,35,395/- i.e., Rs.16,36,000/-</p> <p>(source : https://tnreginet.gov.in/portal/)</p>	= Rs.16,36,000/-
ii) Machinery to be used	The following machineries are proposed to meet out the productions. Excavator attached with rock breaker, Tippers, Tractor mounted compressor with jack hammer and loose tools (Rental Basis)	= Rs.35,00,000/-
iii) Refilling/ Fencing	Fencing will be constructed around the quarry pit to prevent the inadvertent entry of public and cattles cost would be around	= Rs.1,77,000/-
iv) Labourers shed	Labour sheds will be constructed as semi permanent structure. The cost would be around	= Rs.1,30,000/-



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v) Sanitary facility	Adequate latrine and urinal accommodation shall be provided at conveniently accessible places the cost would be around	= Rs.70,000/-
vi) Others items	First aid room & accessories	= Rs.60,000/-
vii) Drinking water facility for the labourers	Packaged drinking water will be provided for all the Labours. Drinking water will be readily available at conveniently accessible points during the whole of the working shift the cost would be around	= Rs.1,85,000/-
viii) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around	= Rs.65,000/-
ix) Safety kit	All the Safety kit such as Helmet, Earmuffs, Goggles, Reflector Jackets, Safety shoes etc., will be provided to the workers by the applicant own cost which would be around	= Rs.60,000/-
x) Water sprinkling	Water will be sprinkled in the haul roads by water sprinklers the cost would be around	= Rs.1,50,000/-
xi) Garland drains Construction	Construction of garland drains to divert surface runoff from virgin area away from mining area	= Rs.1,65,000/-
xii) Greenbelt etc.	Greenbelt program will be carried out in the boundary barriers the cost would be around	= Rs.20,000/-
	Greenbelt program will be carried out in the quarried out top bench and approach road	= Rs.45,000/-
	Total Operational Cost	= Rs.62,63,000/-



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B. EMP Cost :- (Per year)	
Air Quality monitoring	Rs.52,000/-
Water Quality Sampling	Rs.18,000/-
Noise Monitoring	Rs. 2,000/-
Ground Vibration test	Rs. 4,000/-
Total Cost	Rs.76,000/-
Total EMP Cost for the five years period is Rs.3,80,000/-	
Description	Amount (Rs.)
A. Operational Cost	62,63,000
B. EMP Cost	3,80,000
Total Project Cost (A+ B)	66,43,000
The applicant indents to involve corporate environment responsibilities (CER) activity like Water Purifier and Medicine Storage rack facilities to the Dispensary and Water Purifier and Furniture facility to the nearby Govt. School at 2.0% from the total project cost. The Cost would be around Rs.1,33,000/- .	1,33,000
Total Cost	67,76,000
The Total cost would be around sixty seven lakhs and seventy six thousands only.	

11.0 PROGRESSIVE QUARRY CLOSURE PLAN**11.1 Introduction:**

The Progressive Quarry Closure Plan for Rough stone and Gravel quarry over an extent of 2.16.5ha of Patta lands in S.F.Nos.44/9 (P), 45 (P), 46/1 & 47/3 (P) of Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State has been prepared for **Thiru.Abdul Jabbar**, S/o. Shand Mohammed Rawther, residing at No.3/33, Vadachithur Post, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State – 641 202.

11.2 Present Land use pattern:**LAND USE TABLE-16**

Description	Present area in (ha)
Area under Quarrying	0.66.9
Dump	0.33.8
Infrastructure	Nil
Roads	0.01.0
Green Belt	Nil
Unutilized Area	1.14.8
Grand Total	2.16.5

11.3 Method of Mining:

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height for Rough stone.

However, as far as the quarrying of Rough stone is concerned, observance of the provisions of Regulation 106 (2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with the Regulation 106 (2) (b) of MMR-1961, under Mine Act – 1952.

11.4 Mineral Processing Operations:

The quarried out Rough stone will be transported by the 20tons capacity Tipper to the needy crushers. Splitting of rock mass of considerable volume from the parent rock mass by jack hammer drilling and blasting, hydraulic excavators are used for loading the Rough stone from pithead to the needy crushers.

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11.5 Reasons for closure:

As the mineral is not going to be exhausted during the proposed plan period no immediate closure is planned and sufficient reserves are available to carry on the activities. The reason for closure will be discussed in the ensuing mining plan.

11.6 Statutory obligations:

The applicant ensures to comply all the conditions were imposed while granting the precise area communication letter before the execution of lease deed and during the course of quarry operations.

11.7 Progressive quarry closure plan preparation:

Name and address of the 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.

Name	:	Dr. P. Thangaraju, M.Sc., Ph.D., Qualified Person
Address	:	Regd. Off. No. 17, Advaitha Ashram Road, Alagapuram, Salem District – 636 004.
Telephone	:	0427- 2431989 (Office)
Cell No	:	+91 94422 78601 & 94433 56539

Applicant will himself implement the closure plan; no outside agency will be involved.

11.8 Review of Implementation of Mining Plan including Progressive Closure Plan upto the Final Closure Plan:

There is no waste generated during entire life of quarry, hence backfilling is not possible in the quarried out pit. The entire quarry area is an active also no proposal given for Progressive quarry closure plan in the previous mining plan hence, the applicant has not taken any action for progressive quarry closure. Hence, review of implementation of progressive quarry closure does not arise at present. However, if any work done for progressive quarry closure plan during this plan period, it will be discuss in the ensuing Mining Plan.

**11.9 Closure Plan:****(i) Mined Out Land:**

At the end of mining plan period, about 1.80.9ha of area will be mined out. Land use at various stages is given in the table below:

LAND USE TABLE-17

Description	Present area in (ha)	Area at the end of this quarrying period (ha)
Area under Quarrying	0.66.9	1.80.9
Dump	0.33.8	Nil
Infrastructure	Nil	0.01.0
Roads	0.01.0	0.02.0
Green Belt	Nil	0.17.7
Unutilized Area	1.14.8	0.14.9
Grand Total	2.16.5	2.16.5

The Greenbelt Development will be formed in around the quarried out top bench and approach road of the lease applied area.

(ii) Water quality management:

Following control measures will be adopted for controlling water pollution:

- Construction of garland drains to divert surface run-off from virgin area away from mining area.
- 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.
- The quarried out pit will be allowed to collect rain and seepage water which will act as a reservoir for storage. This water storage will enhance the static level and ground water recharge of nearby wells and it will be used for agriculture purpose to the nearby agriculture lands.
- 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. Workers will be provided with personnel protective equipment like face-mask, earplug/ muffs.

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 no topsoil or waste generated during the proposed plan period. The entire quarried out Rough stone and Gravel is utilized (100%). Hence, waste management does not arise.

(v) Disposal of mining machinery:

All the machineries will be engage on rental basis. 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 work persons.
- Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- Danger signs shall be displayed near the excavations and proper signal by siren alarm will be provide before blasting time to prevent any accident.
- Security guards will be posted.
- 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 applicant to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the area may involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.
- The complete quarrying operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, TNMMCR 1959 and other laws applicable to mine will be strictly complied with.
- During heavy rainfall the mining activities will be suspended.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.
- The Greenbelt Development will be formed in around the quarried out top bench and approach road of the lease applied area.

(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.

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- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:
 - Quarry roads and approach roads,
 - Fencing on approach roads,
 - Checking and maintenance of machines and equipment,
 - Drinking water arrangements,
 - Quarry office, first aid stations etc.
- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, quarrying 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 maximum five years only. As per the production Programme envisaged, there will be no effect on the man power as the majority of persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.

(x) Time Scheduling For Abandonment:

The lease applied area has enormous potential for continuance of operations even after the expiry of the lease period. The details of time schedule of all abandonment will be given at the time of final closure plan.



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(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:

LAND USE TABLE-18

ACTIVITY		YEAR					RATE	AMOUNT (INR)
		I	II	III	IV	V		
Plantation under safety zone	Nos.	40	40	40	40	40	@100 Rs Per sapling	Rs.20,000/-
	Cost	4,000	4,000	4,000	4,000	4,000		
Plantation in the quarried out top bench and approach road	Nos	90	90	90	90	90		Rs.45,000/-
	Cost	9,000	9,000	9,000	9,000	9,000		
Wire Fencing (In Mtrs) 590 Mtrs		1,77,000	-	-	-	-	@300 Rs Per Meter	Rs.1,77,000/-
Garland drain (In Mtrs) 550 Mtrs		1,65,000	-	-	-	-	@300 Rs Per Meter	Rs.1,65,000/-
TOTAL								Rs.4,07,000/-

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12.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT

This Mining Plan for Rough stone (Charnockite) and Gravel is under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959. The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied within the quarrying operation, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety. Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the Concerned Department.

Prepared by

[Signature]
Dr. P. Thangaraju, M.Sc., Ph.D.,

Qualified Person

Place: Salem

Date: 17.02.2021



This Mining Plan is Approved
subject to the conditions / stipulation
& indicated in the Mining Plan Approval
Letter No: PC.No.331/mines/2021 dt.03.08.21
office of the A.D, Geology & Mining Coimbatore

This Mining Plan is Approved based on the incorporation of the particulars specified in the letter of the commissioner of Geology and Mining, Chennai ref No: 3103219. Dated 19.11.2012 and subjected to the fulfillment of the condition laid down under Tamilnadu Minor Mineral Concession Rules 1959.

[Signature]
ASSISTANT DIRECTOR
DEPARTMENT OF GEOLOGY & MINING
COIMBATORE DISTRICT.

[Signature]
3/8/21

[Signature]

உதவி இயக்குநர் ஆய்வுக 2021
 புவியியல் மற்றும் சுரங்கத்துறை,
 மாவட்ட ஆட்சியர் அலுவலக வளாகம்,
 கோயம்புத்தூர்

ந.க.எண்.337/கனிமம்/2020

நாள்: 08.02.2021

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - கோயம்புத்தூர் மாவட்டம் - கிணத்துக்கடவு வட்டம் - குருநல்லி பாளையம் கிராமம் - புல எண்கள்.44/9 (பகுதி)-ல் 0.95.0 ஹெக்டேர், 45 (பகுதி)-ல் 0.45.0 ஹெக்டேர், 46/1-ல் 0.46.0 ஹெக்டேர் மற்றும் 47/3 (பகுதி)-ல் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் திரு.அப்துல்ஜப்பார் என்பவருக்கு - சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க குவாரி குத்தகை அனுமதி வழங்குவது - தொடர்பாக.

- பார்வை: 1. திரு.அப்துல்ஜப்பார், த/பெ.சாந்துமுகமது ராவுத்தர் 3/33, வடசித்தூர் அஞ்சல், கிணத்துக்கடவு வட்டம், கோயம்புத்தூர் மாவட்டம் என்பவரது விண்ணப்பம் நாள்.23.07.2020
2. இவ்வலுவலக கடிதம் இதே எண். நாள்: 24.07.2020
3. சார் ஆட்சியர், பொள்ளாச்சி அவர்களின் கடித ந.க.எண். 1467/2020/அ2 நாள் 14.10.2020.
4. உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, கோயம்புத்தூர் தணிக்கை அறிக்கை நாள்.28.01.2021
5. இயக்குநர், புவியியல் மற்றும் சுரங்கத்துறை, சென்னை கடிதம் எண். 1870/எம்.எம்-1/2020 நாள்: 12.08.2020.

பார்வை 1-ல் கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், 3/33-வடசித்தூர் அஞ்சல் என்ற முகவரியில் வசிக்கும் திரு.சாந்துமுகம்மது ராவுத்தர் மகன் திரு.S.அப்துல் ஜப்பார் என்பவர் கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண்கள்.44/9 (பகுதி)-ல் 0.95.0 ஹெக்டேர், 45 (பகுதி)-ல் 0.45.0 ஹெக்டேர், 46/1-ல் 0.46.0 ஹெக்டேர் மற்றும் 47/3 (பகுதி)-ல் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரணகற்கள் மற்றும் கிராவல் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோரி உரிய ஆவணங்களுடன் விண்ணப்பித்துள்ளார்.

மேற்படி மனு தொடர்பாக பொள்ளாச்சி சார் ஆட்சியர் மற்றும் கோயம்புத்தூர் புவியியல் மற்றும் சுரங்கத்துறை உதவி புவியியலாளர் ஆகியோர் புலத்தணிக்கை மேற்கொண்டு கோயம்புத்தூர் மாவட்டம்,



உதவி இயக்குநர்
31 AUG 2021

கிணத்துக்கடவு வட்டம், 3/33-வடசித்தூர் அஞ்சல் என்ற முகவரியில் வசிக்கும் திரு.சாந்து முகம்மது ராவுத்தர் மகன் திரு.S.அப்துல் ஜப்பார் என்பவருக்கு கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண்கள்.44/9 (பகுதி)-ல் 0.95.0 ஹெக்டேர், 45 (பகுதி)-ல் 0.45.0 ஹெக்டேர், 46/1-ல் 0.46.0 ஹெக்டேர் மற்றும் 47/3 (பகுதி)-ல் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரணகற்கள் மற்றும் கிராவல் வெட்டியெடுக்க சில நிபந்தனைகளுடன் பரிந்துரை செய்துள்ளார்கள்.

அனுமதி கோரும் புல எண். 44/9 ஆனது பட்டா எண். 99-ன் படி ஜப்பார் என்கிற அப்துல் ஜப்பார் மகன் தாரிக் அஜுஸ் என்ற பெயரில் தனிபட்டாவாகவும், புல எண்கள்.45, 46/1 மற்றும் 47/3 ஆனது பட்டா எண்கள் முறையே 680 மற்றும் 783-ன் படி மனுதாரர் எஸ்.அப்துல் ஜப்பார் என்ற பெயரில் தனிபட்டாவாகவும் கிராம கணக்கில் தாக்கலாகியுள்ளது. புல எண்.44/9-ன் பட்டாதாரர் தாரிக் அஜுஸ் என்பவர் மேற்படி பூமியில் திரு.அப்துல் ஜப்பார் (மனுதாரர்) என்பவருக்கு குத்தகை உரிமம் வழங்க சம்மத கடிதம் அளித்துள்ளார். எனவே மனுதாரர் மேற்படி நிலங்களில் குவாரி குத்தகை உரிமம் பெற தகுதியுடையவர் ஆவார்.

எனவே, பொள்ளாச்சி சார் ஆட்சியர் மற்றும் உதவி புவியியலாளர், புவியியல் மற்றும் சுரங்கத்துறை, கோயம்புத்தூர் ஆகியோரின் பரிந்துரைகளின் அடிப்படையில் கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், 3/33-வடசித்தூர் அஞ்சல் என்ற முகவரியில் வசிக்கும் திரு.சாந்து முகம்மது ராவுத்தர் மகன் திரு.S.அப்துல் ஜப்பார் என்பவருக்கு கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண்கள்.44/9 (பகுதி)-ல் 0.95.0 ஹெக்டேர், 45 (பகுதி)-ல் 0.45.0 ஹெக்டேர், 46/1-ல் 0.46.0 ஹெக்டேர் மற்றும் 47/3 (பகுதி)-ல் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் 5 (ஐந்து) ஆண்டுகளுக்கு சாதாரண கல் மற்றும் கிராவல் மண் வெட்டியெடுக்க கீழ்கண்ட நிபந்தனைகளுக்குட்பட்டு குவாரி குத்தகை வழங்குவதற்குரிய நிலப்பரப்பாக (Precise Area Communication) கருதப்படுகிறது.

நிபந்தனைகள்

1. அருகிலுள்ள பட்டா நிலங்களுக்கும், பொது மக்களுக்கும், தோட்டத்து சாளை மற்றும் வீடுகளுக்கும் எவ்வித இடையூறும் இன்றி சாதாரண கல் மற்றும் கிராவல் குவாரி மேற்கொள்ள வேண்டும்.
2. அருகில் உள்ள பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
3. அனுமதி கோரும் புலத்திற்கு கிழக்கு பகுதியில் விண்ணப்ப புலத்திற்குள் வந்து முடிவடையும் பயன்பாட்டில் இல்லாத தாழ் மின்னழுத்த கம்பியை



குத்தகை உரிமம் வழங்குவதற்கு முன்பாக
அமைத்து கொள்ள வேண்டும்.

4. மெருகேற்றக்கூடிய கிரானைட் கற்கள் வெட்டிப் போடுக்கூடாது.
5. குழந்தை தொழிலாளர்களை வேலைக்கு அமர்த்தக்கூடாது.



மேலும், தமிழ்நாடு சிறுகனிம சலுகை விதிகள்-1959 விதி எண். 41 மற்றும் 42-ன் படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறும், மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு அதிகார அமைப்பின் அனுமதியினை பெற்று சமர்ப்பிக்கவும் மனுதாரரை கேட்டுக் கொள்ளப்படுகிறது.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை
கோயம்புத்தூர்.

பெறுநர்:
திரு.அப்துல்ஜப்பார்,
த/பெ.சாந்துமுகமது ராவுத்தர்
3/33, வடசித்தூர் அஞ்சல்,
கிணத்துக்கடவு வட்டம்,
கோயம்புத்தூர் மாவட்டம்-641 202

3/8/21

Stu

Taluk Division No. 118-B

Village

No.

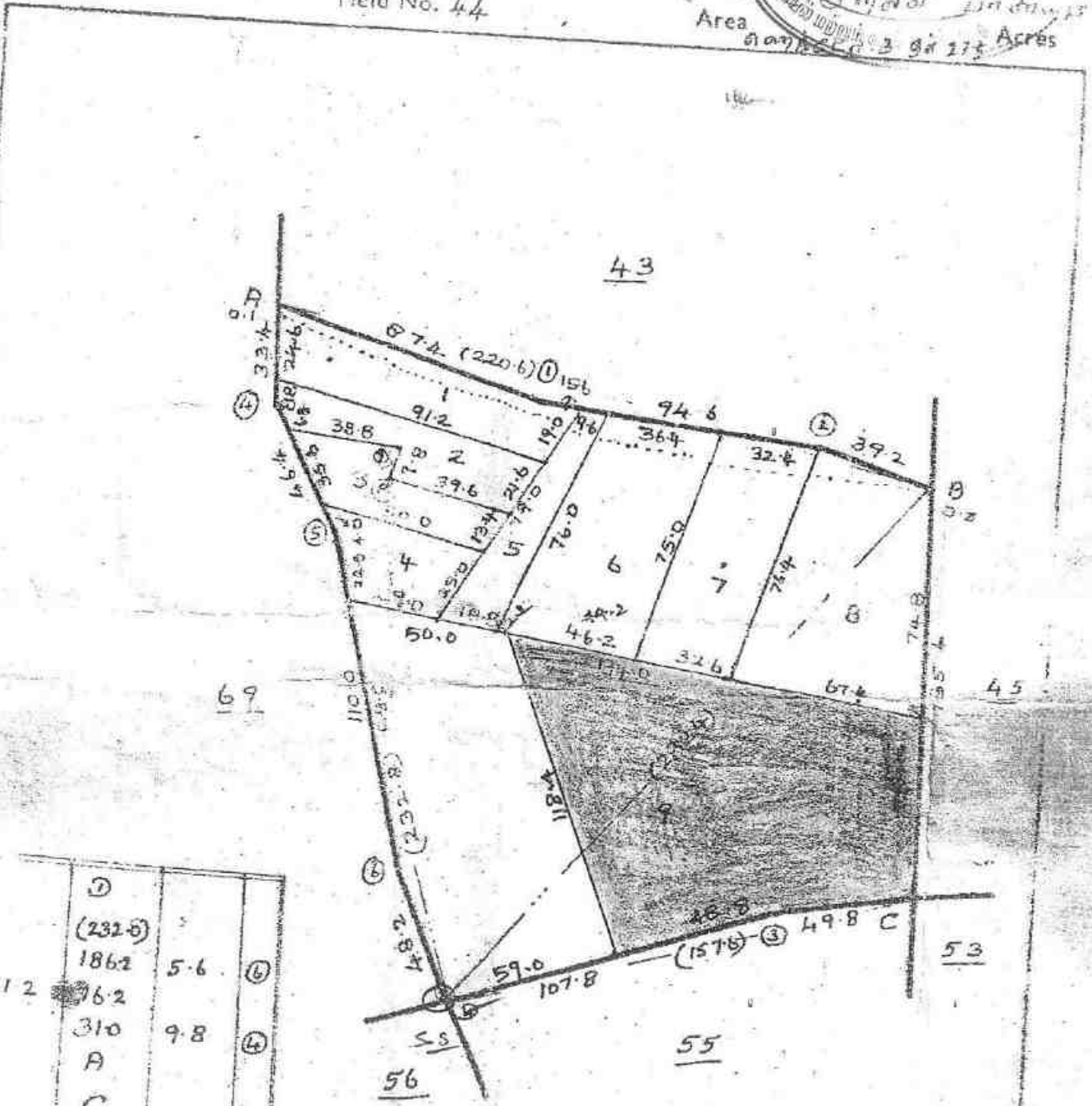
Name

Area

3 AUG 2021

3 9 11 Acres

Field No. 44



D	(231.6)		
	186.2	5.6	(6)
12	16.2		
	31.0	9.8	(4)
A			
C	(157.6)		
2	107.8		
D			
B			
	(220.8)		
	181.4		
	87.2	7.0	(1)
A			

B			
	220.6		
	52.2	44.2	B
	52.2	34.4	7
A			

(கனகசபை பணிக்கு 14' 6")

[Signature]
 கிராம நிர்வாக அலுவலர்,
 31, குருநல்லிபாளையம் கிராமம்,
 கிணத்துக்கடவு வட்டம்.

LEASE APPLIED AREA

Scale 1:2000
 29-4-81

[Signature]

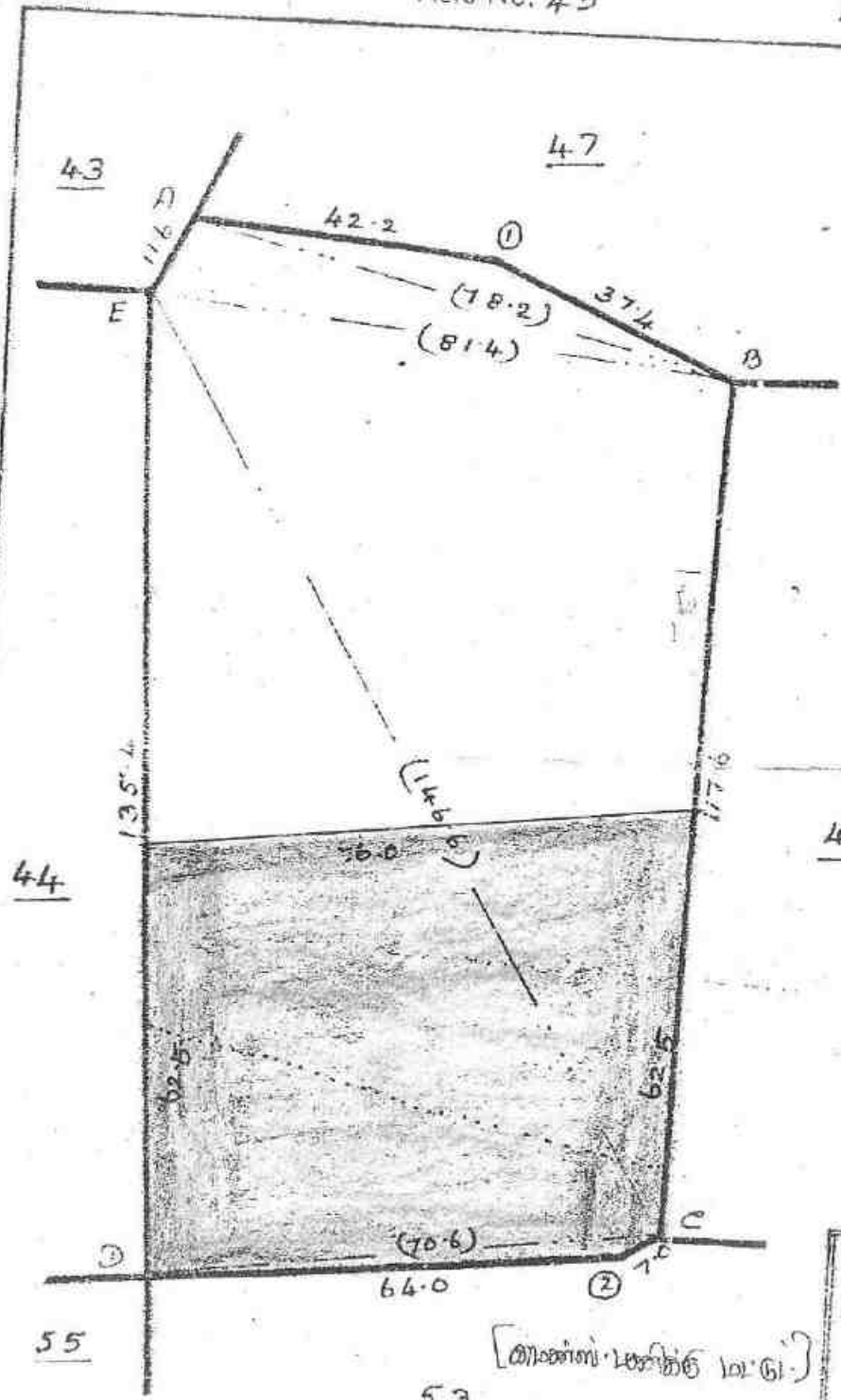
506-Divisions Plotted

1574 A

Taluk செங்கல்பட்டி டி.பி.ஓ.

சுயக்ஞநர்
 Survey Old No 73 New No
-3 AUG 2021
 No. 75A
 Name செங்கல்பட்டி டி.பி.ஓ.
 Area 1.91030 Acres

Field No. 45



	C	
	(706)	
	64.0	2.4
	D	
	B	
	(782)	
D	70	41.2
	E	
	(814)	
	774	110
	B	

[Signature]

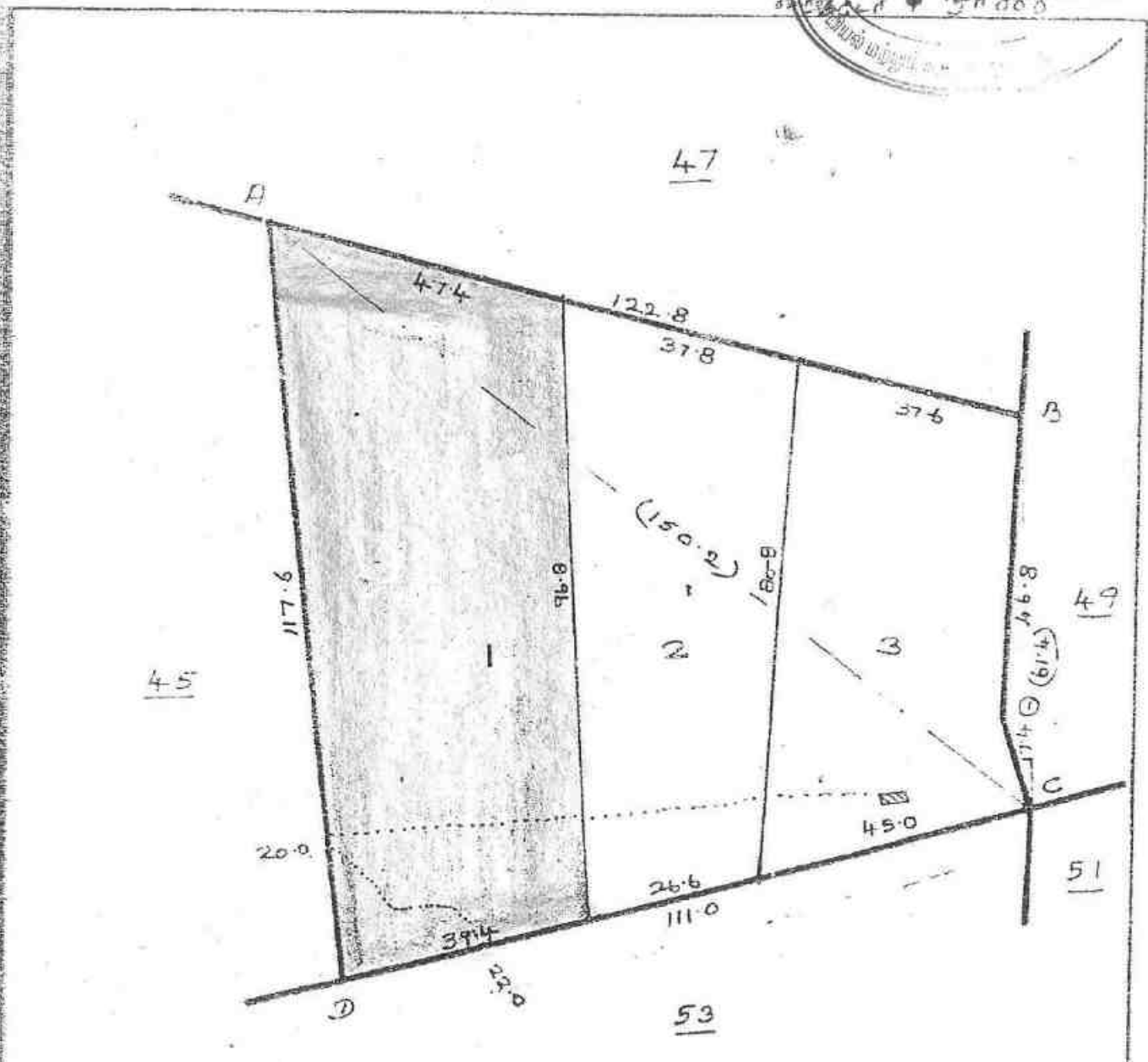
LEASE APPLIED AREA

5.3
 [செங்கல்பட்டி டி.பி.ஓ.]
[Signature]
 கிராம நிர்வாக அலுவலர்
 31, குருநலவிபாளையம் கிராமம்,
 சிணத்தாங்கல் வட்டம்.

சென்னை மாநகராட்சி
புறநகர் வட்டம்

No. 11
Village }
Name }
Area }

Field No. 46



C			
(61.4)			
46.0	8.0	⊙	
B			
A			
(150.2)			
40.2	46.0	B	
C			

[சான்றிதழ் பதிக்கப்பட்ட இடம்]

(Signature)
கிராம நிர்வாக அலுவலர்,
31. குருநல்லிபாளையம் கிராமம்,
திணைத்துக்கல் வட்டம்.

LEASE APPLIED AREA

Scale: 1:1000 Inch - One Chain. 30.4.81

D.R. SUB-DIVISIONS PLOTTED BY ME:
R. Kottarajaperumal

D.R. SUB-DIVISIONS TESTED BY ME:
K. Subramanian

(Signature)

பெரிய கிராமம் கட்டாரி
Taluk சிவசென்னை மாவட்டம்

Village

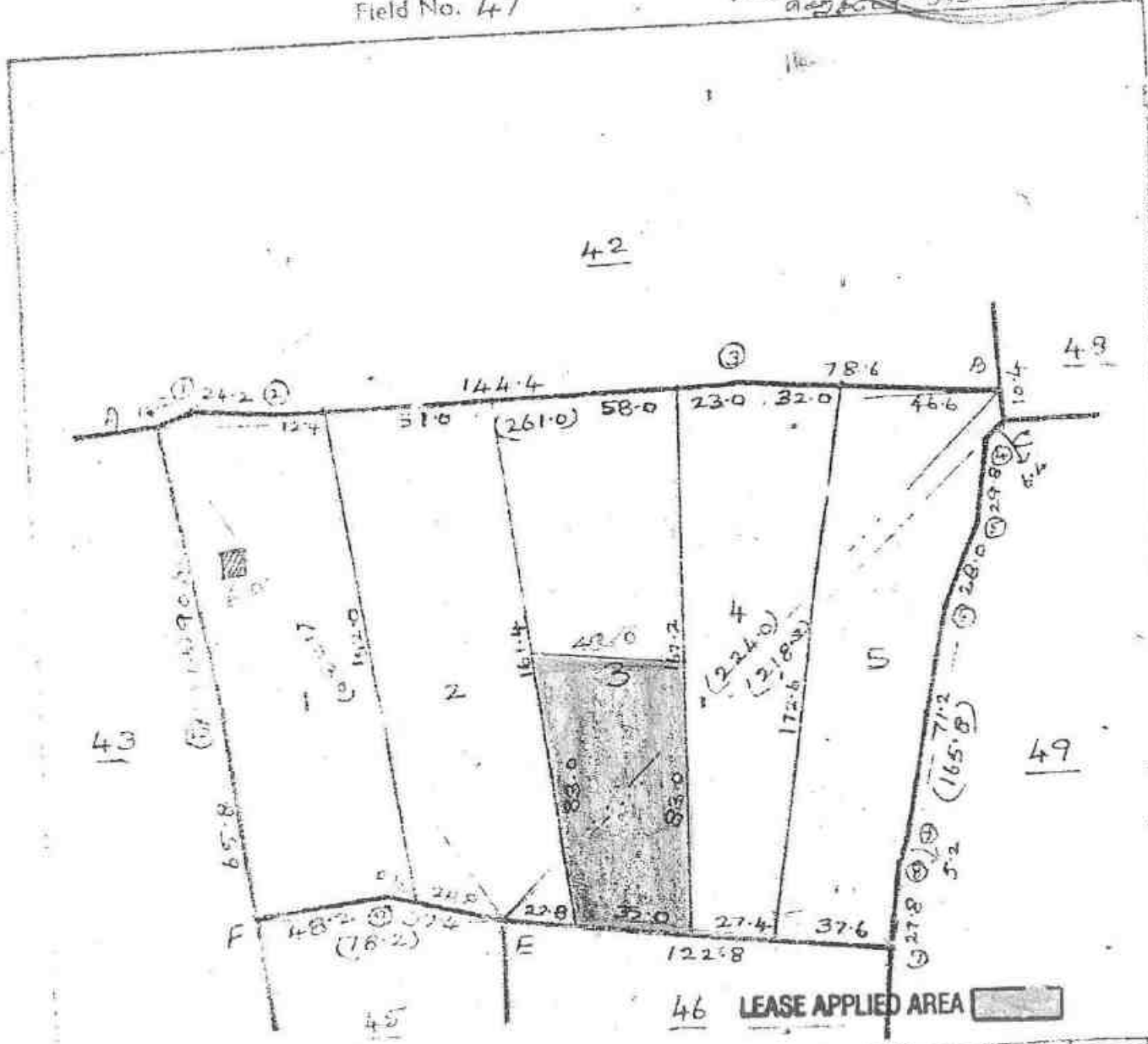
No. 16

Name

Area

சென்னை மாநகராட்சி
-3 AUG 2021
கிராம கட்டுவாயில்
பெரிய கிராமம் கட்டாரி 69.5 Acres

Field No. 47



[கிராம நிர்வாக அலுவலர்]

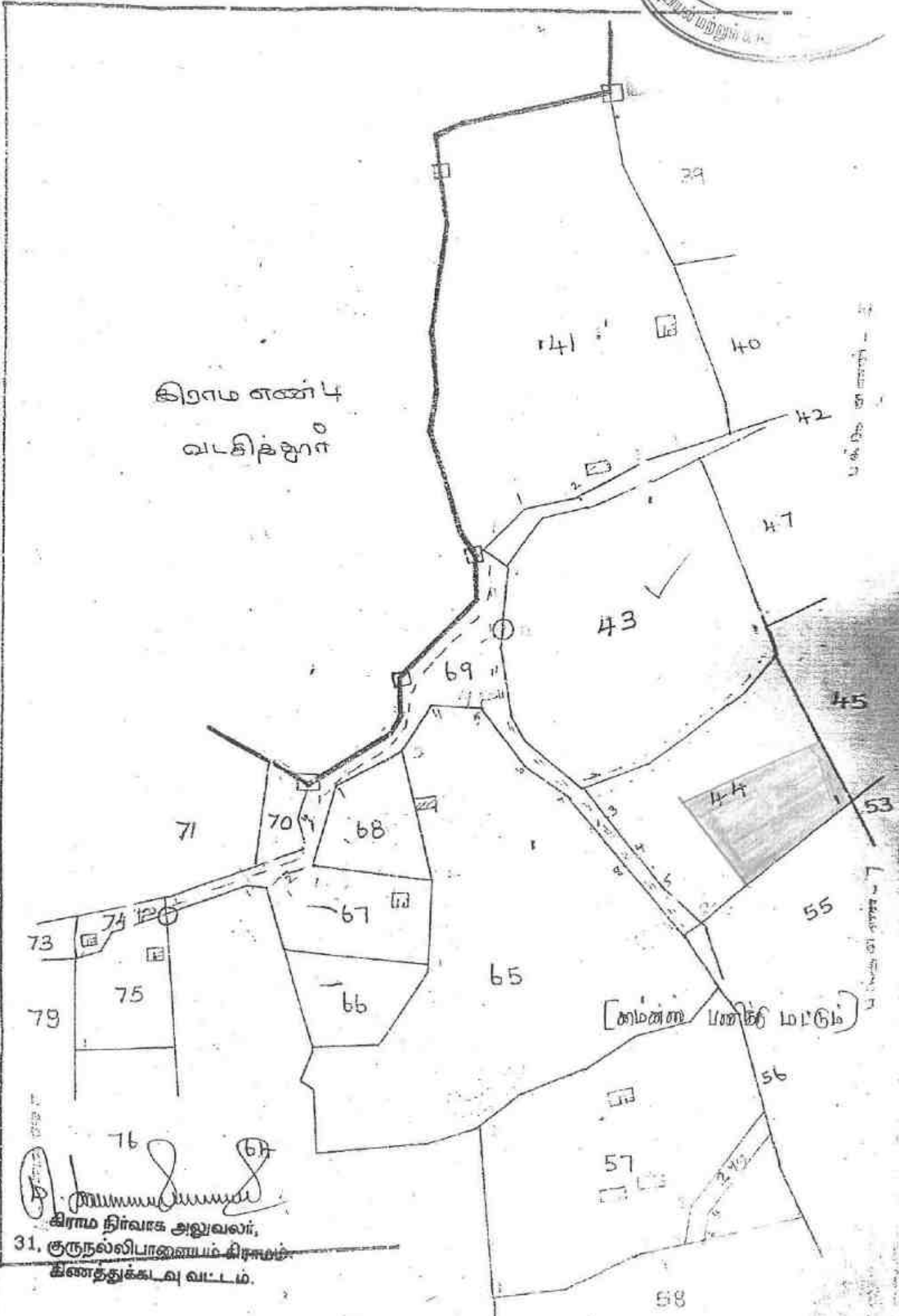
(Signature)
கிராம நிர்வாக அலுவலர்,
31, குருநல்லிபாளையம் கிராமம்,
கிண்டித்தூக்குடி வட்டம்.

F	(1564)
12.2	48.2
0.4	916
12.2	43.2
A	(831)

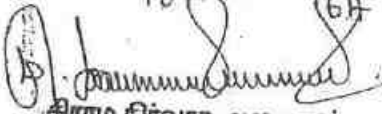
F	66.4	41.4						5.2	4.0	C
		E	(78.2)							E
								(224.0)		
②	7.0	41.2						8.2	6.0	B
		F								(261.0)
		③	(165.0)							
			138.4	3.8	⑤	③	5.6	182.4		
			133.4	1.6	④	②	2.2	38.0		
			62.4	6.2	⑥	①	3.2	13.8		
			34.8	0.8	⑦					A

Scale 1:2000
30/4/81
New Hope Detail plotted

-3 AUG 2021



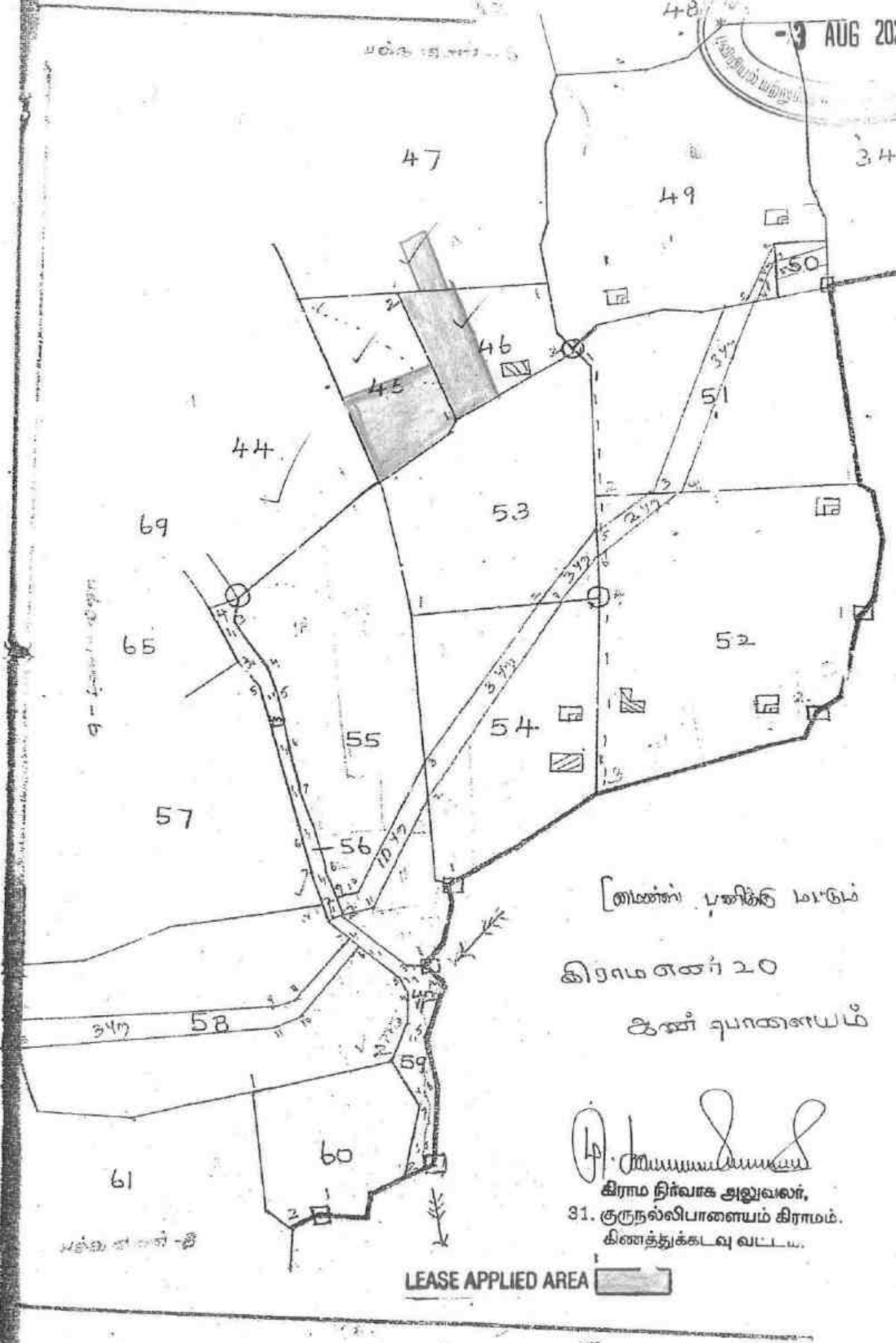
கிராம எண் 4
வடகிச்சூர்


 கிராம நிர்வாக அலுவலர்,
 31, குருநல்லிபாளையம் கிராமம்,
 கிணத்தூக்கடி வட்டம்.

LEASE APPLIED AREA 

இயக்குநர்

-3 AUG 2021



சாலை - 20

சாலை - 20

[தாண்டல் புகாரில் மட்டும்]

கிராம சாலை 20

கடன் அபாயமில்லம்

(Handwritten Signature)

கிராம நிர்வாக அலுவலர்,
31. குருநல்லிபாளையம் கிராமம்.
கிணத்துக்கடவு வட்டம்.

LEASE APPLIED AREA



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கோயம்புத்தூர்

வட்டம் : கிணத்துக்கடவு

வருவாய் கிராமம் : குருநாளிபாளையம்

பட்டா எண் : 99

உரிமையாளர்கள் பெயர்

1. ஜப்பார் என்கிற அப்துல் ஜப்பார்

மகன் தாரிக் அஜீஸ்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
44	9	1 - 64.00	5.54	--	--	--	--	2020/0103 /12/231124--- -- 24-06-2020
		1 - 64.00	5.54					

குறிப்பு2 :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 12/12/016/00099/90618 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 21-07-2020 அன்று 01:14:55 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

(Handwritten signature)



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கோயம்புத்தூர்

வட்டம் : கிணத்துக்கடவு

வருவாய் கிராமம் : குருநளளிபாளையம்

பட்டா எண் : 680

உரிமையாளர்கள் பெயர்

1. சாந்துமுகமது மகன் எஸ்.அப்துல் ஜப்பார்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
43	1	0 - 43.50	1.20	--	--	--	--	R08/1674--- -- 09-10-2001
43	10	0 - 12.00	0.33	--	--	--	--	----- 03-10-2014
43	2	0 - 32.00	0.89	--	--	--	--	R08/1674--- -- 12-01-2005
43	3	0 - 77.00	2.12	--	--	--	--	R08/1674--- -- 12-01-2005
43	4	0 - 38.50	1.07	--	--	--	--	R08/1674--- -- 12-01-2005
43	5	0 - 63.00	1.74	--	--	--	--	----- 03-10-2014
43	6	0 - 4.00	0.11	--	--	--	--	----- 03-10-2014
43	7	0 - 4.50	0.12	--	--	--	--	----- 03-10-2014
43	8	0 - 8.50	0.24	--	--	--	--	R08/1674--- -- 30-10-2007
43	9	0 - 32.00	0.89	--	--	--	--	----- 03-10-2014
44	1	0 - 20.00	0.68	--	--	--	--	R08/1674--- -- 30-10-2007
44	2	0 - 12.00	0.41	--	--	--	--	R08/1674--- -- 30-10-2007
44	3	0 - 14.00	0.47	--	--	--	--	R08/1674--- -- 30-10-2007
44	4	0 - 8.00	0.27	--	--	--	--	----- 03-10-2014
44	5	0 - 10.00	0.34	--	--	--	--	R08/1674--- -- 30-10-2007
44	6	0 - 32.50	1.10	--	--	--	--	R08/1674--- -- 30-10-2007
44	7	0 - 26.50	0.90	--	--	--	--	R08/1674--- -- 30-10-2007



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கோயம்புத்தூர்

வட்டம் : கிணத்துக்கடவு

வருவாய் கிராமம் : குருநளளிபாளையம்

பட்டா எண் : 783

உரிமையாளர்கள் பெயர்

1. (லேட்) சாந்து முகம்மது ராவுத்தர் மகன் ஜப்பார் (எ) அப்துல் ஜப்பார்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
46	1	0 - 46.00	1.27	--	--	--	--	KR13/204--- -- 09-10-2001
47	1	0 - 77.00	2.12	--	--	--	--	KR13/204--- -- 09-10-2001
47	2	0 - 75.50	2.09	--	--	--	--	KR13/204--- -- 09-10-2001
47	3	0 - 73.00	2.02	--	--	--	--	KR13/204--- -- 09-10-2001
		2 - 71.50	7.50					

குறிப்பு2 :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 12/12/016/00783/70658 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 21-07-2020 அன்று 01:17:58 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின் 2D barcode படப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

1	2	3	4	5	6	7	8	9	10		
44	9	44-பா	ர	4	...	8-1	3	3 38	1 64.0	5 54	99 மர். குப்புசாமி நாயக்கர்.
									3 27.5	11 08	
45	...	45	ர	4	...	8-2	4	2 77	1 03.0	2 85	622 வெ. செல்வ குமாரசாமி கவுண்டர் (1), ரங்கம்மாள் (2).
46	1	46-பா	ர	4	...	8-2	4	2 77	0 46.0	1 27	20 சி. அறுமுகக் கவுண்டர்.
	2	-பா	ர	4	...	8-2	4	2 77	0 28.0	0 78	19 ரா. ஆறுச்சாமி கவுண்டர்.
	3	பா	ர	4	...	8-2	4	2 77	0 26.0	0 72	49 நா. கருப்புச்சாமி கவுண்டர்.
									1 00.0	2 77	
47	1	47-பா	ர	4	...	8-2	4	2 77	0 77.0	2 12	224 ப. பழனி கவுண்டர்.
	2	-பா	ர	4	...	8-2	4	2 77	0 75.5	2 09	336 ரா. ரத்தினம் மாள்.
	3	-பா	ர	4	...	8-2	4	2 77	0 73.0	2 02	20 சி. அறுமுகக் கவுண்டர்.
	4	-பா	ர	4	...	8-2	4	2 77	0 73.0	2 02	19 நா. ஆறுச்சாமி கவுண்டர்.
	5	-பா	ர	4	...	8-2	4	2 77	0 71.0	1 97	49 நா. கருப்புச்சாமி கவுண்டர்.
									3 69.5	10 22	
48	...	48	0 22.5	...	
49	1	49-பா	ர	4	...	8-2	4	2 77	2 46.0	6 76	290 ர. மருத நாயக்கர் (1), ரா. குமாரசாமி நாயக்கர் (2).
	2	-பா	ர	4	...	8-2	4	2 77	0 99.0	2 74	417 கு. பழனி நாயக்கர் (1), ப. சுப்பைய நாயக்கர் (2).
	3	-பா	ர	4	...	8-2	4	2 77	1 03.0	2 85	486 கு. பழனி நாயக்கர் (1), கிருஷ்ணசாமி ப. சுப்பைய நாயக்கர் (3).

சுயமேதி
11
-3 AUG 2021
மர். குப்புசாமி நாயக்கர்.

[மேல்கண்ட பழனி மருத நாயக்கர்]

சுயமேதி
11
-3 AUG 2021
மர். குப்புசாமி நாயக்கர்.

Handwritten signature

भारतीय गैर न्यायिक

-3 AUG 2021

बीस रुपये

रु.20

Rs.20

TWENTY
RUPEES

INDIA

INDIA NON JUDICIAL

தமிழ்நாடு தமிழ்நாடு TAMIL NADU

20/-

75AB 738708

P. A. A. A.

முத்திரைத்தாள் விற்பனையாளர்
உரிமம் எண். 24/2000,
வசதுபாளையம், கிணத்துக்கடவு தமிழ்நாடு
தேதி...23.08.2020

THARIK AZEEZ
VADACHITHUR

சம்மதப்பத்திரம்

கோவை மாவட்டம், கிணத்துக்கடவு தாலுகா, வடசித்தூர் கிராமம், கதவு எண்.3/33-ல் வசிக்கும் திரு.S.அப்துல் ஜப்பார் அவர்களின் குமாரர் A.தாரிக் அஜீஸ் ஆகிய எனக்கு, தனியாக பாத்தியப்பட்ட குருநல்லிபாளையம் கிராமம் பட்டா எண்.99-ல் க.ச.எண்.44/9 நெ. காலையில் 1.64.0 லிஸ்தீரண பூமிபானது நெகமம் சார்பதிலாவர் அலுவலக பத்திர எண்.1538/2019-ன்படி பாத்தியப்பட்ட பூமியில் எனது தகப்பனர் கோவை மாவட்டம், கிணத்துக்கடவு வட்டம் வடசித்தூர் கிராமத்தில் 3/33-ல் வசிக்கும் திரு.சாந்து முகமது ராவுத்தர் அவர்களின் குமாரர் திரு. அப்துல் ஜப்பார் என்பவருக்கு கல் உடைக்க மேற்படி காலையில் 0.95.0 பூமியை அனுமதி கோரி மாவட்ட ஆட்சியருக்கு விண்ணப்பம் செய்துள்ளார். அவர் பெயரில் குத்தகை உரிமம் வழங்குவதில் எனக்கு எவ்வித ஆட்சேபமையும் இல்லை என்பதையும் மாவட்ட ஆட்சியர் அவர்கள் அனுமதி வழங்கிய பின் 5 ஆண்டுகளுக்கு கல் உடைத்துக் கொள்ள சம்மதம் தெரிவித்துக் கொள்கிறேன்.



இப்படிக்கு
S.M. PRABHAKARAN, B.A., B.L.,
ADVOCATE & NOTARY PUBLIC,
GOVT. OF INDIA, Enr No. 1349/92
28 REVATHY BUILDING
COPALAPURAM 2ND STREET,
COIMBATORE - 641 018.
Co. No. 98941 31171

இயக்குநர் அலுவலகம்

- 3 AUG 2021



தகவல்

- ஆதார் அடையாளத்திற்கான சான்று குடியறிமைக்கு அல்ல.
- அடையாள சான்றை இணையதளம் மூலம் உறுதிப்படுத்திக் கொள்ளவும்.

INFORMATION

- Aadhaar is proof of identity, not of citizenship.
- To establish identity, authenticate online.

- ஆதார் நாடு முழுவதிலும் செல்லுபடியாகும்.
- வருங்காலத்தில் அரசு மற்றும் அரசு சாரா சேவைகளை பயன்படுத்திக் கொள்ள ஆதார் உதவிகரமாக இருக்கும்.
- Aadhaar is valid throughout the country.
- Aadhaar will be helpful in availing Government and Non-Government services in future.

இந்திய அரசாங்கம்
Unique Identification Authority of India

முகவர்: ஸர் சந்திரமொகமது
சாண்ட் சா. - டி.டி.சி.தார் வ.கி.சி.தார்
வ.கி.சி.தார், வ.கி.சி.தார்
கொயம்புதூர், தமிழ் நாடு, சாண்ட்

Address: S/O:
Shandmohammed, DNO
3/33, VADASITHUR,
VADACHITUR, Vadasithur,
Vadasithur, Coimbatore,
Tamil Nadu, 641202

9677 9610 2315

1800 201 2847

help@uidai.gov.in

www.uidai.gov.in



இந்திய அரசாங்கம்

Unique Identification Authority of India
Government of India

முகவர் அடையாளம் / Enrollment No. : 1110/14008/04476

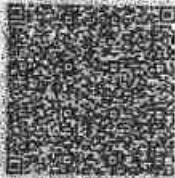
To
Abduljabbar Shand Mohammed
சந்திரமொகமது சாந்திரமொகமது
S/O Shandmohammed
DNO 3/33

VADASITHUR
VADACHITUR
Vadasithur
Vadasithur, Coimbatore
Tamil Nadu - 641202



KL553337249FT

55333724



உங்கள் ஆதார் எண் / Your Aadhaar No. :

9677 9610 2315

ஆதார் - சாதாரண மனிதனின் அதிகாரம்



இந்திய அரசாங்கம்

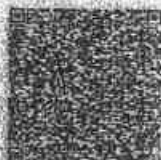
Government of India

சந்திரமொகமது சாந்திரமொகமது
Abduljabbar Shand Mohammed



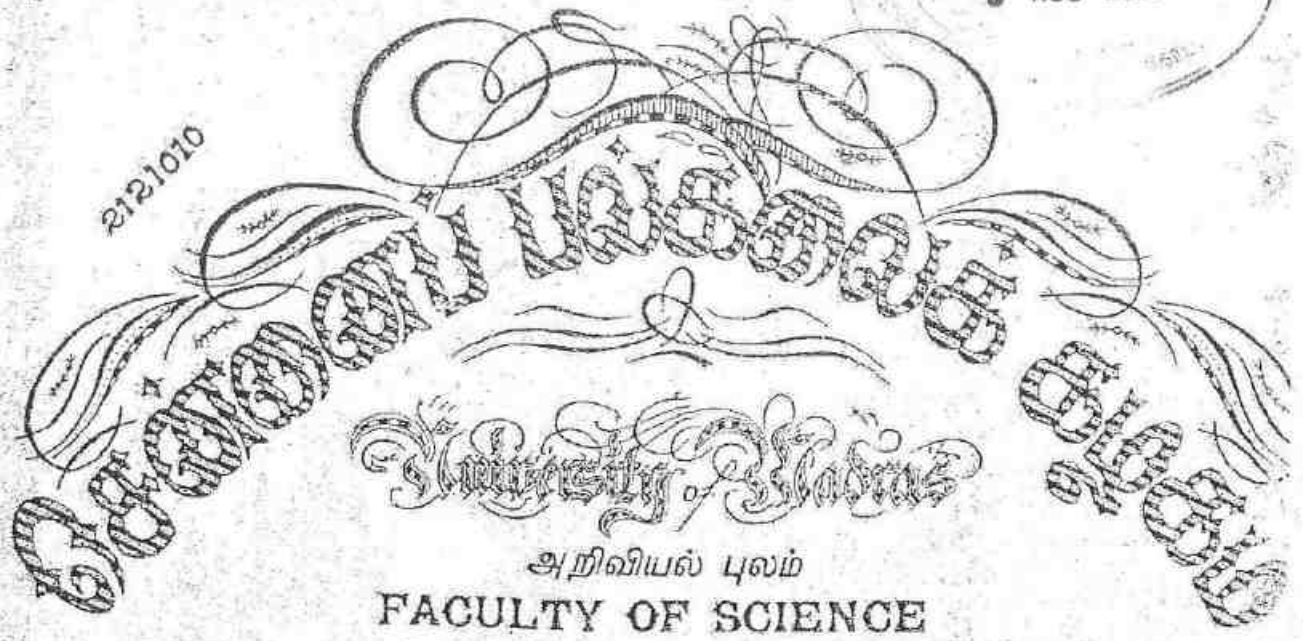
பிறந்த நாள்/DOB: 2000/1903
ஆண்/ Male

9677 9610 2315



ஆதார் - சாதாரண மனிதனின் அதிகாரம்

உயர்க்குறி
-3 AUG 2021



சென்னைப் பல்கலைக் கழகப் பேரவை 1994

ஆண்டு... ஏப்ரல்... மாதம் நடந்த... கனிமவியல்... தேர்வு...
பெ. தங்கராசு... என்பவர்... முதல்... வகுப்பில்
தேர்ச்சி பெற்றார் என்று தக்க தோர்வாளர்கள் சான்றளித்தபடி அறிவியல் நிறைஞர்
என்னும் பட்டத்தை அவருக்குப் பல்கலைக் கழக இலச்சினையுடன் வழங்குகிறது.

The Senate of the UNIVERSITY OF MADRAS hereby
makes known that... *S. S. Thangaraju*...
has been admitted to the Degree of Master of Science, he/she
having been certified by duly appointed Examiners to be qualified
to receive the same in... *Geology*... and was placed in the
First... Class, at the Examination held in April 1994.



Given under the seal of the University

[Signature]

செப்பாக்கம், Chempakam
சென்னை, Madras
நாள்: Dated: 25-01-1999

பதிவாளர்
Registrar

P.T. [Signature]
குணாசெல்வம்
Vice-Chancellor



GOVERNMENT OF INDIA
MINISTRY OF LABOUR AND REHABILITATION
OFFICE OF THE DIRECTOR GENERAL OF MINES SAFETY

Certificate of Practical experience granted by the Manager to a candidate for a Manager's / Surveyor's / Foremen's / Over man's / Sirdar's / Mate's / Short firer's/ Blaster's Certificate of competency (Restricted) examination under the Metalliferous Mines Regulations 1961.

I T.VENKATARAJAGOPALAN being the Mines Agent of M/S.LIMENAPH CHEMICALS, RAJAPALAYAM OF LIMESTONE PRODUCTS (Thenmali Limestone Mine) do hereby certify that Thiru. P.THANGARAJU, son of S.PERIASAMY (whose signature is appended) worked as a Geologist in the above mine from 02.05.1994 to 30.12.1999. During his term of work aforesaid, he has obtained practical experience as detailed overleaf. The duties connected with his work have involved continuous attendance at the mine and have been efficiently performed by him.

I believe him to be of good character and a fit and proper candidate to be examined for Certificate of Competency.

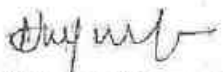
THEMMALAI LIME STONE MINES
10/6/06
Agent (Mines)
(Signature with date and official Seal)
[T.VENKATARAJAGOPALAN]

Mines Agent:

P.O. : ARUKANGULAM

District : TIRUNELVELI

State : TAMIL NADU


(Signature of Candidate)

(State name of Mineral) : LIMESTONE





S.No	Particulars of practical Experience (a)	Place of Experience (b)	Period of practical experience (c)		Total Experience (e)		
			From	To	Yr.	Month	Day
01.	As a Trainee in Drilling Operation.	Semi Mechanised Opencast working	02.05.1994	15.07.1995	01	02	14
02.	As a Trainee in Blasting Operation.		16.07.1995	10.12.1996	01	04	25
03.	Exploration		11.12.1996	31.01.1998	01	01	26
04.	Surveying		01.02.1998	25.06.1998	06	04	25
05.	Sampling Quality control and		26.06.1998	20.07.1999	01	06	24
06.	Supervision in HEMM Operation.		21.07.1999	30.12.1999	06	05	10
GRAND TOTAL					05	07	28
(Five Years Seven Months Twenty Eight Days Only)							

AVERAGE MONTHLY OUTPUT (D) / AVERAGE DAILY EMPLOYMENT (e) DURING THE ABOVE PERIOD IS GIVEN BELOW :

In below ground working	In open - cast working	In all
Nil	35	35
Nil		

OF THEMALAI LIME STONE MINES

[Handwritten Signature]

Signature of Candidate

[Handwritten Signature]
10/6/06

Signature of Manager with (Date) (Name)
[T.VENKATARAJAGOPALAN]

Name of the Mine :

Instructions :-

01. State clearly the nature of duties
02. State whether on surface, in open cast workings or below ground
03. State specifically the period spent by the applicant in different mining operations, or surveying operations, as the case may be. If the employment has not been such as to involve continuous attendance of the applicant at the mine, it must be stated how many days a week, he was employed at the mine, whether underground or above ground and in what capacity.
04. Delete if the mine is a Metalliferous mine.
05. Delete if the mine is a Coal mine.

[Handwritten Signature]

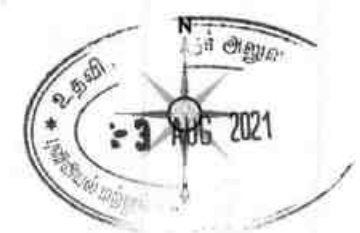
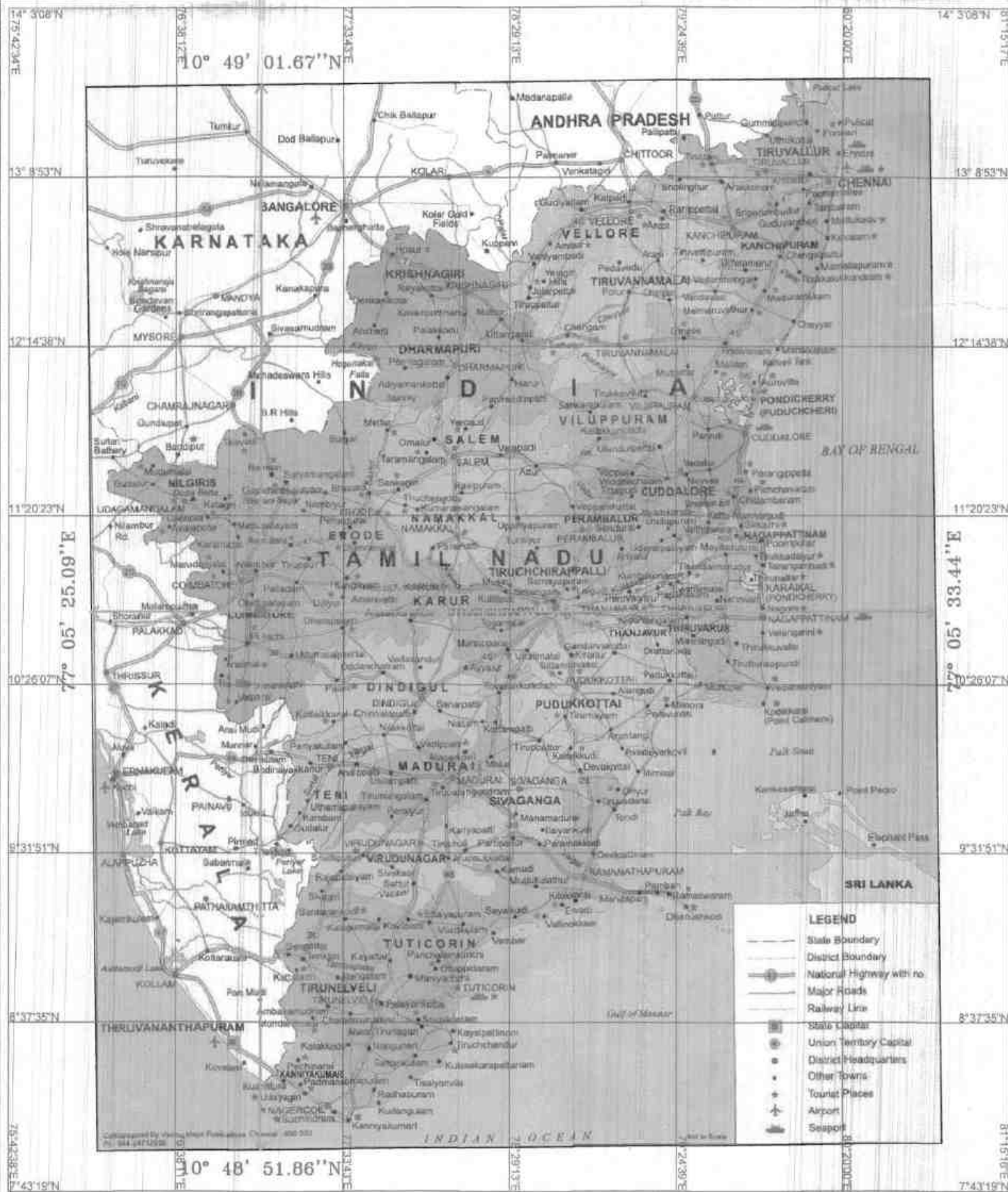


PLATE NO: I

DATE OF SURVEY : 11.12.2020

APPLICANT:

THIRU.S.ABDUL JABBAR,
S/O. SHAND MOHAMMED RAWTHER,
NO.3/33, VADACHITHUR (POST),
KINATHUKADA VU TALUK,
COIMBATORE DISTRICT.

**LOCATION OF QUARRY
LEASE APPLIED AREA:**

S.F.Nos : 44/9(P),.45(p),46/1,47/3(p)
EXTENT : 2.16.5Ha.
VILLAGE : KURUNALLIPALAYAM,
TALUK : KINATHUKADAVU,
DISTRICT : COIMBATORE,
STATE : TAMIL NADU.

INDEX

Q. L.A. AREA : ●

TOPO SHEET NO. : 58 F/01

LATITUDE : 10°48'51.86"N to 10°49'01.67"N

LONGITUDE : 77°05'25.09"E to 77°05'33.44"E

LOCATION PLAN

SCALE 1:24,00,000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS
PLATE IS TRUE AND CORRECT TO THE
BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP
AUTHENTICATED
BY STATE GOVERNMENT

[Signature]
DR.F.THANGARAJU, M.Sc, Ph.D.,
QUALIFIED PERSON

PLATE NO:I-A

DATE OF SURVEY :11.12.2020

APPLICANT:

THIRU.S.ABDUL JABBAR,
S/o SHAND MOHAMMED RAWTHER,
NO.3/33, VADACHITHUR (POST),
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT.

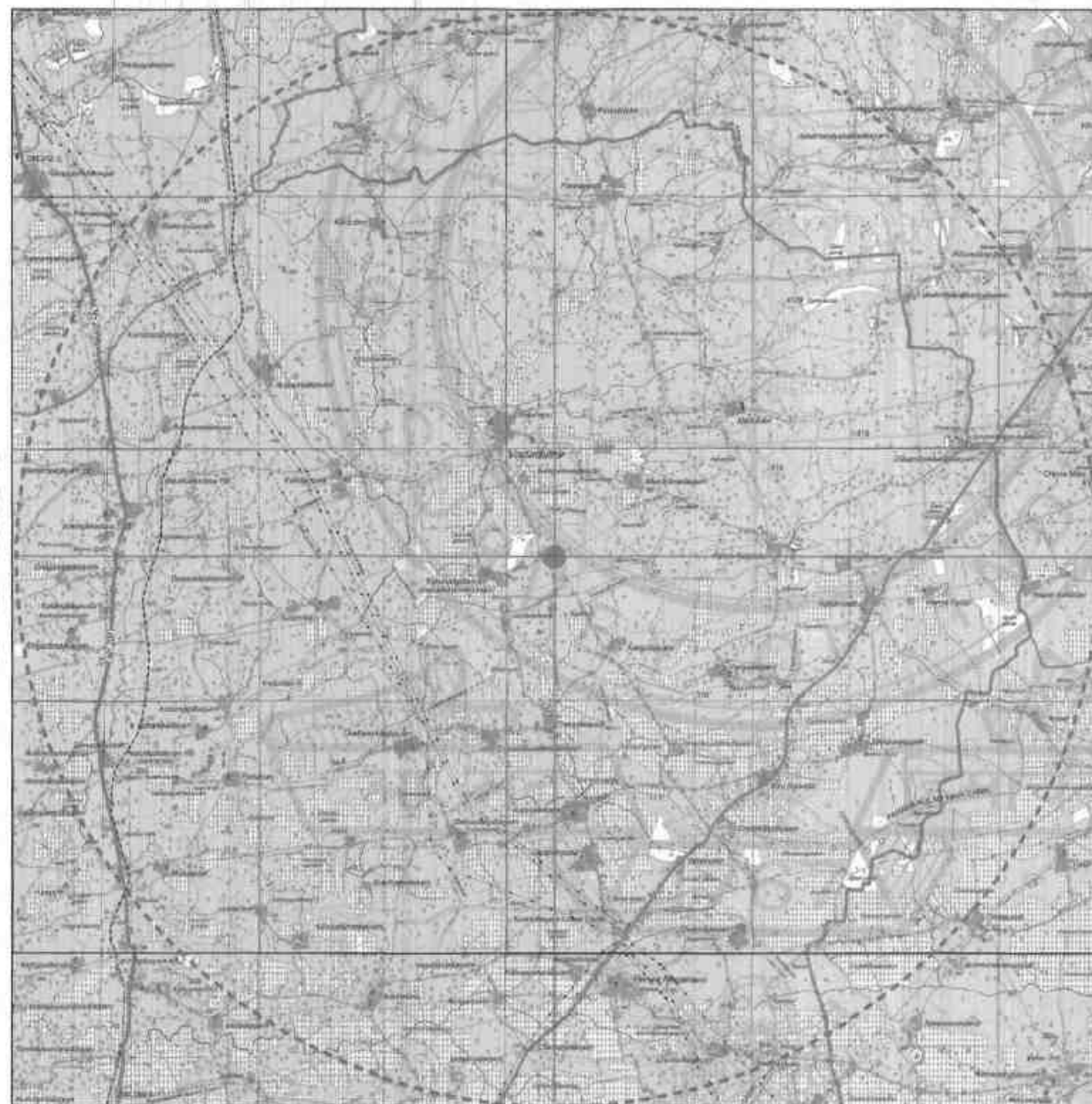
LOCATION OF QUARRY

LEASE APPLIED AREA:

S.F.Nos : 44/9(P),.45(p),46/1,47/3(p)
EXTENT : 2.16.5Ha,
VILLAGE : KURUNALLIPALAYAM,
TALUK : KINATHUKADAVU,
DISTRICT : COIMBATORE,
STATE : TAMIL NADU.



10° 54' 27.04''N



76° 59' 55.98''E

77° 11' 02.54''E

10° 43' 26.49''N

INDEX

CONVENTIONAL SYMBOLS

Express lighting with cut, with fringe, with distance scale			
Roads, railroad, according to appearance			
Power, gas, telephone according to appearance			
Unimproved roads, footpaths, Public Works with name, Public			
Roads with road in front, unimproved, Canal			
Canal, irrigation or tank (Not) aperture, Well			
Water (not) with water channel, with level, Keros, 'M' line			
Waterfalls, Shoals, Swamps, Ponds			
Wells, hand-dug, Tubewell, Spring, Tanks, permanent, etc.			
Catchment, head of rail line, Survey point			
Approach, level, slope, bridge, single, with station, other symbol			
Electric, telegraph, telephony, single, with distance scale, etc.			
Building, tower, chimney, etc., Casing with level			
Crestline, sub-marine, Public, etc.			
Cable, telegraph, etc. (State Management) (Government)			
Tower or flagpole, telegraph, telephony, etc.			
High, permanent, temporary, Tower, Antenna			
Windmill, Oilmill, Churn, Mill, etc., Light, Tower, Crane			
Lightning, Lighthouse, Signal, Light, etc., etc.			
Ship, Vessel, etc., etc.			
Water, etc., etc.			
Area, etc., etc.			
Boundary, Municipal			
etc., etc., etc.			
etc., etc., etc.			
Boundary, etc., etc., etc.			
Height, etc., etc., etc.	200	100	0
Spot, etc., etc., etc.	BM 05-3	BM 05-1	BM 05-2
Point, etc., etc., etc.	2		
etc., etc., etc.			
Courtyard, etc., etc., etc.			
etc., etc., etc.			
etc., etc., etc.			
etc., etc., etc.			
etc., etc., etc.			

TOPO SKETCH OF QUARRY
LEASE APPLIED AREA FOR
10KM RADIUS

SCALE- 1:100000

TOPO SHEET NO. : 58 F/01

LATITUDE : 10°48'51.86"N to 10°49'01.67"N

LONGITUDE : 77°05'25.09"E to 77°05'33.44"E

10KM RADIUS :



Q.L.APPLIED AREA :



PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS
PLATE IS TRUE AND CORRECT TO THE
BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP
AUTHENTICATED
BY STATE GOVERNMENT

[Signature]
S.P. THAKURARAJU, M.Sc., Ph.D.,
QUALIFIED PERSON

DATE OF SURVEY :11.12.2020

1Km Radius : 

500m Radius : 

Q.L.Applied Area : 

TOPO SHEET NO. : 58 F/01

LATITUDE : 10° 48' 51.86"N to 10° 49' 01.67"N

LONGITUDE : 77° 05' 25.09"E to 77° 05' 33.44"E

APPLICANT:





THIRU.S.ABDUL JABBAR,
S/o. SHAND MOHAMMED RAWTHER,
NO.3/33, VADACHITHUR (POST),
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT.

LOCATION OF QUARRY

LEASE APPLIED AREA:

S.F.Nos : 44/9(P)..45(p),46/1,47/3(p)
EXTENT : 2.16.5Ha,
VILLAGE : KURUNALLIPALAYAM,
TALUK : KINATHUKADAVU,
DISTRICT : COIMBATORE,
STATE : TAMIL NADU.

INDEX

APPROACH ROAD	
VILLAGE ROAD	
HABITATION	
TREES	
AGRICULTURAL LAND	
PIT	
WIND DIRECTION	
CANAL	

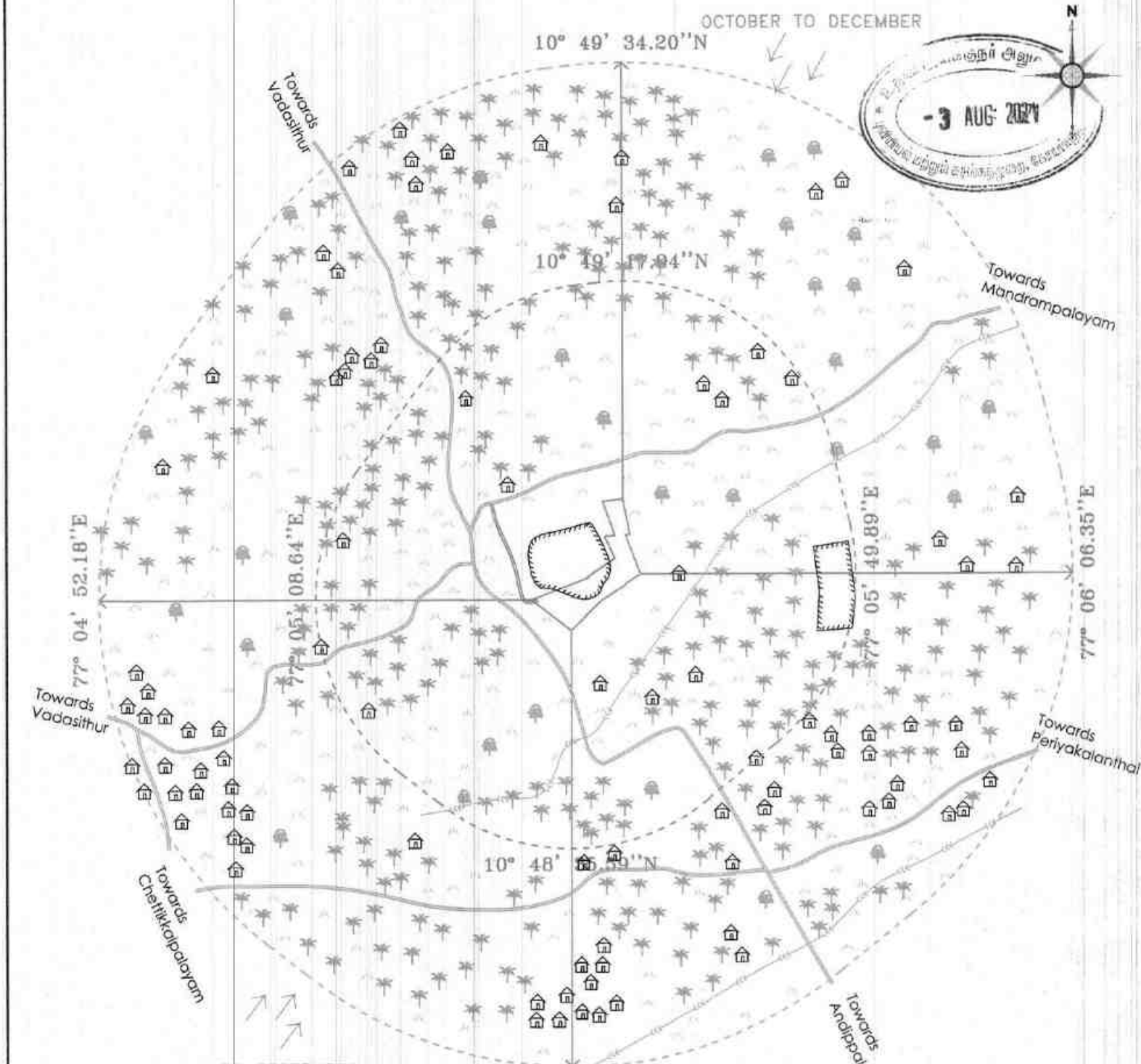
TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 1Km RADIUS

SCALE - 1:10,000

PREPARED BY:

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP AUTHENTICATED BY STATE GOVERNMENT

 92 A
S. THANGARAJU, S.C.T.,
QUALIFIED PERSON

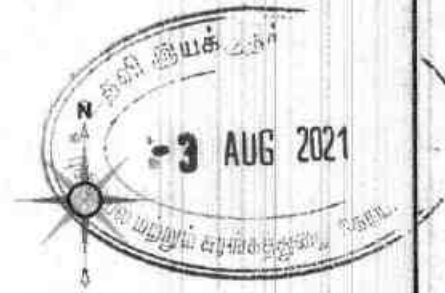


JULY TO SEPTEMBER

OCTOBER TO DECEMBER

LANDUSE PATTERN

DESCRIPTION	PERCENTAGE	INDEX
ROADS\CANAL	(10%)	
HABITATION	(10%)	
TREES	(35%)	
AGRICULTURAL LAND	(43%)	
PIT	(02%)	



Vadasithur

2.1km

Mandrampalayam

1.5km

780m

170m

2.3km

Andippalayam

PLATE NO:I-C

DATE OF SURVEY : 11.12.2020

APPLICANT:

THIRU.S.ABDUL JABBAR,
S/o. SHAND MOHAMMED RAWTHER,
NO.3/33, YADACHITHUR (POST),
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT.

**LOCATION OF QUARRY
LEASE APPLIED AREA:**

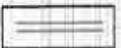
S.F.Nos : 44/9(P)..45(p),46/1,47/3(p)
EXTENT : 2.16.5Ha,
VILLAGE : KURUNALLIPALAYAM,
TALUK : KINATHUKADAVU,
DISTRICT : COIMBATORE,
STATE : TAMIL NADU.

INDEX

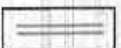
Q.L.APPLIED AREA



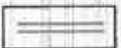
VILLAGE ROAD



MUD ROAD



APPROACH ROAD



KEY PLAN

Not To Scale

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS
PLATE IS TRUE AND CORRECT TO THE
BEST OF MY KNOWLEDGE BASED UPON THE LEASEMAP
AUTHENTICATED
BY STATE GOVERNMENT

[Signature]
DEP. TRAMGARAJU, M. SC. Ph. D.,
QUALIFIED PERSON 93A



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	10° 48' 51.86"N	77° 05' 28.08"E
2	10° 48' 54.18"N	77° 05' 25.09"E
3	10° 48' 55.80"N	77° 05' 28.46"E
4	10° 48' 55.85"N	77° 05' 29.43"E
5	10° 48' 57.23"N	77° 05' 31.50"E
6	10° 48' 58.87"N	77° 05' 30.77"E
7	10° 48' 58.93"N	77° 05' 31.51"E
8	10° 48' 01.48"N	77° 05' 30.62"E
9	10° 49' 01.67"N	77° 05' 32.15"E
10	10° 48' 59.01"N	77° 05' 32.66"E
11	10° 48' 58.99"N	77° 05' 32.32"E
12	10° 48' 56.05"N	77° 05' 33.44"E
13	10° 48' 55.38"N	77° 05' 32.34"E
14	10° 48' 55.19"N	77° 05' 32.20"E
15	10° 48' 54.08"N	77° 05' 30.42"E

DATUM : UTM-WGS84, ZONE 43 NORTH

PLATE NO-II

DATE OF SURVEY : 11.12.2020

APPLICANT:

THIRU.S.ABDUL JABBAR,
S/o. SHAND MOHAMMED RAWTHER,
NO.3/33, VADACHITHUR (POST),
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT.

LOCATION OF QUARRY LEASE APPLIED AREA:

S.F.Nos : 44/9(P), 45(p), 46/1, 47/3(p)
EXTENT : 2.16.5Ha,
VILLAGE : KURUNALLIPALAYAM,
TALUK : KINATHUKADAVU,
DISTRICT : COIMBATORE,
STATE : TAMIL NADU.

INDEX

Q.L. APPLIED AREA BOUNDARY	
7.5m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
APPROACH ROAD	
GRAVEL	
STRIKE DIP	
QUARRY PIT	
QUARRY ROAD	
ROUGH STONE	

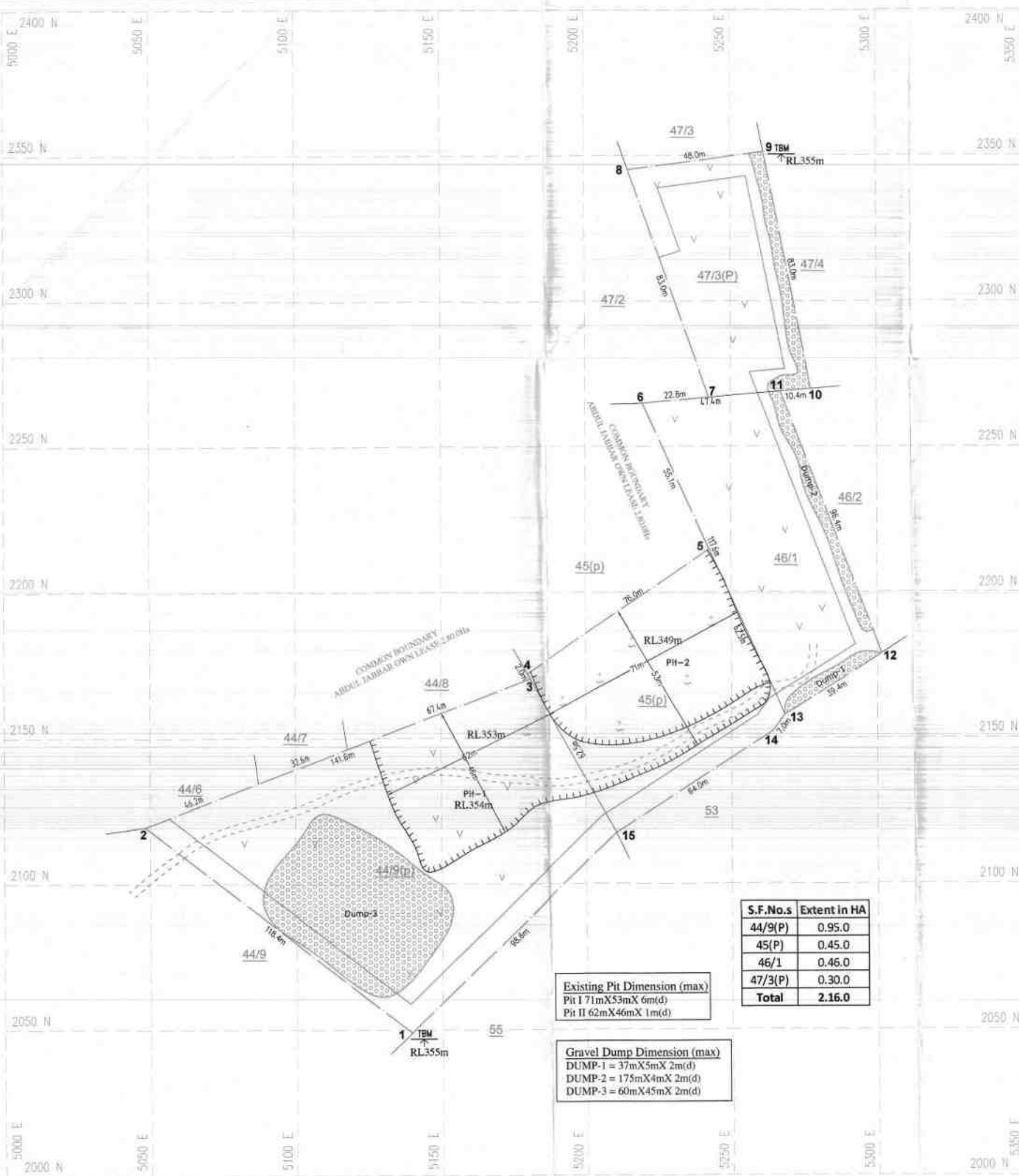
QUARRY LEASE & SURFACE PLAN
SCALE 1 : 1000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS
PLATE IS TRUE AND CORRECT TO THE
BEST OF MY KNOWLEDGE BASED UPON THE LEASMAP
AUTHENTICATED
BY STATE GOVERNMENT

94 A

M. SRINIVASULU REDDY, S.C. P.H.D.,
QUALIFIED PERSON



S.F.No.s	Extent in HA
44/9(P)	0.95.0
45(P)	0.45.0
46/1	0.46.0
47/3(P)	0.30.0
Total	2.16.0

Existing Pit Dimension (max)
Pit I 71mX53mX 6m(d)
Pit II 62mX46mX 1m(d)

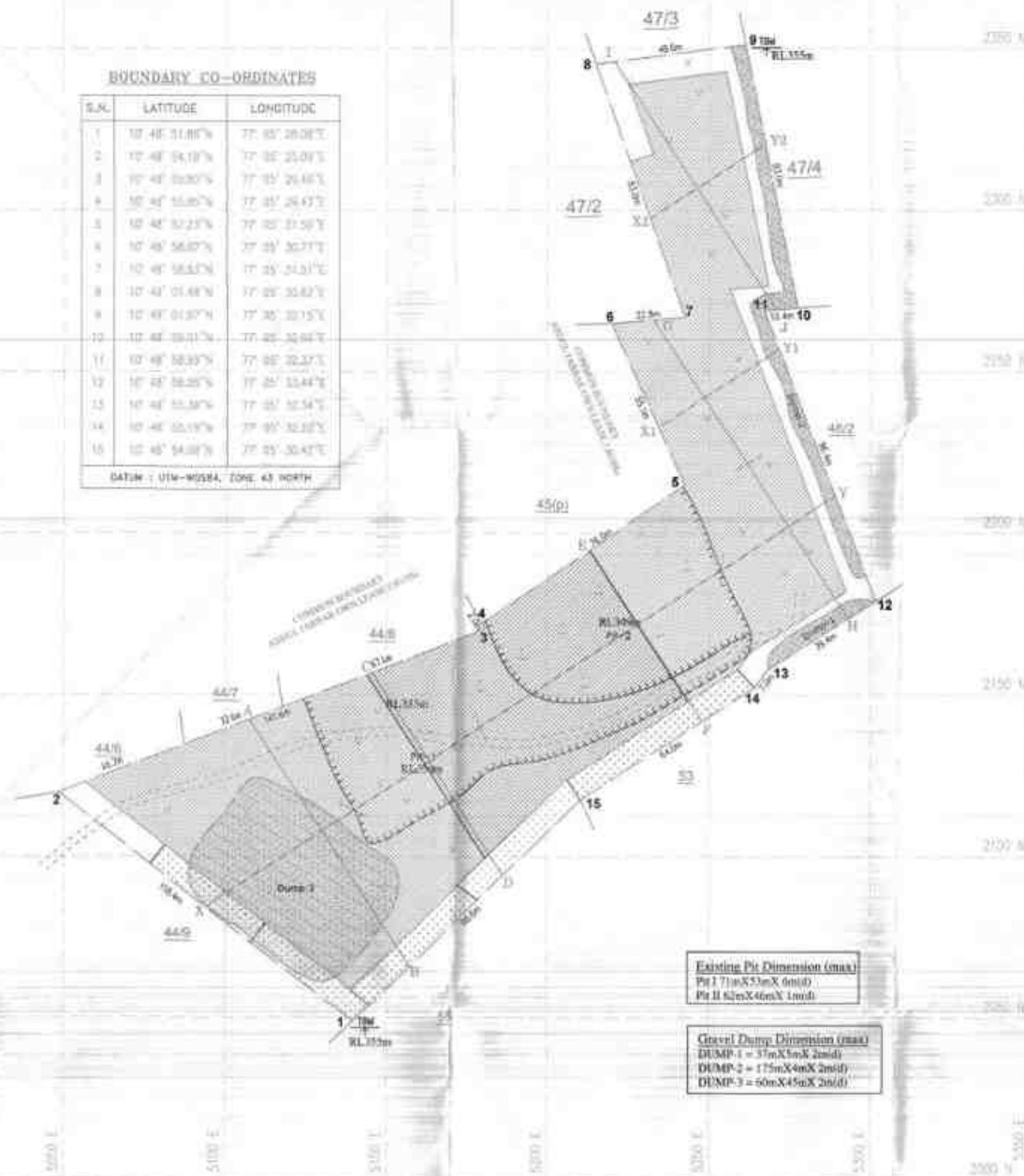
Gravel Dump Dimension (max)
DUMP-1 = 37mX5mX 2m(d)
DUMP-2 = 175mX4mX 2m(d)
DUMP-3 = 60mX45mX 2m(d)



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	10° 46' 51.88"N	77° 05' 26.08"E
2	10° 46' 54.19"N	77° 05' 25.09"E
3	10° 46' 56.50"N	77° 05' 24.10"E
4	10° 46' 58.81"N	77° 05' 23.11"E
5	10° 46' 59.23"N	77° 05' 21.59"E
6	10° 46' 56.87"N	77° 05' 20.77"E
7	10° 46' 56.57"N	77° 05' 21.21"E
8	10° 46' 55.48"N	77° 05' 20.82"E
9	10° 46' 51.97"N	77° 05' 20.75"E
10	10° 46' 59.91"N	77° 05' 20.64"E
11	10° 46' 58.93"N	77° 05' 20.27"E
12	10° 46' 58.25"N	77° 05' 20.44"E
13	10° 46' 55.98"N	77° 05' 20.54"E
14	10° 46' 55.19"N	77° 05' 20.88"E
15	10° 46' 54.09"N	77° 05' 20.47"E

DATUM : UTM-MGRS, ZONE 43 NORTH



Existing Pit Dimension (max)
 Pit I 71mX55mX 6m(d)
 Pit II 62mX46mX 1m(d)

Gravel Dump Dimension (max)
 DUMP-1 = 37mX3mX 2m(d)
 DUMP-2 = 175mX4mX 2m(d)
 DUMP-3 = 60mX45mX 2m(d)

PRESENT & POST LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA AT THE END OF THIS QUARRYING PERIOD (Ha)
AREA UNDER SHADING	0.86.8	1.80.8
DUMP	0.23.8	Nil
INFRASTRUCTURE	80	0.01.8
ROADS	0.01.8	0.02.8
GREEN BELT	80	0.17.8
UN-UTILIZED AREA	1.14.8	0.14.8
GRAND TOTAL	0.18.8	0.18.8

- LEGEND**
- I Y EXCAVATION
 - II Y EXCAVATION
 - III Y EXCAVATION
 - IV Y EXCAVATION
 - V Y EXCAVATION
 - I Y PLANTATION
 - II Y PLANTATION
 - III Y PLANTATION
 - IV Y PLANTATION
 - V Y PLANTATION

PLATE NO-III
 DATE OF SURVEY: 11.12.2020

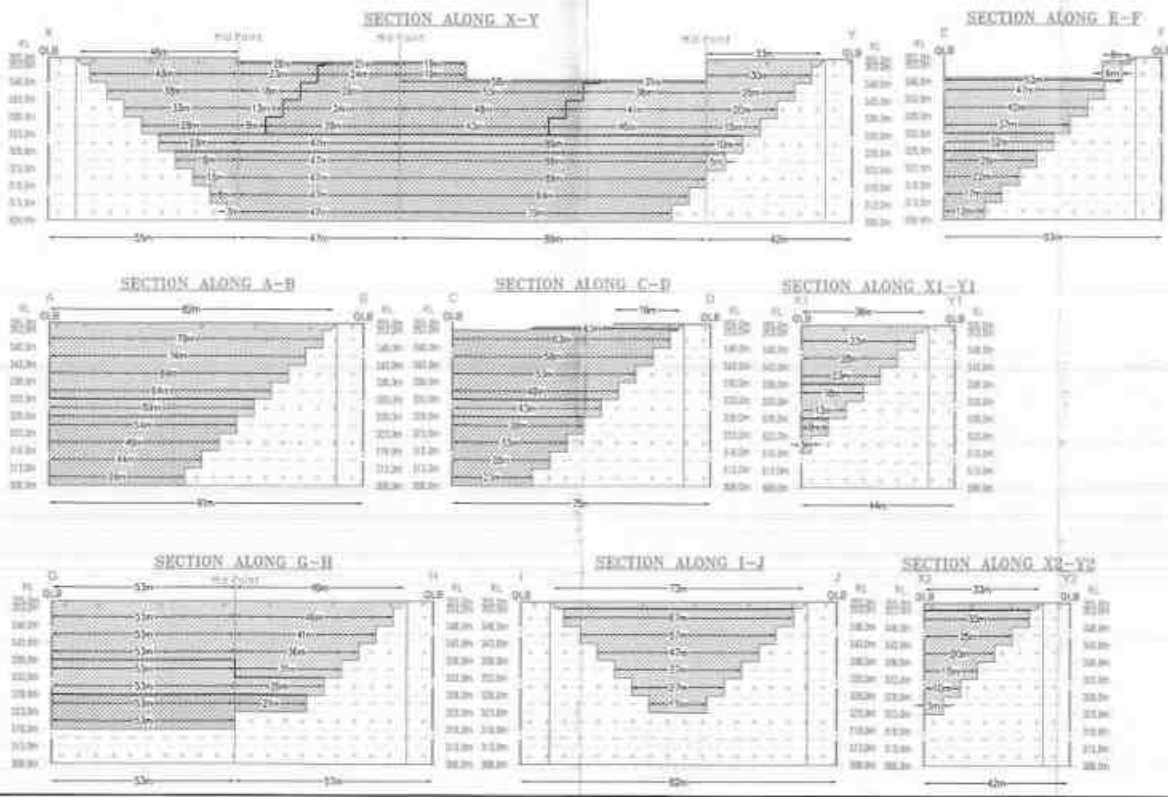
APPLICANT:
 THIRU J. ABDUL JABBAR,
 E/O. SHAMU MOHAMMED RAWTHER,
 NO.3/33, VADACHITHUR (POST),
 KINATHUKADAVU TALUK,
 COIMBATORE DISTRICT.

LOCATION OF QUARRY LEASE APPLIED AREA:
 S.F.No: 44/9(P)-48(p)-46/1,47/3(p)
 EXTENT : 2.16,842
 VILLAGE : KUBUNALP PALAYAM,
 TALUK : KINATHUKADAVU,
 DISTRICT : COIMBATORE,
 STATE : TAMIL NADU.

- INDEX**
- Q.L. APPLIED AREA BOUNDARY
 - 7.5m SAFETY DISTANCE
 - TEMPORARY BENCH MARK
 - APPROACH ROAD
 - GRAVEL
 - STRIKE DIP
 - QUARRY PIT
 - QUARRY ROAD
 - ROUGH STONE

TOPOGRAPHY, GEOLOGICAL, YEARWISE DEVELOPMENT & PRODUCTION PLAN & 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 AND BELIEF.
 95 A

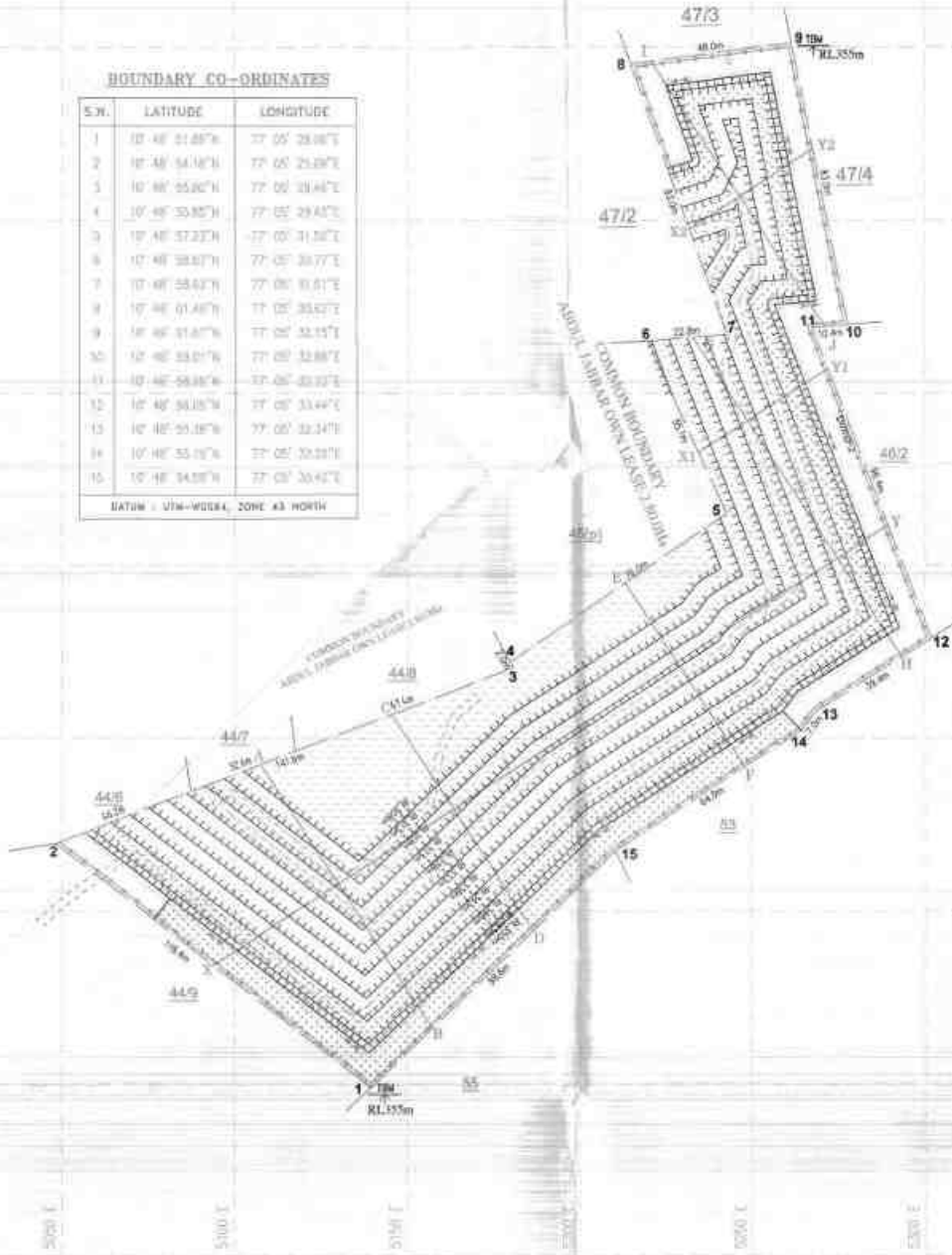




BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	10° 40' 21.897"N	77° 05' 23.987"E
2	10° 40' 34.103"N	77° 05' 23.987"E
3	10° 40' 55.897"N	77° 05' 23.987"E
4	10° 40' 35.897"N	77° 05' 29.447"E
5	10° 40' 57.223"N	77° 05' 31.567"E
6	10° 40' 38.897"N	77° 05' 35.777"E
7	10° 40' 58.617"N	77° 05' 33.817"E
8	10° 40' 01.487"N	77° 05' 35.677"E
9	10° 40' 31.617"N	77° 05' 32.157"E
10	10° 40' 53.017"N	77° 05' 32.887"E
11	10° 40' 58.887"N	77° 05' 33.977"E
12	10° 40' 38.187"N	77° 05' 33.447"E
13	10° 40' 55.897"N	77° 05' 32.147"E
14	10° 40' 55.187"N	77° 05' 32.877"E
15	10° 40' 34.587"N	77° 05' 33.427"E

DATUM : UTM-WGS84, ZONE 43 NORTH



I-V Tr PLANTATION

Proposed Pit Dimension (max)
217mX103mX 47m(d)

WELL SERVICES

- 1 - CHANG
- 2 - CHANG
- 3 - BEST POND
- 4 - POND
- 5 - HANNAKOR

PLATE NO-IV
DATE OF SURVEY : 11.12.2020

APPLICANT:
THIRU J ABUL JASSAR,
S/O. SHAM MOHAMMED RAWTHER,
NO.3/55, VADACHETHUR (POST),
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT.

LOCATION OF QUARRY LEASE APPLIED AREA:
S.F.No : 44/9(T), 45(p), 46(I), 47/3(p)
EXTENT : 2.16.54H,
VILLAGE : KURUNALI PALAYAM,
TALUK : KINATHUKADAVU,
DISTRICT : COIMBATORE,
STATE : TAMIL NADU.

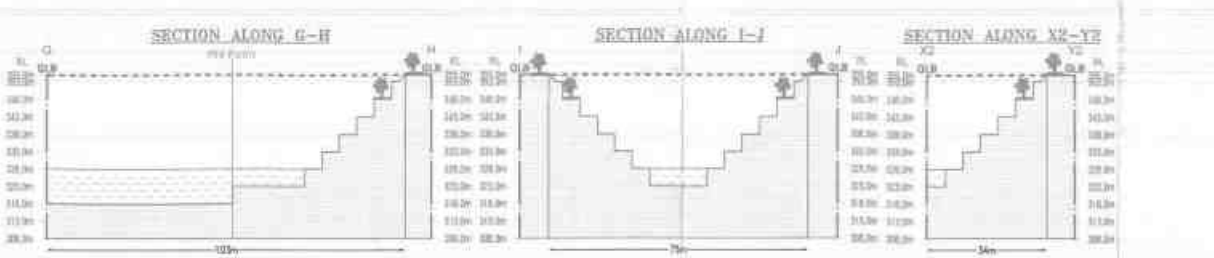
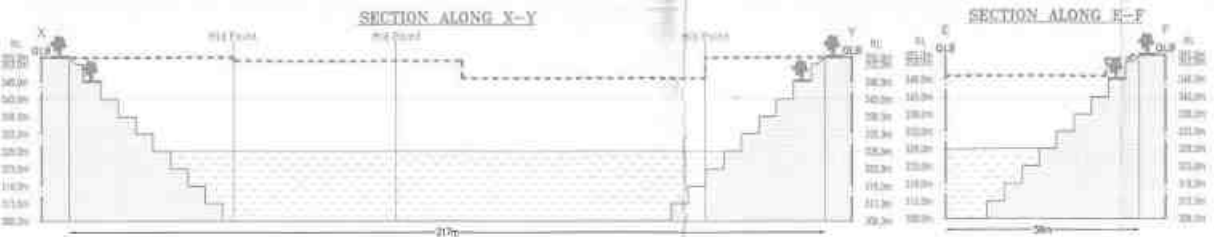
INDEX

Q.L. APPLIED AREA BOUNDARY	[Symbol]
7.5m SAFETY DISTANCE	[Symbol]
TEMPORARY BENCH MARK	[Symbol]
APPROACH ROAD	[Symbol]
STRIKE OP	[Symbol]
QUARRY PIT	[Symbol]
QUARRY ROAD	[Symbol]
REHABILITATED LANDFORM	[Symbol]
EXISTING LANDFORM	[Symbol]
OLD SURFACE LEVEL	[Symbol]
FINISHED SURFACE LEVEL	[Symbol]
TREES	[Symbol]
SOIL LAYER	[Symbol]
RAIN WATER STORAGE	[Symbol]
FENCING	[Symbol]
PROPOSED GARLAND DRAIN	[Symbol]

PROGRESSIVE QUARRY CLOSURE PLAN & 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 and belief.

96 A

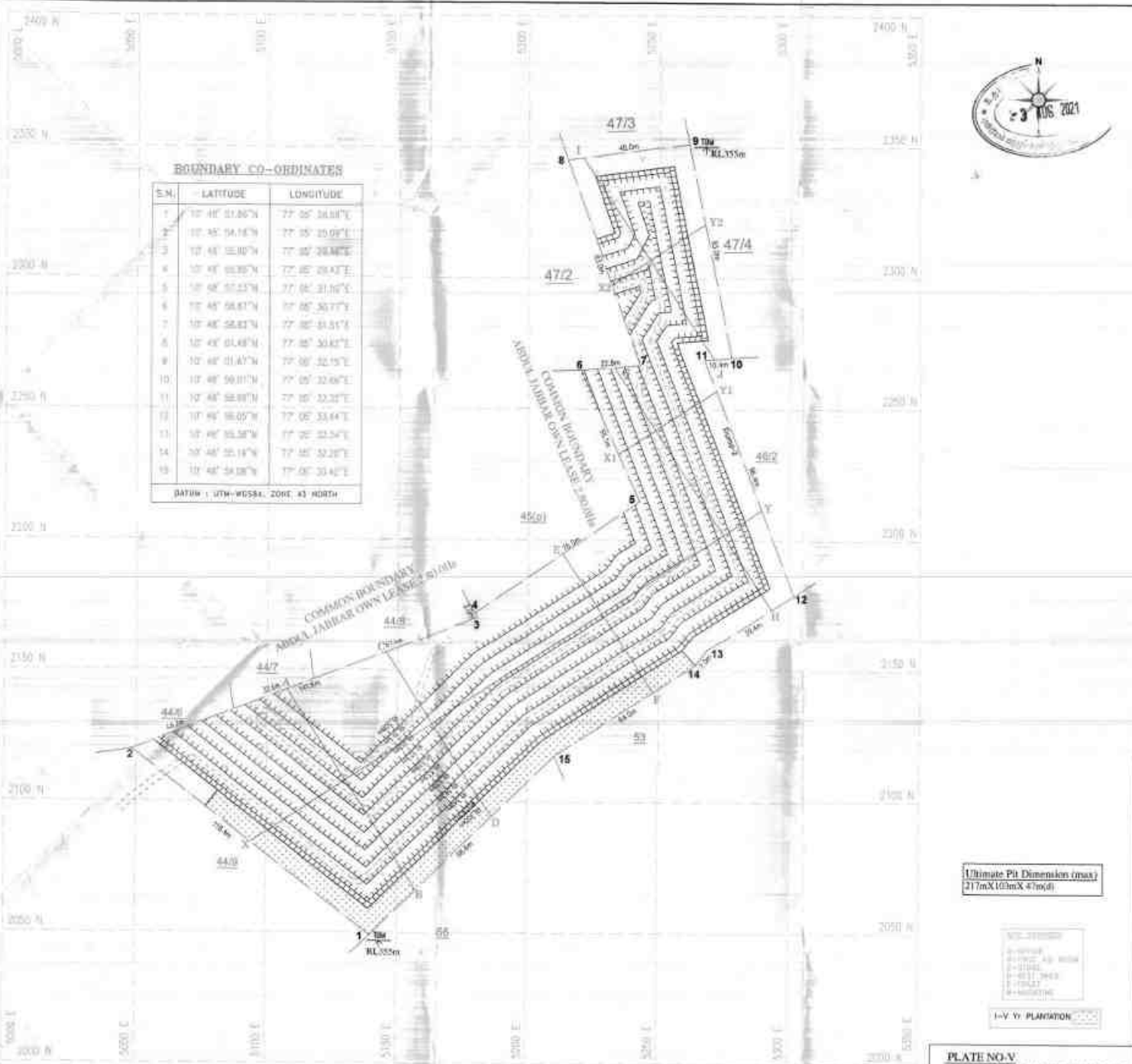




BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	10° 48' 51.867"N	77° 05' 38.817"E
2	10° 45' 54.167"N	77° 05' 32.021"E
3	10° 45' 52.307"N	77° 05' 28.847"E
4	10° 45' 52.357"N	77° 05' 28.847"E
5	10° 45' 52.227"N	77° 05' 31.817"E
6	10° 45' 58.817"N	77° 05' 30.817"E
7	10° 45' 58.817"N	77° 05' 31.517"E
8	10° 45' 51.677"N	77° 05' 32.517"E
9	10° 45' 59.817"N	77° 05' 32.617"E
10	10° 45' 58.817"N	77° 05' 32.617"E
11	10° 45' 58.817"N	77° 05' 32.217"E
12	10° 45' 58.057"N	77° 05' 33.417"E
13	10° 45' 55.257"N	77° 05' 32.517"E
14	10° 45' 55.157"N	77° 05' 32.217"E
15	10° 45' 54.287"N	77° 05' 33.417"E

DATUM : UTM-WGS84, ZONE 43 NORTH



Ultimate Pit Dimension (max)
217mX103mX 47m(d)



PLATE NO-V
DATE OF SURVEY: 11.12.2020

APPLICANT:
THRU S. ABUL JABBAR
S/O. SHAM MOHAMMED RAUWER
NO.3/33, VADACHIHUBI (PO),
KINATHURKADAVU TALUK,
COMBATOORE DISTRICT.

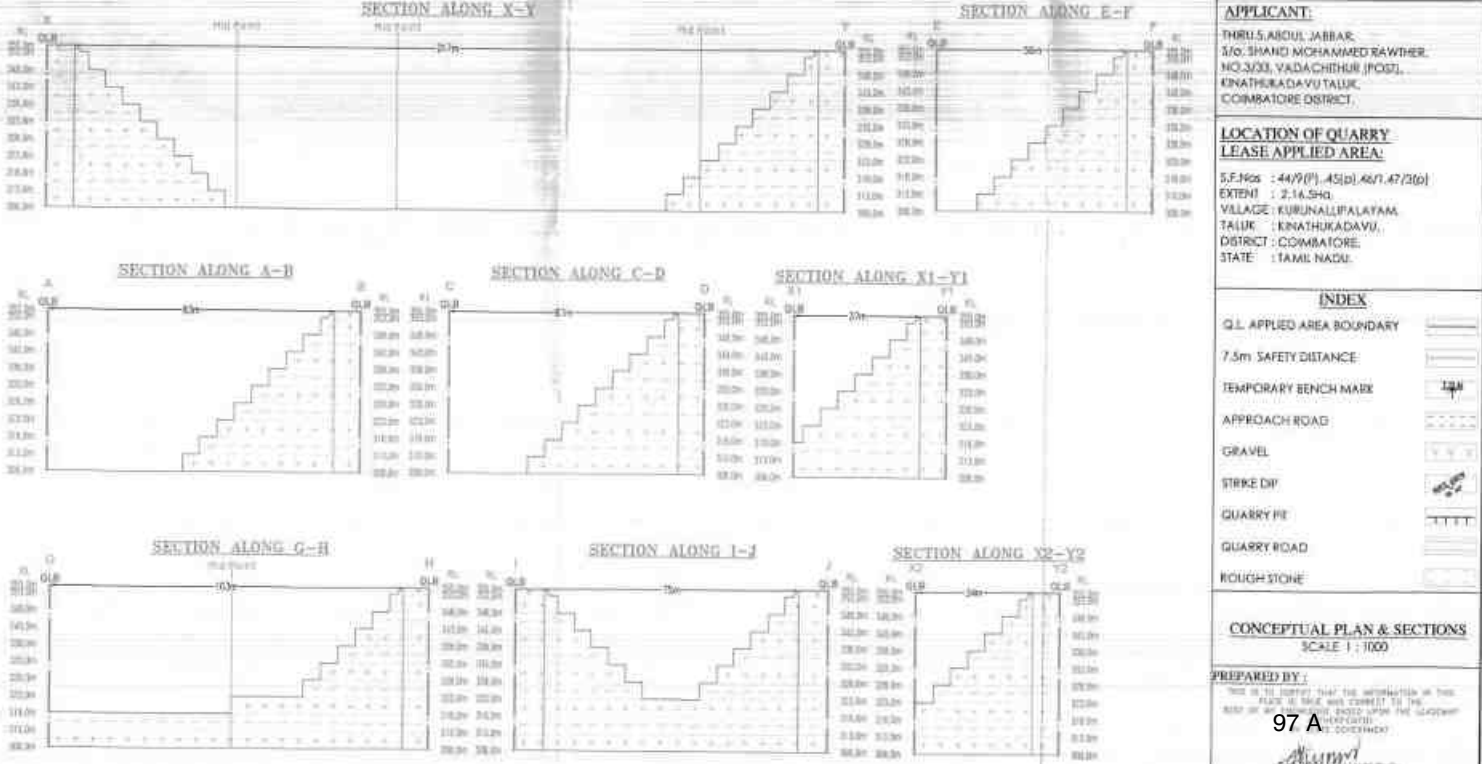
LOCATION OF QUARRY LEASE APPLIED AREA:
S.F.No.s : 44/9(P), 45(a), 46/1, 47/2(a)
EXTN : 2.1A.SHQ
VILLAGE : KUBINALLIPALAYAM
TALUK : KINATHURKADAVU,
DISTRICT : COMBATOORE,
STATE : TAMIL NADU.

INDEX

Q.L. APPLIED AREA BOUNDARY	
7.5m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
APPROACH ROAD	
GRAVEL	
STRIKE DIP	
QUARRY PIT	
QUARRY ROAD	
ROUGH STONE	

CONCEPTUAL PLAN & SECTIONS
SCALE 1 : 1000

PREPARED BY:
[Signature]
97 A



தீர்ப்பு நிர்வாக பிழைகள் பிழைகள்
 சிந்தனையுடைய தீர்ப்பு
 நாள் - 8/7/2021

கோயம்புத்தூர் மாவட்டம், திணைத்துக்கடவு வட்டம்
 வாசிக்ரீடர் தீர்ப்பு, கிடை எண் 313 அண்முகவரியில் சிறீத
 வலிம் சிறீ. சாதிக்ரீடர் முகவிரி மகன் சிறீதலி சிறீபர்
 தகவல் பெறியும் வட்டம், சிந்தனையுடைய தீர்ப்பு தீர்ப்பு
 பாதிக்கப்பட்ட துல எண் 44/9 டி-ல் 1.64.0 மெட்ரிகில் 0.95.0
 மெட்ரிகில் மடகம், துல எண் 45 (P)ல் 1.03.0 மெட்ரிகில் 0.45.0
 மெட்ரிகில் மடகம், துல எண் 46/1ல் 0.46.0 மெட்ரிகில், துல எண் 47/3 (P)
 ல் 0.73.0 மெட்ரிகில் 0.30.0 மெட்ரிகில் 2.16.5 மெட்ரிகில்
 பரப்பளவு துல எண் சாதாரண கிடை மகிஷம் தீர்ப்பு மண் மெட்ரிகில்
 சிதைவு தீர்ப்புள்ளார். தீர்ப்பு துல எண் 47/3 (P)ல் 2.16.5 மெட்ரிகில்
 மட்டம் துல எண் சாதாரண கிடை மகிஷம் தீர்ப்பு மண் மெட்ரிகில்
 தீர்ப்பு, மண்மிகுதலிகள் 300 டி சாதாரணமில் சிறீதலி சிறீபர், சிந்தனையுடைய
 மெட்ரிகில் தீர்ப்புள்ளார். சாதாரண கிடை மகிஷம் தீர்ப்பு


 தீர்ப்பு நிர்வாக பிழைகள் பிழைகள்
 31, சிந்தனையுடைய தீர்ப்பு
 திணைத்துக்கடவு வட்டம்.



**TOPOGRAPHICAL VIEW OF KURUNALLIPALAYAM ROUGH STONE
AND GRAVEL QUARRY LEASE APPLIED AREA**



Name of the Applicant : **Abdul Jabbar,**
S/o. Shand Mohammed Rawther,
Address : No.3/33, Vadachithur Post,
Kinathukadavu Taluk, Coimbatore District,
Tamil Nadu State – 641 202.

LOCATION DETAILS

Extent : 2.16.5ha
S.F.Nos. : 44/9 (P), 45 (P), 46/1 & 47/3 (P)
Village : Kurunallipalayam
Taluk : Kinathukadavu
District : Coimbatore
State : Tamil Nadu

Signature of the applicant

Abdul Jabbar

கிராம நிர்வாக அலுவலர் (2021)
31, கு.ஆதல்விடமளையம் கிராமம்,
கிணத்துக்கடவு வட்டம்.

(Village Administrative Officer)

Attestation



TAMILNADU POLLUTION CONTROL BOARD

CONSENT ORDER NO. 170812833116

DATED: 01/08/2017.

PROCEEDINGS NO.F.1765CBS/RS/DEE/TNPCB/CBS/W/2017 DATED: 01/08/2017

SUB: Tamil Nadu Pollution Control Board - RENEWAL OF CONSENT – M/s. S.A. JAPPAR STONE QUARRY , S.F.No. 43/4 Part, 43/5 Part, 43/10, 44/6, 44/7, 44/8 Part, 45 Part, 47/1 Part, 47/2 Part, KURUNALLIPALAYAM village, Kinathukadavu Taluk and Coimbatore District - Renewal of Consent for the operation of the plant and discharge of sewage and/or trade effluent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) – Issued- Reg.

REF: 1. CTO Proc. No. F.CBS1906/RS/DEE/TNPCB/CBS/A&W/2014 dated 12.08.2014
2. Unit's application id 2833116 for CTO-renew dated 01.08.2017
3. I.R No: F. 1765CBS/RS/AE/CBS/2017 dated 01.08.2017

RENEWAL OF CONSENT is hereby granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act, 6 of 1974) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Proprietor
M/s.S.A. JAPPAR STONE QUARRY,
S.F.No. 43/4 Part, 43/5 Part, 43/10, 44/6, 44/7, 44/8 Part, 45 Part, 47/1 Part, 47/2 Part,
KURUNALLIPALAYAM Village ,
Kinathukadavu Taluk ,
Coimbatore District .

Authorising the occupier to make discharge of sewage and /or trade effluent.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This RENEWAL OF CONSENT is valid for the period ending March 31, 2019

A. SHANMUGAM

**District Environmental Engineer,
Tamil Nadu Pollution Control Board,
COIMBATORE SOUTH**

Digitally signed by A. SHANMUGAM
DN: cn=A. SHANMUGAM, o=TAMILNADU POLLUTION CONTROL BOARD,
ou=ENGINEERING DEPARTMENT, postalCode=641004, st=Tamil
Nadu,
2.5.4.20=4188802824312300619881026142666828831023
297E78429623A, email=SHANMUGAM
Date: 2017.08.01 18:48:58 +05'30'



TAMILNADU POLLUTION CONTROL BOARD
SPECIAL CONDITIONS

1. This renewal of consent is valid for operating the facility for the manufacture of products/byproducts (Col. 2) at the rate (Col 3) mentioned below. Any change in the product/byproduct and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
Product Details			
1.	Rough Stone Quarrying Area in SF No. 43/4 Part, 43/5 Part, 43/10, 44/6, 44/7, 44/8 Part, 45 Part, Kurunellipalayam Village, Kinathukadavu Tk, Coimbatore Dt. (Latitude 10 49' 00.72" N to 10 48' 59" N, and Longitude 77 05' 23" E to 77 05' 31" E)	2.80	Hectares
2.	Rough Stone	93455	Cu.M/Five Years
3.	Gravel	10560	Cu.M/Five Years

2. This renewal of consent is valid for operating the facility with the below mentioned outlets for the discharge of sewage/trade effluent. Any change in the outlets and the quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Outlet No.	Description of Outlet	Maximum daily discharge in KLD	Point of disposal
Effluent Type : Sewage			
1.	Sewage	0.25	On Industrys own land
Effluent Type : Trade Effluent			





TAMILNADU POLLUTION CONTROL BOARD

Additional Conditions:

1. The unit shall not generate trade effluent at any stage of the manufacturing process.
2. The unit shall ensure that Noise / Air emission / Liquid effluent discharge standards as issued in Environmental protection Act 1986, as amended.
3. The unit shall comply with the conditions stipulated in the Environmental Clearance issued to the unit.
4. The unit shall carry out the rough stone and gravel mining operation as per the conditions stipulated in the approved mining plan.
5. The unit shall comply with the conditions stipulated in the mining lease issued to the unit by the District Collector, Coimbatore.
6. The mining operation and the vehicle movements shall not arise any public complaints from the nearby villages.
7. The drilling and blasting operation shall not give raise to any complaint from the public due to the noise pollution and cracks in the buildings due to vibration.
8. The mining operation shall not make any adverse impact on flora and fauna in the nearby area.
9. In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification. Failing to remit the consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the unit as per law.

A. SHANMUGAM

Digitally signed by A. SHANMUGAM
DN: cn=A. SHANMUGAM, o=TAMILNADU POLLUTION CONTROL BOARD,
ou=ENVIRONMENTAL DEPARTMENT, postalCode=641004, st=Tamil Nadu,
c=IN, email=shnmugam@tamilnadupollutioncontrolboard.org,
serial=20170801 164925 4878

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
COIMBATORE SOUTH

To ✓
The Proprietor,
M/s.S.A. JAPPAR STONE QUARRY,
S.F No. 43/4 Part, Kurunellipalayam Village, Kinathukadavu Taluk Coimbatore District.,
Pin: 642109

Copy to:

- 1.The Commissioner, KINATHUKADAVU-Panchayat Union, Kinathukadavu Taluk, Coimbatore District .
2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.
3. Copy submitted to the JCEE-Monitoring, Tamil Nadu Pollution Control Board, Coimbatore for favour of kind information.
4. File

1026/20
337/20



அனுப்புநர்:
மரு.இரா.வைத்திநாதன், இ.ஆ.ப.,
சார் ஆட்சியர்,
பொருள்வளச்சி
அய்யர்

பெறுநர்:
மாவட்ட ஆட்சியர்,
கோயம்புத்தூர்.

ந.க.எண்:1467/2020/அ2

நாள்: 14.10.2020.

பொருள் : கனிமங்களும், சுரங்கங்களும் - குவாரி குத்தகை உரிமம் - கோயம்புத்தூர் மாவட்டம் - கிணத்துக்கடவு வட்டம் - குருநல்லிபாளையம் கிராமம் - புல எண் 44/9(பகுதி)-ல் 1.64.0 ஹெக்டேரில் 0.95.0 ஹெக்டேர், 45(பகுதி)-ல் 1.03.0 ஹெக்டேரில் 0.45.0 ஹெக்டேர், 46/1-ல் 0.46.0 ஹெக்டேர், 47/3(பகுதி)-ல் 0.73.0 ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோரி திரு.S.அப்துல் ஜப்பார் என்பவர் மனு செய்துள்ளது - அறிக்கை அனுப்புதல் - தொடர்பாக.

- பார்வை : 1 கோயம்புத்தூர், மாவட்ட ஆட்சியர் அவர்களின் கடிதம் ந.க.எண்.337/கனிமம்/2020, நாள்.24.07.2020.
2 கிணத்துக்கடவு வட்டாட்சியர் அறிக்கை ந.க.1603/2020/ஆ1, நாள்: 29.09.2020

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண் 44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 பு.ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் திரு.S.அப்துல் ஜப்பார் த/பெ.சாந்துமுகமது என்பவர் சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோரியது தொடர்பாக பார்வை -2-யில் காணும் கிணத்துக்கடவு வட்டாட்சியர் அறிக்கையின் பேரில் பிரஸ்தாப புலத்தினை புலத்தணிக்கை மேற்கொண்டு எனதறிக்கையினை பின்வருமாறு சமர்ப்பிக்கிறேன்.

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், பட்டா எண்.99-இல் புல.எண்.44/9 நெ.காலையில் 1.64.0 பு.ஹெக்டேர் பரப்பானது ஜப்பார் என்கிற அப்துல் ஜப்பார் என்பவருக்கு தனியாக பாத்தியப்பட்டது. பட்டா எண்.608-இல் புல எண். 45 நெ.காலையில் 1.03.0 ஹெக்டேர் பரப்பும், பட்டா எண்.783- இல் புல எண்.46/1 நெ.காலையில் 0.46.0 ஹெக்டேர் பரப்பும், புலஎண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேர் பரப்பும் லேட்.சாந்து முகம்மது ராவுத்தர் மகன் ஜப்பார் (எ) அப்துல் ஜப்பார் என்பவருக்கு தனியாக பாத்தியப்பட்டது.

மேற்படி புலங்களில் மனுதாரருக்கு பாத்தியப்பட்ட மேற்படி கிராமம், பட்டா எண்கள்.680 மற்றும் 783 -களில் புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் மொத்தப்பரப்பு 0.73.0 பு.ஹெக்டேரில் 0.30.5 பு.ஹெக்டேர் பரப்பிலும், மனுதாரரின் மகன் மேற்படி கிராமத்தில் பட்டா எண்.99-இன்படி பாத்தியப்பட்ட புல.எண்.44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 ஹெக்டேர் பரப்பிலும் என ஆக மொத்தம் 2.16.5 பு.ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க மனுதாரர் அனுமதி கோரியுள்ளார்.

மனுதாரரின் மகன் A.தாரிக் அஜீஸ் த/பெ. S.அப்துல் ஐப்பார் என்பவர் மேற்படி கிராமத்தில் தனியருக்கு பாத்தியப்பட்ட புல எண். 44/9 ல் பு.ஹெக்டேர் 1.64.0 பு.ஹெக்டேரில் 0.95.0 ஹெக்டேர் பரப்பில் மனுதாரருக்கு மாவட்ட ஆட்சியர் அனுமதி வழங்கிய பின் 5 ஆண்டுகளுக்கு கல் உடைத்துக் கொள்ள சம்மதம் தெரிவித்து சம்மதக்கடிதம் அளித்துள்ளார். சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க தகப்பனார் பெயரில் குத்தகை உரிமம் வழங்குவதில் எந்தவித ஆட்சேபணையும் இல்லை என மனுதாரரின் குமாரர் A.தாரிக் அஜீஸ் என்பவர் சம்மதக் கடிதம் அளித்துள்ளார். மேலும் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரி விண்ணப்பித்துள்ள உரிமத்திற்கான கட்டணத்தொகை ரூ.1500/- ஐ பாரத ஸ்டேட் வங்கி சலான்.137 நாள்.23.07.2020-ன்படி செலுத்தியுள்ளார்.

மேற்படி காலைகளில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க மனுதாரருக்கு குத்தகை உரிமம் வழங்குவது தொடர்பாக பொதுமக்களுக்கு ஆட்சேபணையேதுமில்லை எனத் தெரிவித்து பொதுமக்கள் வாக்குமூலம் அளித்துள்ளனர். மனுதாரர் குவாரி குத்தகை உரிமம் கோரும் புலங்களான புல எண்கள். 44/9, 45, 46/1 மற்றும் 47/3 நெ.காலைகளின் புல எல்லைகளாக வடக்கில் மனுதாரருக்கு பாத்தியப்பட்ட புல எண் 47/3 நெ.காலையில் மீதமுள்ள பூமி மற்றும் மனுதாரருக்கு பாத்தியப்பட்ட கிரஷர், கல்குவாரியும், தெற்கில் புல எண். 46/2 நெ.காலை மற்றும் 46/3 ஆகிய காலைகளும், கிழக்கில் மனுதாரரின் மனைவி ஷக்கிலாபானு என்பவருக்கு பாத்தியப்பட்ட புல எண். 46/2 நெ.காலை பூமியும், மேற்கில் மனுதாரருக்கு பாத்தியப்பட்ட புல.எண்.44/9 நெ.காலையில் மீதமுள்ள பூமியும், கிழமேலாக செல்லும் வடசித்தூர்- மன்றாம்பாளையம் செல்லும் பிரதான சாலையும் எல்லைகளாக அமைந்துள்ளன.

மேற்படி புலங்களிலிருந்து கிழக்கில் சுமார் 30 மீ தொலைவில் முருகேசன் என்பவருக்கு பாத்தியப்பட்ட வீடு உள்ளது. மேற்படி வீட்டில் தற்போது யாரும் குடியில்லை



மற்றும் 50 மீ தொலைவில் வரதகுமாராஜ் என்பவருக்கு பாத்தியப்பட்ட முத்துலட்சுமி அன்கோ என்ற பெயரில் தார் பிளாண்டு உள்ளது. தென்கிழக்கில் சுமார் 100 மீ தொலைவில் நடராஜ் மற்றும் வெங்கடாசலம் என்பவர்களுக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத இரண்டு வீடுகளும், தெற்கில் சுமார் 150 மீ தொலைவில் முருகானந்தம் மற்றும் ஆறுச்சாமி என்பவர்களுக்கு பாத்தியப்பட்ட இரண்டு அங்கீகரிக்கப்படாத வீடுகளும், மேற்கில் தென்வடலாக வடசித்தூர் - நெகமம் செல்லும் பிராதான சாலையும், மேற்படி கிரஷர் நிறுவனத்தின் அலுவலகம் (2 தார்க்கு கட்டிடம்) மற்றும் ஓட்டு கட்டிடம் ஒன்றும் அமைந்துள்ளது. வடமேற்கில் சுமார் 100 மீ தொலைவில் வெங்கடாசலம் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், வடக்கில் சுமார் 100 மீ தொலைவில் ராஜேந்திரன் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், அமைந்துள்ளன.

பிரஸ்தாப புலங்களிலிருந்து 500 மீ சுற்றளவில் அரசு கட்டிடங்கள், அங்கீகரிக்கப்பட்ட வீட்டு மனைகள், கோவில்கள், தேவாலயங்கள், மசூதிகள் போன்ற இன்னபிற வழிபாட்டுத் தலங்கள் மற்றும் புராதானச் சின்னங்கள் ஏதும் இல்லை. மேற்படி பூமிகள் வழியாக வாய்க்கால் / ஓடை ஏதும் செல்லவில்லை. மேற்படி புலங்களிலிருந்து உயர் மின் அழுத்த கம்பிகள் ஏதும் செல்லவில்லை. மேற்படி புலங்களிலிருந்து 500 மீ சுற்றளவில் தேசிய நெடுஞ்சாலை ஏதும் அமையப் பெறவில்லை. பிரஸ்தாப புலமானது நிபந்தனை ஒப்படை பூமியோ, நில உச்ச வரம்பிற்குட்பட்ட பூமியாகவோ, நிலச் சீர்திருத்தச் சட்டத்தின் கீழ் கவரப்பட்ட பூமியாகவோ, அரசு புறம் போக்கு பூமியாகவோ இல்லை.

எனவே, கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண் 44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் மட்டும் திரு.S.அப்துல் ஜப்பார் த/பெ.சாந்துமுகமது என்பவர் சாதாரணகற்கள் மற்றும் கிராவல் மண். வெட்டியெடுக்க குவாரி குத்தகை உரிமம் வழங்கிட பரிந்துரை செய்து, தொடர்புடைய கிராம ஆவணங்களை இத்துடன் இணைத்தனுப்பியுள்ளேன் என்பதைப் பணிவுடன் தெரிவித்துக்கொள்கிறேன்.

இணைப்பு: தொடர்புடைய ஆவணங்கள்.

தங்கள் உண்மையுள்ள,

சார் ஆட்சியர்,
பொள்ளாச்சி

1/2

14/10/2020

STW

புலத்தணிக்கைக் குறிப்பு

தணிக்கை அலுவலர் : சார் ஆட்சியர், பொள்ளாச்சி.
தணிக்கை நாள் : 13.10.2020
தணிக்கை க.ச.எண் : புல எண்.44/9,46/1,47/3 மற்றும் 45
தணிக்கை கிராமம் : குருநல்லிபாளையம் கிராமம்
தணிக்கையின் நோக்கம் : சாதாரண கற்கள் மற்றும் கிராவல்
மண்வெட்டி எடுக்க அனுமதி
கோரியது - தொடர்பாக.

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண் 44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 பு.ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் திரு.S.அப்துல் ஜப்பார் த/பெ.சாந்துமுகமது என்பவர் சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோரியது தொடர்பாக பிரஸ்தாப புலமானது 13.10.2020 இன்று என்னால் புலத்தணிக்கை மேற்கொள்ளப்பட்டது.

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், பட்டா எண்.99-இல் புல.எண்.44/9 நெ.காலையில் 1.64.0 பு.ஹெக்டேர் பரப்பானது ஜப்பார் என்கிற அப்துல் ஜப்பார் என்பவருக்கு தனியாக பாத்தியப்பட்டது. பட்டா எண்.608-இல் புல எண். 45 நெ.காலையில் 1.03.0 ஹெக்டேர் பரப்பும், பட்டா எண்.783- இல் புல எண்.46/1 நெ.காலையில் 0.46.0 ஹெக்டேர் பரப்பும், புலஎண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேர் பரப்பும் லேட்சாந்து முகம்மது ராவுத்தர் மகன் ஜப்பார் (எ) அப்துல் ஜப்பார் என்பவருக்கு தனியாக பாத்தியப்பட்டது.

மேற்படி புலங்களில் மனுதாரருக்கு பாத்தியப்பட்ட மேற்படி கிராமம், பட்டா எண்கள்.680 மற்றும் 783 -களில் புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் மொத்தப்பரப்பு 0.73.0 பு.ஹெக்டேரில் 0.30.5 பு.ஹெக்டேர் பரப்பிலும், மனுதாரரின் மகன் மேற்படி கிராமத்தில் பட்டா எண்.99-இன்படி பாத்தியப்பட்ட புல.எண்.44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 ஹெக்டேர் பரப்பிலும் என ஆக மொத்தம் 2.16.5 பு.ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க மனுதாரர் அனுமதி கோரியுள்ளார்.

மனுதாரரின் மகன் A.தாரிக் அஜீஸ் த/பெ. S.அப்துல் ஜப்பார் என்பவர் மேற்படி கிராமத்தில் தனியருக்கு பாத்தியப்பட்ட புல எண். 44/9 ல் பு.ஹெக்ட 1.64.0 பு.ஹெக்டேரில் 0.95.0 ஹெக்டேர் பரப்பில் மனுதாரருக்கு மாவட்ட ஆட்சியர் அனுமதி வழங்கிய பின் 5 ஆண்டுகளுக்கு கல் உடைத்துக் கொள்ள சம்மதம் தெரிவித்து சம்மதக்கடிதம் அளித்துள்ளார். சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க

தகப்பனார் பெயரில் குத்தகை உரிமம் வழங்குவதில் எந்தவித ஆட்சேபணையும் இல்லை என மனுதாரரின் குமார் A.தாரிக் அஜீஸ் என்பவர் சம்மதக் கடிதம் அளித்துள்ளார். மேலும் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரி விண்ணப்பித்துள்ள உரிமத்திற்கான கட்டணத்தொகை ரூ.1500/- ஐ பாரத ஸ்டேட் வங்கி சலான்.137 நாள்.23.07.2020-ன்படி செலுத்தியுள்ளார்.

மேற்படி காலைகளில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க மனுதாரருக்கு குத்தகை உரிமம் வழங்குவது தொடர்பாக பொதுமக்களுக்கு ஆட்சேபணையேதுமில்லை எனத் தெரிவித்து பொதுமக்கள் வாக்குமூலம் அளித்துள்ளனர்.

மனுதாரர் குவாரி குத்தகை உரிமம் கோரும் புலங்களான புல எண்கள். 44/9, 45, 46/1 மற்றும் 47/3 நெ.காலைகளின் புல எல்லைகளாக வடக்கில் மனுதாரருக்கு பாத்தியப்பட்ட புல எண் 47/3 நெ.காலையில் மீதமுள்ள பூமி மற்றும் மனுதாரருக்கு பாத்தியப்பட்ட கிரவுள், கல்குவாரியும், தெற்கில் புல எண். 46/2 நெ.காலை மற்றும் 46/3 ஆகிய காலைகளும், கிழக்கில் மனுதாரரின் மனைவி ஷக்கிலபானு என்பவருக்கு பாத்தியப்பட்ட புல எண். 46/2 நெ.காலை பூமியும், மேற்கில் மனுதாரருக்கு பாத்தியப்பட்ட புல.எண்.44/9 நெ.காலையில் மீதமுள்ள பூமியும், கிழமேலாக செல்லும் வடசித்தூர்-மன்றாம்பாளையம் செல்லும் பிரதான சாலையும் எல்லைகளாக அமைந்துள்ளன.

மேற்படி புலங்களிலிருந்து கிழக்கில் சுமார் 30 மீ தொலைவில் முருகேசன் என்பவருக்கு பாத்தியப்பட்ட வீடு உள்ளது. மேற்படி வீட்டில் தற்போது யாரும் குடியில்லை மற்றும் 50 மீ தொலைவில் வரதகுமாரராஜ் என்பவருக்கு பாத்தியப்பட்ட முத்துலட்சுமி அன்கோ என்ற பெயரில் தார் பிளாண்டு உள்ளது. தென்கிழக்கில் சுமார் 100 மீ தொலைவில் நடராஜ் மற்றும் வெங்கடாசலம் என்பவர்களுக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத இரண்டு வீடுகளும், தெற்கில் சுமார் 150 மீ தொலைவில் முருகானந்தம் மற்றும் ஆறுச்சாமி என்பவர்களுக்கு பாத்தியப்பட்ட இரண்டு அங்கீகரிக்கப்படாத வீடுகளும், மேற்கில் தென்வடலாக வடசித்தூர் - நெகமம் செல்லும் பிரதான சாலையும், மேற்படி கிரவுள் நிறுவனத்தின் அலுவலகம் (2 தார்க் கட்டிடம்) மற்றும் ஓட்டு கட்டிடம் ஒன்றும் அமைந்துள்ளது. வடமேற்கில் சுமார் 100 மீ தொலைவில் வெங்கடாசலம் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், வடக்கில் சுமார் 100 மீ தொலைவில் ராஜேந்திரன் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், அமைந்துள்ளன.

பிரஸ்தாப புலங்களிலிருந்து 500 மீ சுற்றளவில் அரசு கட்டிடங்கள், அங்கீகரிக்கப்பட்ட வீட்டு மனைகள், கோவில்கள், தேவாலயங்கள், மருதிகள் போன்ற இன்னபிற வழிபாட்டுத் தலங்கள் மற்றும் புராதானச் சின்னங்கள் ஏதும் இல்லை. மேற்படி பூமிகள் வழியாக வாய்க்கால் / ஓடை ஏதும் செல்லவில்லை. மேற்படி புலங்களிலிருந்து உயர் மின் அழுத்த கம்பிகள் ஏதும் செல்லவில்லை. மேற்படி புலங்களிலிருந்து 500 மீ சுற்றளவில் தேசிய நெடுஞ்சாலை ஏதும் அமையப் பெறவில்லை. பிரஸ்தாப புலமானது நிபந்தனை ஒப்படை பூமியோ, நில உச்ச வரம்பிற்குட்பட்ட பூமியாகவோ, நிலச் சீர்திருத்தச் சட்டத்தின் கீழ் கவர்ப்பட்ட பூமியாகவோ, அரசு புறம் போக்கு பூமியாகவோ இல்லை.

எனவே, கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண் 44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம்



2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் மட்டும் திரு.S.அப்துல் ஜப்பார் த/பெ.சாந்துமுகமது என்பவர் சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் வழங்கிட பரிந்துரை செய்து கோயம்புத்தூர் மாவட்ட ஆட்சியர் அவர்களுக்கு கடித வரைவு வைக்கவும்.



சார் ஆட்சியர்,
பொள்ளாச்சி

2/2



அனுப்புநர்:
திருமதி.லெ.ஸ்ரீதேவி,
வருவாய் வட்டாட்சியர்,
கிணத்துக்கடவு.

பெறுநர்:
சார் ஆட்சியர்,
பொள்ளாச்சி.

ந.க.எண்:1603/2020/ஆ1 நாள்:29.09.2020.

அய்யா,



பார்வை : 7/10/20

கனிமங்களும், சுரங்கங்களும் - குவாரி குத்தகை உரிமம் - கோயம்புத்தூர் மாவட்டம் - கிணத்துக்கடவு வட்டம் - குருநல்லிபாளையம் கிராமம் - புல எண் 44/9(பகுதி)-ல் 1.64.0 ஹெக்டேரில் 0.95.0 ஹெக்டேர், 45(பகுதி)-ல் 1.03.0 ஹெக்டேரில் 0.45.0 ஹெக்டேர், 46/1-ல் 0.46.0 ஹெக்டேர், 47/3(பகுதி)-ல் 0.73.0 ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோரி திரு.S.அப்துல் ஜப்பார் என்பவர் மனு செய்துள்ளது - அறிக்கை - தொடர்பாக.

- 1 திரு. S.அப்துல்ஜப்பார், த-பெ.சாந்துமுகமது ராவுத்தர், 3/33, வடசித்தூர் என்பவரின் என்பவரின் விண்ணப்பம் நாள்.23.07.2020.
- 2 கோயம்புத்தூர், மாவட்ட ஆட்சியர் அவர்களின் கடிதம் ந.க.எண்.337/கனிமம்/2020, நாள்.24.07.2020.
- 3 பொள்ளாச்சி சார் ஆட்சியர் அவர்களின் ந.க.எண்.1467/2020/அ2 நாள்.04.08.2020.
- 4 வடசித்தூர் உள்வட்ட நிலவருவாய் ஆய்வாளர் அறிக்கை நாள்.03.09.2020.

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண் 44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 பு.ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் திரு.S.அப்துல் ஜப்பார் த/பெ.சாந்துமுகமது என்பவர் சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோரியது தொடர்பாக பார்வை -2-யில் காணும் கடிதத்தின் வாயிலாக உரிய அறிக்கை சமர்ப்பிக்க பணிக்கப்பட்டதனைத் தொடர்ந்து பிரஸ்தாப புலத்தினை கடந்த 21.09.2020 அன்று புலத்தணிக்கை மேற்கொண்டு எனதறிக்கையினை பின்வருமாறு சமர்ப்பிக்கிறேன்.

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், பட்டா எண்.99-இல் புல.எண்.44/9 நெ.காலையில் 1.64.0 பு.ஹெக்டேர் பரப்பானது ஜப்பார் என்கிற அப்துல் ஜப்பார் என்பவருக்கு தனியாக பாத்தியப்பட்டது. பட்டா எண்.608-இல் புல எண். 45 நெ.காலையில் 1.03.0 ஹெக்டேர் பரப்பும், பட்டா எண்.783- இல் புல எண்.46/1 நெ.காலையில் 0.46.0 ஹெக்டேர் பரப்பும், புலஎண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேர் பரப்பும் லேட்.சாந்து முகம்மது ராவுத்தர் மகன் ஜப்பார் (ஏ) அப்துல் ஜப்பார் என்பவருக்கு தனியாக பாத்தியப்பட்டது.

மேற்படி புலங்களில் மனுதாரருக்கு பாத்தியப்பட்ட மேற்படி கிராமம், பட்டா எண்கள்.680 மற்றும் 783 -களில் புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் மொத்தப்பரப்பு 0.73.0 பு.ஹெக்டேரில் 0.30.5 பு.ஹெக்டேர் பரப்பிலும், மனுதாரரின் மகன் மேற்படி கிராமத்தில் பட்டா எண்.99-இன்படி பாத்தியப்பட்ட புல.எண்.44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 ஹெக்டேர் பரப்பிலும் என ஆக மொத்தம் 2.16.5 பு.ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க மனுதாரர் அனுமதி கோரியுள்ளார்.

மனுதாரரின் மகன் A.தாரிக் அஜீஸ் த/பெ. S.அப்துல் ஜப்பார் என்பவர் மேற்படி கிராமத்தில் தனியருக்கு பாத்தியப்பட்ட புல எண். 44/9 ல் பு.ஹெக்டேர் 1.64.0 பு.ஹெக்டேரில் 0.95.0 ஹெக்டேர் பரப்பில் மனுதாரருக்கு மாவட்ட ஆட்சியர் அனுமதி வழங்கிய பின் 5 ஆண்டுகளுக்கு கல் உடைத்துக் கொள்ள சம்மதம் தெரிவித்து சம்மதக்கடிதம் அளித்துள்ளார். சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க தகப்பனார் பெயரில் குத்தகை உரிமம் வழங்குவதில் எந்தவித ஆட்சேபணையும் இல்லை என மனுதாரரின் குமாரர் A.தாரிக் அஜீஸ் என்பவர் சம்மதக் கடிதம் அளித்துள்ளார். மேலும் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரி விண்ணப்பித்துள்ள உரிமத்திற்கான கட்டணத்தொகை ரூ.1500/- ஐ பாரத ஸ்டேட் வங்கி சலான்.137 நாள்.23.07.2020-ன்படி செலுத்தியுள்ளார்.

மேற்படி காலைகளில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க மனுதாரருக்கு குத்தகை உரிமம் வழங்குவது தொடர்பாக பொதுமக்களுக்கு ஆட்சேபணையேதுமில்லை எனத் தெரிவித்து பொதுமக்கள் வாக்கு மூலம் அளித்துள்ளனர்.

மனுதாரர் குவாரி குத்தகை உரிமம் கோரும் புலங்களான புல எண்கள். 44/9, 45, 46/1 மற்றும் 47/3 நெ.காலைகளின் புல எல்லைகளாக வடக்கில் மனுதாரருக்கு பாத்தியப்பட்ட புல எண் 47/3 நெ.காலையில் மீதமுள்ள பூமி மற்றும் மனுதாரருக்கு பாத்தியப்பட்ட கிரஷர், கல்குவாரியும், தெற்கில் புல எண். 46/2 நெ.காலை மற்றும் 46/3 ஆகிய காலைகளும், கிழக்கில் மனுதாரரின் மனைவி ஷக்கிலாபானு என்பவருக்கு பாத்தியப்பட்ட புல எண். 46/2 நெ.காலை பூமியும், மேற்கில் மனுதாரருக்கு பாத்தியப்பட்ட புல.எண்.44/9 நெ.காலையில் மீதமுள்ள பூமியும், கிழமேலாக செல்லும் வடசித்தூர்-மன்றாம்பாளையம் செல்லும் பிரதான சாலையும் எல்லைகளாக அமைந்துள்ளன.

மேற்படி புலங்களிலிருந்து கிழக்கில் சுமார் 30 மீ தொலைவில் முருகேசன் என்பவருக்கு பாத்தியப்பட்ட வீடு உள்ளது. மேற்படி வீட்டில் தற்போது யாரும் குடியில்லை மற்றும் 50 மீ தொலைவில் வரதகுமாரராஜ் என்பவருக்கு பாத்தியப்பட்ட முத்துலட்சுமி அன்கோ என்ற பயரில் தார் பிளாண்டு உள்ளது. தென்கிழக்கில் சுமார் 100 மீ தொலைவில் நடராஜ் மற்றும் வெங்கடாசலம் என்பவர்களுக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத இரண்டு வீடுகளும், தெற்கில் சுமார் 150 மீ தொலைவில் முருகானந்தம் மற்றும் ஆறுச்சாமி என்பவர்களுக்கு பாத்தியப்பட்ட இரண்டு அங்கீகரிக்கப்படாத வீடுகளும், மேற்கில் தென்வடலாக வடசித்தூர் - நெகமம் செல்லும் பிராதான சாலையும், மேற்படி கிரஷர் நிறுவனத்தின் அலுவலகம் (2 தார்க் கட்டிடம்) மற்றும் ஓட்டு கட்டிடம் ஒன்றும் அமைந்துள்ளது. வடமேற்கில் சுமார் 100 மீ தொலைவில் வெங்கடாசலம் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், வடக்கில் சுமார் 100 மீ தொலைவில் ராஜேந்திரன் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், அமைந்துள்ளன.

பிரஸ்தாப புலங்களிலிருந்து 500 மீ சுற்றளவில் அரசு கட்டிடங்கள், அங்கீகரிக்கப்பட்ட வீட்டு மனைகள், கோவில்கள், தேவாலயங்கள், மசூதிகள் போன்ற இன்னபிற வழிபாட்டுத் தலங்கள் மற்றும் புராதானச் சின்னங்கள் ஏதும் இல்லை. மேற்படி பூமிகள் வழியாக வாய்க்கால் / ஓடை ஏதும் செல்லவில்லை. மேற்படி புலங்களிலிருந்து உயர் மின் அழுத்த கம்பிகள் ஏதும் செல்லவில்லை. மேற்படி புலங்களிலிருந்து 500 மீ

சுற்றளவில் தேசிய நெடுஞ்சாலை ஏதும் அமையப் பெறவில்லை. பிரஸ்தாப புலமாவலு நிபந்தனை ஒப்படை பூமியோ, நில உச்ச வரம்பிற்குட்பட்ட பூமியாகவோ, நிலச் சீர்திருத்தச் சட்டத்தின் கீழ் கவரப்பட்ட பூமியாகவோ, அரசு புறம் போக்கு பூமியாகவோ இல்லை.

எனவே, கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண் 44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் மட்டும் திரு.S.அப்துல் ஜப்பார் த/பெ.சாந்துமுகமது என்பவர் சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் வழங்கிட பரிந்துரை செய்து, இவ்வினம் தொடர்பான கிராமக் கணக்குகளை இத்துடன் இணைத்தனுப்பியுள்ளேன் என்பதைப் பணிவுடன் தெரிவித்துக்கொள்கிறேன்.

இணைப்பு:

- 1.மனுதாரரின் மனு.
- 2.வங்கியில் பணம் செலுத்திய சலான் நகல்
- 3.வருமான வரி நிலுவை இல்லை என்பதற்கான சான்று நகல்.
- 4.கனிம வரி நிலுவை இல்லை என்பதற்கான சான்று நகல்.
- 5.கிராம ஆவணங்கள் மற்றும் புல வரைபடம்.

தங்கள் உண்மை உள்ள
வட்டாட்சியர்,
கிணத்துக்கடவு.

24/9/2022

புலத்தணிக்கைக் குறிப்பு

தணிக்கை அலுவலர்	:	வட்டாட்சியர், கிணத்துக்கடவு
தணிக்கை நாள்	:	21.09.2020.
தணிக்கை க.ச.எண்	:	புல எண்.44/9,46/1,47/3 மற்றும் 45
தணிக்கை கிராமம்	:	குருநல்லிபாளையம் கிராமம்
தணிக்கையின் நோக்கம்	:	சாதாரண கற்கள் மற்றும் கிராவல் மண்வெட்டி எடுக்க அனுமதி கோரியது
தணிக்கையின் போது உடனிருந்தவர்கள்	:	நில வருவாய் ஆய்வாளர், வடசித்தூர். கிராம நிர்வாக அலுவலர், குருநல்லிபாளையம்.

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண் 44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 பு.ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் திரு.S.அப்துல் ஜப்பார் த/பெ.சாந்துமுகமது என்பவர் சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோரியது தொடர்பாக பிரஸ்தாப புலமானது கடந்த 21.09.2020 அன்று என்னால் புலத்தணிக்கை மேற்கொள்ளப்பட்டது.

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், பட்டா எண்.99-இல் புல.எண்.44/9 நெ.காலையில் 1.64.0 பு.ஹெக்டேர் பரப்பானது ஜப்பார் என்கிற அப்துல் ஜப்பார் என்பவருக்கு தனியாக பாத்தியப்பட்டது. பட்டா எண்.608-இல் புல எண். 45 நெ.காலையில் 1.03.0 ஹெக்டேர் பரப்பும், பட்டா எண்.783- இல் புல எண்.46/1 நெ.காலையில் 0.46.0 ஹெக்டேர் பரப்பும், புலஎண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேர் பரப்பும் லேட்.சாந்து முகம்மது ராவுத்தர் மகன் ஜப்பார் (எ) அப்துல் ஜப்பார் என்பவருக்கு தனியாக பாத்தியப்பட்டது.

மேற்படி புலங்களில் மனுதாரருக்கு பாத்தியப்பட்ட மேற்படி கிராமம், பட்டா எண்கள்.680 மற்றும் 783 -களில் புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் மொத்தப்பரப்பு 0.73.0 பு.ஹெக்டேரில் 0.30.5 பு.ஹெக்டேர் பரப்பிலும், மனுதாரரின் மகன் மேற்படி கிராமத்தில் பட்டா எண்.99-இன்படி பாத்தியப்பட்ட புல.எண்.44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 ஹெக்டேர் பரப்பிலும் என ஆக மொத்தம் 2.16.5 பு.ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க மனுதாரர் அனுமதி கோரியுள்ளார்.

மனுதாரரின் மகன் A.தாரிக் அஜீஸ் த/பெ. S.அப்துல் ஜப்பார் என்பவர் மேற்படி கிராமத்தில் தனியருக்கு பாத்தியப்பட்ட புல எண். 44/9 ல் பு.ஹெக்ட 1.64.0 பு.ஹெக்டேரில் 0.95.0 ஹெக்டேர் பரப்பில் மனுதாரருக்கு மாவட்ட ஆட்சியர் அனுமதி வழங்கிய பின் 5 ஆண்டுகளுக்கு கல் உடைத்துக் கொள்ள சம்மதம் தெரிவித்து சம்மதக்கடிதம் அளித்துள்ளார். சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க தகப்பனார் பெயரில் குத்தகை உரிமம் வழங்குவதில் எந்தவித ஆட்சேபணையும் இல்லை என மனுதாரரின் குமாரர் A.தாரிக் அஜீஸ் என்பவர் சம்மதக் கடிதம் அளித்துள்ளார். மேலும் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரி விண்ணப்பித்துள்ள உரிமத்திற்கான கட்டணத்தொகை ரூ.1500/- ஜ பாரத ஸ்டேட் வங்கி சலான்.137 நாள்.23.07.2020-ன்படி செலுத்தியுள்ளார்.



மேற்படி காலைகளில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க மனுதாரருக்கு குத்தகை உரிமம் வழங்குவது தொடர்பாக பொதுமக்களுக்கு ஆட்சேபணையேதுமில்லை எனத் தெரிவித்து பொதுமக்கள் வாக்கு மூலம் அளித்துள்ளனர்.

மனுதாரர் குவாரி குத்தகை உரிமம் கோரும் புலங்களான புல எண்கள். 44/9, 45, 46/1 மற்றும் 47/3 நெ.காலைகளின் புல எல்லைகளாக வடக்கில் மனுதாரருக்கு பாத்தியப்பட்ட புல எண் 47/3 நெ.காலையில் மீதமுள்ள பூமி மற்றும் மனுதாரருக்கு பாத்தியப்பட்ட கிரஷர், கல்குவாரியும், தெற்கில் புல எண். 46/2 நெ.காலை மற்றும் 46/3 ஆகிய காலைகளும், கிழக்கில் மனுதாரரின் மனைவி ஷக்கிலாபானு என்பவருக்கு பாத்தியப்பட்ட புல எண். 46/2 நெ.காலை பூமியும், மேற்கில் மனுதாரருக்கு பாத்தியப்பட்ட புல.எண்.44/9 நெ.காலையில் மீதமுள்ள பூமியும், கிழமேலாக செல்லும் வடசித்தூர்- மன்றாம்பாளையம் செல்லும் பிரதான சாலையும் எல்லைகளாக அமைந்துள்ளன.

மேற்படி புலங்களிலிருந்து கிழக்கில் சுமார் 30 மீ தொலைவில் முருகேசன் என்பவருக்கு பாத்தியப்பட்ட வீடு உள்ளது. மேற்படி வீட்டில் தற்போது யாரும் குடியில்லை மற்றும் 50 மீ தொலைவில் வரதகுமாரராஜ் என்பவருக்கு பாத்தியப்பட்ட முத்துலட்சுமி அன்கோ என்ற பயரில் தார் பிளாண்டு உள்ளது. தென்கிழக்கில் சுமார் 100 மீ தொலைவில் நடராஜ் மற்றும் வெங்கடாசலம் என்பவர்களுக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத இரண்டு வீடுகளும், தெற்கில் சுமார் 150 மீ தொலைவில் முருகானந்தம் மற்றும் ஆறுச்சாமி என்பவர்களுக்கு பாத்தியப்பட்ட இரண்டு அங்கீகரிக்கப்படாத வீடுகளும், மேற்கில் தென்வடலாக வடசித்தூர் - நெகமம் செல்லும் பிரதான சாலையும், மேற்படி கிரஷர் நிறுவனத்தின் அலுவலகம் (2 தாரசு கட்டிடம்) மற்றும் ஓட்டு கட்டிடம் ஒன்றும் அமைந்துள்ளது. வடமேற்கில் சுமார் 100 மீ தொலைவில் வெங்கடாசலம் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், வடக்கில் சுமார் 100 மீ தொலைவில் ராஜேந்திரன் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், அமைந்துள்ளன.

பிரஸ்தாப புலங்களிலிருந்து 500 மீ சுற்றளவில் அரசு கட்டிடங்கள், அங்கீகரிக்கப்பட்ட வீட்டு மனைகள், கோவில்கள், தேவாலயங்கள், மசூதிகள் போன்ற இன்னபிற வழிபாட்டுத் தலங்கள் மற்றும் புராதானச் சின்னங்கள் ஏதும் இல்லை. மேற்படி பூமிகள் வழியாக வாய்க்கால் / ஓடை ஏதும் செல்லவில்லை. மேற்படி புலங்களிலிருந்து உயர் மின் அழுத்த கம்பிகள் ஏதும் செல்லவில்லை. மேற்படி புலங்களிலிருந்து 500 மீ சுற்றளவில் தேசிய நெடுஞ்சாலை ஏதும் அமையப் பெறவில்லை. பிரஸ்தாப புலமானது நிபந்தனை ஒப்படை பூமியோ, நில உச்ச வரம்பிற்குட்பட்ட பூமியாகவோ, நிலச் சீர்திருத்தச் சட்டத்தின் கீழ் கவரப்பட்ட பூமியாகவோ, அரசு புறம் போக்கு பூமியாகவோ இல்லை.

எனவே, கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமம், புல எண் 44/9 நெ.காலையில் மொத்தப்பரப்பு 1.64.0 பு.ஹெக்டேரில் 0.95.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.45 நெ.காலையில் மொத்தப்பரப்பு 1.03.0 பு.ஹெக்டேரில் 0.45.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.46/1 நெ.காலையில் 0.46.0 பு.ஹெக்டேர் பரப்பிலும், புல எண்.47/3 நெ.காலையில் 0.73.0 பு.ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் மட்டும் திரு. S. அப்துல் ஜப்பார் த/பெ.சாந்துமுகமது என்பவர் சாதாரணகற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் வழங்கிட பரிந்துரை செய்து பொள்ளாச்சி சார் ஆட்சியருக்கு கடித வரைவு வைக்கவும்.

வட்டாட்சியர்,
கிணத்துக்கடவு.

நில வருவாய் ஆய்வாளர் அலுவலகம்,
வடசித்தூர் உள்வட்டம்.



பணிநிறைவேற்றப்பட்டுள்ளது

4 SEP 2020

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், வடசித்தூர் உள்வட்டம், வடசித்தூர் கிராமம், கதவு.எண்.3/33 என்ற முகவரியில் வசித்து வரும் திரு.S.அப்துல் ஜப்பார் என்பவர் குருநல்லிபாளையம் கிராமத்தில் தனக்கு பாத்தியமுள்ள புல.எண்.44/9(பகுதி) - ல் 1.64.0 ஹெக்டேரில் 0.95.0 ஹெக்டேர், 45(பகுதி) - ல் 1.03.0 ஹெக்டேரில் 0.45.0 ஹெக்டேர், 46/1 - ல் 0.46.0 ஹெக்டேர், 47/3(பகுதி) - ல் 0.73.0 ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரி விண்ணப்பித்துள்ளதன் பேரில் எனது புலத் தணிக்கை மற்றும் விசாரணை அறிக்கையினை கீழ் வருமாறு பணிந்து சமர்ப்பிக்கின்றேன்.

மேற்படி குருநல்லிபாளையம் கிராமப் பட்டா எண். 99 - ன்படி புல எண். 44/9 ல் பு.ஹெக் 1.64.00 பூமி மனுதாராரான ஜப்பார் என்கிற அப்துல் ஜப்பார் மகன் தாரிக் அஜீஸ் என்பவருக்கு தனியாகவும், பட்டா எண். 680 - ல் புல எண் 43 -ல் உட்பிரிவுகளான 1,2,3,4,5,6,7,8,9,10, புல எண் 44 -ல் உட்பிரிவுகளான 1,2,3,4,5,6,7,8, புல எண். 45 - ல் மொத்தம் பு.ஹெக். 5.81.50 பூமியும், பட்டா எண். 783 - ல் புல எண். 46/1 மற்றும் 47 -ல் உட்பிரிவுகளான 1,2,3, ஆக மொத்தம் 2.71.50 பு.ஹெக் பூமியும் மனுதாரருக்கு தனியாகப் பாத்தியப்பட்டது. மேற்படி மனுதாரரின் மகனுக்கு பாத்தியப்பட்ட புல எண். 44/9 ல் பு.ஹெக் 1.64.0 - யில் 0.95.0 பு.ஹெக் பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க எனது தகப்பனார் பெயரில் குத்தகை உரிமம் வழங்குவதில் எந்தவித ஆட்சேபணையும் இல்லை என மனுதாரரின் குமாரர் A.தாரிக் அஜீஸ் என்பவர் சம்மதக் கடிதம் அளித்துள்ளார். சம்மதக்கடிதம் இத்துடன் இணைக்கப்பட்டுள்ளது.

மேற்படி புல.எண். 44/9 ல் பு.ஹெக் 1.64.0 - யில் 0.95.0 பு.ஹெக், புல.எண். 45 -ல் 0.45.0, பு.ஹெக், புல.எண்.46/1-ல் 0.46.0 பு.ஹெக் மற்றும்

புல.எண்.47/3 - ல் 0.30.5 பு.ஹெக் பூமியுமாக மொத்தம் 2.16.5 பு.ஹெக் பரப்பளவில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க உத்தேசித்துள்ளதாக விசாரணையில் தெரிய வருகின்றது.

மேற்படி புலங்களின் எல்லைகளாக


- வடக்கில் மனுதாரர்களுக்கு பாத்தியப்பட்ட புல எண் 47/3 - ல் மீதமுள்ள பூமி மற்றும் மனுதாரருக்கு பாத்தியப்பட்ட கிரஷர், கல்குவாரியும்
- தெற்கில் புல எண். 46/2, மற்றும் 46/3 ஆகியனவும்
- கிழக்கில் மனுதாரரின் மனைவி ஷக்கிலாபானு என்பவருக்கு பாத்தியப்பட்ட புல எண். 46/2 பூமியும்
- மேற்கில் மனுதாரருக்கு பாத்தியப்பட்ட புல.எண்.44/9 - ல் மீதமுள்ள பூமியும், கிழமேலாக செல்லும் வடசித்தூர்- மன்றாம்பாளையம் செல்லும் பிரதான சாலையும் எல்லைகளாக அமைந்துள்ளன.

மேற்படி புலங்களிலிருந்து கிழக்கில் சுமார் 30 மீ தொலைவில் முருகேசன் என்பவருக்கு பாத்தியப்பட்ட வீடு உள்ளது. மேற்படி வீட்டில் தற்போது யாரும் குடியில்லை மற்றும் 50 மீ தொலைவில் வரதகுமாரராஜ் என்பவருக்கு பாத்தியப்பட்ட முத்துலட்சுமி அன்கோ என்ற பயிரில் தூர் பிளாண்டு உள்ளது. தென்கிழக்கில் சுமார் 100 மீ தொலைவில் நடராஜ் மற்றும் வெங்கடாசலம் என்பவர்களுக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத இரண்டு வீடுகளும், தெற்கில் சுமார் 150 மீ தொலைவில் முருகானந்தம் மற்றும் ஆறுச்சாமி என்பவர்களுக்கு பாத்தியப்பட்ட இரண்டு அங்கீகரிக்கப்படாத வீடுகளும், மேற்கில் தென்வடலாக வடசித்தூர் - நெகமம் செல்லும் பிரதான சாலையும், மேற்படி கிரஷர் நிறுவனத்தின் அலுவலகம் (2 தார்க் கட்டிடம்) மற்றும் ஓட்டு கட்டிடம் ஒன்றும் அமைந்துள்ளது. வடமேற்கில் சுமார் 100 மீ தொலைவில் வெங்கடாசலம் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், வடக்கில் சுமார் 100 மீ தொலைவில் ராஜேந்திரன் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், அமைந்துள்ளன.



- மேற்படி புலங்களிலிருந்து 500 மீ சுற்றளவில் அரசு கட்டிடங்கள், அங்கீகரிக்கப்பட்ட வீட்டு மனைகள், கோவில்கள், தேவாலயங்கள், மகுதிகள் போன்ற இன்னபிற வழிபாட்டுத் தலங்கள் மற்றும் புராதானச் சின்னங்கள் ஏதும் இல்லை.
- மேற்படி பூமிகள் வழியாக வாய்க்கால் / ஓடை ஏதும் செல்லவில்லை.
- மேற்படி புலங்களிலிருந்து உயர் மின் அழுத்த கம்பிகள் ஏதும் செல்லவில்லை.
- மேற்படி புலங்களிலிருந்து 500 மீ சுற்றளவில் தேசிய நெடுஞ்சாலை ஏதும் அமையப் பெறவில்லை.
- பிரஸ்தாப புலமானது நிபந்தனை ஒப்படை பூமியோ, நில உச்ச வரம்பிற்குட்பட்ட பூமியாகவோ, நிலச் சீதிருத்தச் சட்டத்தின் கீழ் கவரப்பட்ட பூமியாகவோ, அரசு புறம் போக்கு பூமியாகவோ இல்லை.

மேற்படி காலைகளில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க பொதுமக்களுக்கு ஆட்சேபணையேதுமில்லை என்பதற்கான "ஆப" அறிவிப்பு மற்றும் பொதுமக்கள் வாக்கு மூலம் பெறப்பட்டு சமர்ப்பிக்கப்பட்டுள்ளது. மேற்படி புலத்தில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க அனுமதி வழங்கிட பரிந்துரை செய்து அறிக்கை பணிந்து சமர்ப்பிக்கப்படுகின்றது.


 வடசித்தூர்
 வினாத்துக்கடவு வட்டம்



கிராம நிர்வாக அலுவலர் அலுவலகம்,
குருநல்லிபாளையம் கிராமம்.

பணிநிறைவுப்படிபடுகின்றது

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், வடசித்தூர் உள்வட்டம், வடசித்தூர் கிராமம், கதவு.எண்.3/33 என்ற முகவரியில் வசித்து வரும் திரு.S.அப்துல் ஜப்பார் என்பவர் குருநல்லிபாளையம் கிராமத்தில் தனக்கு பாத்தியமுள்ள புல.எண்.44/9(பகுதி) - ல் 1.64.0 ஹெக்டேரில் 0.95.0 ஹெக்டேர், 45(பகுதி) - ல் 1.03.0 ஹெக்டேரில் 0.45.0 ஹெக்டேர், 46/1 - ல் 0.46.0 ஹெக்டேர், 47/3(பகுதி) - ல் 0.73.0 ஹெக்டேரில் 0.30.5 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரி விண்ணப்பித்துள்ளதன் பேரில் எனது புலத் தணிக்கை மற்றும் விசாரணை அறிக்கையினை கீழ் வருமாறு பணிந்து சமர்ப்பிக்கின்றேன்.

மேற்படி குருநல்லிபாளையம் கிராமப் பட்டா எண். 99 - ன்படி புல எண். 44/9 ல் பு.ஹெக் 1.64.00 பூமி மனுதாராரான ஜப்பார் என்கிற அப்துல் ஜப்பார் மகன் தாரிக் அஜீஸ் என்பவருக்கு தனியாகவும், பட்டா எண். 680 - ல் புல எண் 43 -ல் உட்பிரிவுகளான 1,2,3,4,5,6,7,8,9,10, புல எண் 44 -ல் உட்பிரிவுகளான 1,2,3,4,5,6,7,8, புல எண். 45 - ல் மொத்தம் பு.ஹெக். 5.81.50 பூமியும், பட்டா எண். 783 - ல் புல எண். 46/1 மற்றும் 47 -ல் உட்பிரிவுகளான 1,2,3, ஆக மொத்தம் 2.71.50 பு.ஹெக் பூமியும் மனுதாரருக்கு தனியாகப் பாத்தியப்பட்டது. மேற்படி மனுதாரரின் மகனுக்கு பாத்தியப்பட்ட புல எண். 44/9 ல் பு.ஹெக் 1.64.0 - யில் 0.95.0 பு.ஹெக் பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க எனது தகப்பனார் பெயரில் குத்தகை உரிமம் வழங்குவதில் எந்தவித ஆட்சேபணையும் இல்லை என மனுதாரரின் குமாரர் A.தாரீக் அஜீஸ் என்பவர் சம்மதக் கடிதம் அளித்துள்ளார். சம்மதக்கடிதம் இத்துடன் இணைக்கப்பட்டுள்ளது.

மேற்படி புல.எண். 44/9 ல் பு.ஹெக் 1.64.0 - யில் 0.95.0 பு.ஹெக், புல.எண். 45 -ல் 0.45.0, பு.ஹெக், புல.எண்.46/1-ல் 0.46.0 பு.ஹெக் மற்றும்

புல.எண்.47/3 - ல் 0.30.5 பு.ஹெக் பூமியுமாக மொத்தம் 2.16.5 பு.ஹெக் பரப்பளவில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க உத்தேசித்துள்ளதாக விசாரணையில் தெரிய வருகின்றது.

மேற்படி புலங்களின் எல்லைகளாக

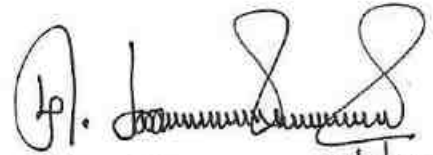
- வடக்கில் மனுதாரர்களுக்கு பாத்தியப்பட்ட புல எண் 47/3 - ல் மீதமுள்ள பூமி மற்றும் மனுதாரருக்கு பாத்தியப்பட்ட கிரஷர், கல்குவாரியும்
- தெற்கில் புல எண். 46/2, மற்றும் 46/3 ஆகியனவும்
- கிழக்கில் மனுதாரரின் மனைவி ஷக்கிலாபானு என்பவருக்கு பாத்தியப்பட்ட புல எண். 46/2 பூமியும்
- மேற்கில் மனுதாரருக்கு பாத்தியப்பட்ட புல.எண்.44/9 - ல் மீதமுள்ள பூமியும், கிழமேலாக செல்லும் வடசித்தார்- மன்றாம்பாளையம் செல்லும் பிரதான சாலையும் எல்லைகளாக அமைந்துள்ளன.

மேற்படி புலங்களிலிருந்து கிழக்கில் சுமார் 30 மீ தொலைவில் முருகேசன் என்பவருக்கு பாத்தியப்பட்ட வீடு உள்ளது. மேற்படி வீட்டில் தற்போது யாரும் குடியில்லை மற்றும் 50 மீ தொலைவில் வரதகுமாரராஜ் என்பவருக்கு பாத்தியப்பட்ட முத்துலட்சுமி அன்கோ என்ற பயரில் தார் பிளாண்டு உள்ளது. தென்கிழக்கில் சுமார் 100 மீ தொலைவில் நடராஜ் மற்றும் வெங்கடாசலம் என்பவர்களுக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத இரண்டு வீடுகளும், தெற்கில் சுமார் 150 மீ தொலைவில் முருகானந்தம் மற்றும் ஆறுச்சாமி என்பவர்களுக்கு பாத்தியப்பட்ட இரண்டு அங்கீகரிக்கப்படாத வீடுகளும், மேற்கில் தென்வடலாக வடசித்தார் - நெகமம் செல்லும் பிரதான சாலையும், மேற்படி கிரஷர் நிறுவனத்தின் அலுவலகம் (2 தார்கு கட்டிடம்) மற்றும் ஓட்டு கட்டிடம் ஒன்றும் அமைந்துள்ளது. வடமேற்கில் சுமார் 100 மீ தொலைவில் வெங்கடாசலம் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், வடக்கில் சுமார் 100 மீ தொலைவில் ராஜேந்திரன் என்பவருக்கு பாத்தியப்பட்ட அங்கீகரிக்கப்படாத வீடும், அமைந்துள்ளன.



- மேற்படி புலங்களிலிருந்து 500 மீ சுற்றளவில் அரசு கட்டிடங்கள், அங்கீகரிக்கப்பட்ட வீட்டு மனைகள், கோவில்கள், தேவாலயங்கள், மகுதிகள் போன்ற இன்னபிற வழிபாட்டுத் தலங்கள் மற்றும் புராதானச் சின்னங்கள் ஏதும் இல்லை.
- மேற்படி பூமிகள் வழியாக வாய்க்கால் / ஓடை ஏதும் செல்லவில்லை.
- மேற்படி புலங்களிலிருந்து உயர் மின் அழுத்த கம்பிகள் ஏதும் செல்லவில்லை.
- மேற்படி புலங்களிலிருந்து 500 மீ சுற்றளவில் தேசிய நெடுஞ்சாலை ஏதும் அமையப் பெறவில்லை.
- பிரஸ்தாப புலமானது நிபந்தனை ஒப்படை பூமியோ, நில உச்ச வரம்பிற்குட்பட்ட பூமியாகவோ, நிலச் சீர்திருத்தச் சட்டத்தின் கீழ் கவரப்பட்ட பூமியாகவோ, அரசு புறம் போக்கு பூமியாகவோ இல்லை.

மேற்படி காலைகளில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க பொதுமக்களுக்கு ஆட்சேபணையேதுமில்லை என்பதற்கான "ஆ1" அறிவிப்பு மற்றும் பொதுமக்கள் வாக்கு மூலம் பெறப்பட்டு சமர்ப்பிக்கப்பட்டுள்ளது. மேற்படி புலத்தில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க அனுமதி வழங்கிட பரிந்துரை செய்து அறிக்கை பணிந்து சமர்ப்பிக்கப்படுகின்றது.



விசுவநிர்வாக அலுவலர்,
21, குருதல்லிபாளையம் கிராமம்,
கிணத்துக்கடவு வட்டம்.



நில வருவாய் ஆய்வாளர் அலுவலகம்,
வடசித்தூர் உள்வட்டம்

நாள்: 20.08-2020

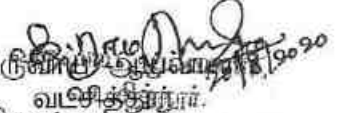
அ1 - அறிவிப்பு

கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமத்தில் வசிக்கும் பொதுமக்களுக்கு இதன் மூலம் அறிவிக்கப்படுவது என்னவென்றால்,


கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், வடசித்தூர் உள்வட்டம், வடசித்தூர் கிராமம், கதவு.எண்.3/33 என்ற முகவரியில் வசித்து வரும் திரு.S.அப்துல் ஜப்பார் என்பவர் குருநல்லிபாளையம் கிராமத்தில் தனக்கு பாத்தியமுள்ள புல.எண்.44/9(பகுதி) - ல் 1.64.0 ஹெக்டேரில் 0.95.0 ஹெக்டேர், புல.எண்.45(பகுதி) - ல் 1.03.0 ஹெக்டேரில் 0.45.0 ஹெக்டேர், புல.எண்.46/1 - ல் 0.46.0 ஹெக்டேர், 47/3(பகுதி) - ல் 0.73.0 ஹெக்டேரில் 0.30.0 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க உத்தேசித்துள்ளார்.

இந்நேர்வு குறித்து பொதுமக்கள் எவருக்கும் ஆட்சேபணைகள் ஏதாமிருப்பின் இவ்வறிவிப்பு பிரசித்தம் செய்யப்பட்ட நாளிலிருந்து 15 தினங்களுக்குள் தமது ஆட்சேபணைகளை எழுத்து மூலமாக நேரிலோ அல்லது தபால் மூலமாகவோ கிணத்துக்கடவு வட்டாட்சியரிடமோ அல்லது வடசித்தூர் உள்வட்ட நில வருவாய் ஆய்வாளரிடமோ தெரியப்படுத்துமாறு அறிவிக்கப்படுகிறார்கள்.

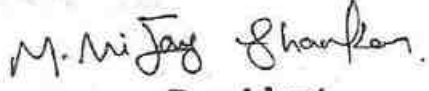
அங்ஙனம் குறித்த நாட்களுக்குள் ஆட்சேபணைகள் ஏதும் இவ்வலுவலகத்தில் கிடைக்கப்பெறவில்லையெனில் மேற்குறிப்பிட்டவாறு சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுப்பது குறித்து பொதுமக்கள் எவருக்கும் ஆட்சேபணைகள் இல்லை எனக் கருதி மேல்நடவடிக்கை தொடரப்படும் என்றும் இதன்மூலம் தெரிவிக்கப்படுகிறது.


வருவாய் ஆய்வாளர்,
வடசித்தூர்,
கிணத்துக்கடவு வட்டம்.

மேற்கண்ட சங்கதியினை குருநல்லிபாளையம் கிராமத்தில் தண்ணீரா மூலம் பிரசித்தம் செய்தும் குடிகள் கையொப்பம் பெற்றும் மீள சமர்ப்பிக்குமாறு குருநல்லிபாளையம் கிராம நிர்வாக அலுவலர் கேட்டுக்கொள்ளப்படுகிறார்.


வருவாய் ஆய்வாளர்,
வடசித்தூர்,
கிணத்துக்கடவு வட்டம்.

பெறுநர்
கிராம நிர்வாக அலுவலர்,
குருநல்லிபாளையம் கிராமம்,


President
Kurunallipalayam Panchayat



2. K. Lakshmi

3. R. Manoj

4. 

5. S. Anand

6. K. Anand

7. R. Manoj

8. P. Anand

9. S. Anand

10. K. Sarojini

11. S. Anand

12. S. Anand

13. V. Anand

14. K. Anand

15. V. Anand

16. N. Anand

S. Anand

A. Anand



திரு. சிவசுந்தரன்
திரு. சிவசுந்தரன்
திரு. சிவசுந்தரன்



பொதுமக்கள் வாக்குமூலம்

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், வடசித்தூர் உள்வட்டம், வடசித்தூர் கிராமம், கதவு.எண்.3/33 என்ற முகவரியில் வசித்து வரும் திரு.S.அப்துல் ஜப்பார் என்பவர் குருநல்லிபாளையம் கிராமத்தில் தனக்கு பாத்தியமுள்ள புல.எண்.44/9(பகுதி) - ல் 1.64.0 ஹெக்டேரில் 0.95.0 ஹெக்டேர், புல.எண்.45(பகுதி) - ல் 1.03.0 ஹெக்டேரில் 0.45.0 ஹெக்டேர், புல.எண்.46/1 - ல் 0.46.0 ஹெக்டேர், 47/3(பகுதி) - ல் 0.73.0 ஹெக்டேரில் 0.30.0 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரி மனு அளித்துள்ளார் என்பதை நாங்கள் அறிவோம். மேற்படி மனுதாரர் மேற்படி புலங்களில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுத்திட குருநல்லிபாளையம் கிராம மக்களான எங்களுக்கு எவ்வித ஆட்சேபணையுமில்லை என்பதை இதன் மூலம் தெரிவித்துக் கொள்கின்றோம்.

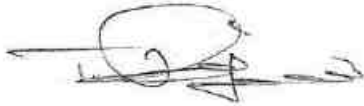
கிணத்துக்கடவு வட்டம்
M. N. Jayaraj Shanlen.

படித்துப் பார்த்தேன் சரி
படிக்கக் கேட்டுடன்

1 President
Kurunallipalayam Panchayat

2 K. சந்திரசேகர்.

3 R. Kurumaseelan

4 

5. S. சுகஜசாமி

6. கண்ணசூரன்

7. R. நடராஜன்

8. P. ராமசாமி

9. சைவசாமி



S. S. S. S. S.

V. S. S. S. S.

K. S. S. S. S.

S. S. S. S. S.

f. S. S. S. S.

V. S. S. S. S.

K. S. S. S. S.

V. S. S. S. S.

N. S. S. S. S.

S. S. S. S. S.

A. S. S. S. S.

A. S. S. S. S.

31. S. S. S. S. S.

S. S. S. S. S.

S. S. S. S. S.

பொதுமக்கள் வாக்குமூலம்

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், வடசித்தூர் உள்வட்டம், வடசித்தூர் கிராமம், கதவு.எண்.3/33 என்ற முகவரியில் வசித்து வரும் திரு.S.அப்துல் ஜப்பார் என்பவர் குருநல்லிபாளையம் கிராமத்தில் தனக்கு பாத்தியமுள்ள புல.எண்.44/9(பகுதி) - ல் 1.64.0 ஹெக்டேரில் 0.95.0 ஹெக்டேர், புல.எண்.45(பகுதி) - ல் 1.03.0 ஹெக்டேரில் 0.45.0 ஹெக்டேர், புல.எண்.46/1 - ல் 0.46.0 ஹெக்டேர், 47/3(பகுதி) - ல் 0.73.0 ஹெக்டேரில் 0.30.0 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க அனுமதி கோரி மனு அளித்துள்ளார் என்பதை நாங்கள் அறிவோம். மேற்படி மனுதாரர் மேற்படி புலங்களில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுத்திட குருநல்லிபாளையம் கிராம மக்களான எங்களுக்கு எவ்வித ஆட்சேபணையுமில்லை என்பதை இதன் மூலம் தெரிவித்துக் கொள்கின்றோம்.

M. Vijay Shanlan.

படித்துப் பார்த்தேன் சரி
படிக்கக் கேட்டேன்

1 President
Kurunallipalayam Panchayat

2 K. முருகேசன்.

3 R. Kurumasingh

4 

5 S. சுகுமார்சாமி

6 க. ராஜசுந்தர்

7 R. நடராஜ்

8 P. ராமசாமி

9 சென்னை

நில வருவாய் ஆய்வாளர் அலுவலகம்,
வடசித்தூர் உள்வட்டம்


அ1 - அறிவிப்பு

கிணத்துக்கடவு வட்டம், குருநல்லிபாளையம் கிராமத்தில் வசிக்கும் பொதுமக்களுக்கு இதன் மூலம் அறிவிக்கப்படுவது என்னவென்றால்,


கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், வடசித்தூர் உள்வட்டம், வடசித்தூர் கிராமம், கதவு.எண்.3/33 என்ற முகவரியில் வசித்து வரும் திரு.S.அப்துல் ஜப்பார் என்பவர் குருநல்லிபாளையம் கிராமத்தில் தனக்கு பாத்தியமுள்ள புல.எண்.44/9(பகுதி) - ல் 1.64.0 ஹெக்டேரில் 0.95.0 ஹெக்டேர், புல.எண்.45(பகுதி) - ல் 1.03.0 ஹெக்டேரில் 0.45.0 ஹெக்டேர், புல.எண்.46/1 - ல் 0.46.0 ஹெக்டேர், 47/3(பகுதி) - ல் 0.73.0 ஹெக்டேரில் 0.30.0 ஹெக்டேர் ஆக மொத்தம் 2.16.5 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க உத்தேசித்துள்ளார்.

இந்நேர்வு குறித்து பொதுமக்கள் எவருக்கும் ஆட்சேபணைகள் ஏதுமிருப்பின் இவ்வறிவிப்பு பிரசித்தம் செய்யப்பட்ட நாளிலிருந்து 15 தினங்களுக்குள் தமது ஆட்சேபணைகளை எழுத்து மூலமாக நேரிலோ அல்லது தபால் மூலமாகவோ கிணத்துக்கடவு வட்டாட்சியரிடமோ அல்லது வடசித்தூர் உள்வட்ட நில வருவாய் ஆய்வாளரிடமோ தெரியப்படுத்துமாறு அறிவிக்கப்படுகிறார்கள்.


அங்ஙனம் குறித்த நாட்களுக்குள் ஆட்சேபணைகள் ஏதும் இவ்வலுவலகத்தில் கிடைக்கப்பெறவில்லையெனில் மேற்குறிப்பிட்டவாறு சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுப்பது குறித்து பொதுமக்கள் எவருக்கும் ஆட்சேபணைகள் இல்லை எனக் கருதி மேல்நடவடிக்கை தொடரப்படும் என்றும் இதன்மூலம் தெரிவிக்கப்படுகிறது.


வருவாய் ஆய்வாளர்,
வடசித்தூர்,
கிணத்துக்கடவு வட்டம்,

மேற்கண்ட சங்கதியினை குருநல்லிபாளையம் கிராமத்தில் தண்ணீர் மூலம் பிரசித்தம் செய்தும் குடிகள் கையொப்பம் பெற்றும் மீள சமர்ப்பிக்குமாறு குருநல்லிபாளையம் கிராம நிர்வாக அலுவலர் கேட்டுக்கொள்ளப்படுகிறார்.

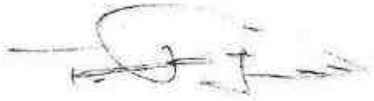

வருவாய் ஆய்வாளர்,
வடசித்தூர்,
கிணத்துக்கடவு வட்டம்,

பெறுநர்
கிராம நிர்வாக அலுவலர்,
குருநல்லிபாளையம் கிராமம்,


President
Kurunallipalayam Panchayat

2. K. Ramesh

3. R. Karan

4. 

5. S. Anand

6. K. Srinivas

7. R. Manoj

8. P. Anand

9. S. Anand

Handwritten text at the bottom of the page, possibly a signature or date.

அலுவலர்:

ராஜேந்திரன்

S/o. திருமுனியங்கண்ணன்

கிணக்குத்துப்புளையல் கிணக்குத்துப்புளையல் (TK) கோவை. (DT)

அலுவலர் :-

உயர்நிலை உட்கட்டுமான அலுவலர்.

கிணக்குத்துப்புளையல் திட்டம்.

உயர்நிலை அலுவலர் கமிஷனர் அலுவலகம் மய்யூர்.

ஆய்வு:

நபர் கோவை கோவை திட்டத்தின் 4வது பகுதி 41ல்.

அட்டி அட்டி அட்டி. கோவைத்தின் லாபம், கிணக்குத்துப்புளையல்.

உட்கட்டுமான அலுவலர் 2வது பகுதி. அட்டி அட்டி கிணக்குத்துப்புளையல்

கமிஷனர் 3/33 கமிஷனர் அட்டி அட்டி அட்டி

41/5. அட்டி அட்டி அட்டி அட்டி அட்டி அட்டி அட்டி அட்டி அட்டி அட்டி அட்டி அட்டி

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அட்டி அட்டி

அமைப்புகள் :-

K. சேஷசேகர்
SIO குடியேற்றம்
திருநாட்டி மாவட்டம்
கிணத்தூத்துக்குடி (TK)
கோயம்புத்தூர் (DT)

பெயர் :-

உயர்நீதி, உட்கட்டுப்பாட்டு அலுவலர்,
கிணத்தூத்துக்குடி (TK)
கோயம்புத்தூர் (DT).

பெயர் :- அருண் சிவசுந்தரி அமைப்புகள் பற்றியது.

ஆய்வு / அட்டை

நான் மெனக்கேட்ட சேஷசேகர் அவர்கள் 53-ல்
உயர்நீதி மருமகனாக, கோயம்புத்தூர் மாவட்டம், கிணத்தூத்துக்குடி
உயர்நீதி கிராமம், கிணத்தூத்துக்குடி 3/33 'அம்மா சேஷசேகர்'
உயர்நீதி உயர்நீதி சி.ச. அப்துல் ரஹ்மான், சிணத்தூத்துக்குடி
கிராமத்தின் கிணத்தூத்துக்குடி பற்றியும் 44/9 (P)-ல்
1.64.0 அமைப்புகள் 0.95.0 அமைப்புகள், 44/9 (P)-ல்
1.03.0 அமைப்புகள் 0.45.0 அமைப்புகள், 44/9 (P)-ல்
0.46.0 அமைப்புகள், 47/3 (P)-ல் 73.0 அமைப்புகள் 0.30.0
அமைப்புகள் ஆகியவை 2.16.5 அமைப்புகள் பற்றியும்
உட்கட்டுப்பாட்டு அலுவலர் சிணத்தூத்துக்குடி பற்றியும் கிராமம்
உட்கட்டுப்பாட்டு அலுவலர் சிணத்தூத்துக்குடி பற்றியும் அமைப்புகள்
நான் அறிந்தேன். மேலும் மெனக்கேட்டு மேலும் அமைப்புகள்
சிணத்தூத்துக்குடி பற்றியும் கிராமம் உட்கட்டுப்பாட்டு
அமைப்புகள் அமைப்புகள் உட்கட்டுப்பாட்டும், கிணத்தூத்துக்குடி
அமைப்புகள் அமைப்புகள் அமைப்புகள் அமைப்புகள்.

கிணத்தூத்துக்குடி
K. சேஷசேகர்

பரிந்துரைப்பபட்டவர்கள்

கோயம்புத்தூர் மாவட்டம், திணைத்துக்கடைய வட்டம்,
 உட்கிராமம் கிராமம் தஞ்சை எண் 3/33 என்ற பிரதேசத்தில் உள்ள
 உட்கிராமம் (உட்கிராமம்) கிராமம் பிரதேசத்தை ராஜ்யத்தின் மூலம் S.A. அபிமானம் என்கிற
 S. சிபிசூல் அபிமானம் என்பதற்குக் கீழ்க்கண்ட வட்டம், திருச்சிபார்சு அட்டவாடி
 கிராமத்தில் உள்ள எண் 680-ல் தஞ்சை எண் 45/- நெ. காணலயல்
 1-03-0 4. சென். ஏர் அபிமானம் துடிக்காய் நெகல் தரப்படுவதான
 துடிக்காய் பத்திர பதிவு எண் 1134/2008 ல் 44 பாத்தியப்பட்டு, துடிக்காய்
 உள்ள எண் 783 ல் தஞ்சை எண் 47/3 ல் 0-73-0 4. சென். ஏர் அபிமானம்
 துடிக்காய் தஞ்சை எண் 46/1 ல் 0-46-0 அபிமானம் துடிக்காய் நெகல்
 தரப்படுவதான துடிக்காய் பத்திர பதிவு எண் 1376/2013 நாள் 28/03/2013
 அபிமானம் துடிக்காய் நெகல் பாத்தியப்பட்டு, துடிக்காய் அபிமானம்
 A. துடிக்காய் S.A. அபிமானம் என்கிற S. சிபிசூல் அபிமானம் மூலம்
 99 ல் தஞ்சை எண் 44/9 நெ. காணலயல் 1-64-0 அபிமானம் துடிக்காய்
 நெகல் தரப்படுவதான துடிக்காய் பத்திர பதிவு எண் 1535/2019 நாள்
 28.6.2019 ல் 44 பாத்தியப்பட்டு S. சிபிசூல் அபிமானம் மூலம் துடிக்காய்
 அபிமானம் பாத்தியப்பட்டு

மேற்படி பிரதேசத்தில் உள்ள உட்கிராமம் கிராமம் பிரதேசத்தை
 மூலம் S.A. அபிமானம் என்கிற S. சிபிசூல் அபிமானம்
 அபிமானம் 45, 47/3, 46/1, 44/9 துடிக்காய் காணலயலின்
 மூலம் துடிக்காய் மூலம் துடிக்காய் அபிமானம் துடிக்காய்
 அபிமானம் 45 நெ. காணலயல் 4. சென். ஏர் 1-03-0 அபிமானம்
 0-46-0 அபிமானம் துடிக்காய், உள்ள எண் 783 ல் தஞ்சை
 47/3 நெ. காணலயல் 4. சென். ஏர் 0-73-0 அபிமானம்
 0-90-5 அபிமானம் துடிக்காய், உள்ள எண் 783 ல் 46/1
 0-46-0 அபிமானம் துடிக்காய் 4. சென். ஏர் 0-46-0
 துடிக்காய், உள்ள எண் 99 ல் தஞ்சை எண் 44/9 நெ. காணலயல்
 அபிமானம் துடிக்காய் 4. சென். ஏர் 0-95-0 அபிமானம் துடிக்காய்
 மூலம் 2-16-5 4. சென். ஏர் அபிமானம் துடிக்காய் துடிக்காய்
 அபிமானம் துடிக்காய்

S. VELUSAMY

(Explosives Dealer & Blasting Contractor)

Form 22 Lic No : E/SC/TN/22/59(E10196)

CELL : 94875 39257

No. 1/2-576, Madhu Thottam,
MYLAMBADI (Po) - 638 314,
Bhavani Tk, Erode Dt.

15/08/2021

Date:.....

To

Abdul Jabbar,
S/o Shand Mohammed Rawther,
No.3/33, Vadachithur Post,
Kinathukadavu Taluk,
Coimbatore District,
Tamilnadu - 641 202.

Ref: Your Letter dated

Sub: Regarding blasting work using explosives in your proposed quarry.

Sir,

We are having explosives licence in Form (LE-3) 22 holding Licence No: E/SC/TN/22/59(E10196) situated in Survey S.F.No.126/5, Valampalayam Village, Erode District. Our office functions at Address- No.1/2 576, Madhu Thottam, Mylambadi Post, Bhavani Taluk, Erode District.

We are enacting 2 explosives vans for transporting detonators and class 2 separately for our Magazine to our work site and well experienced and licenced blasters and shotfirers for safe Blasting work since 5 years without untoward incident.

We are willing to undertake work on contract basis at your Survey.Nos.44/9(P), 45(P), 46/1 & 47/3(P) in Kurunallipalayam Village, Kinathukadavu Taluk, Coimbatore District.

Thanking You,

For S.Velusamy Explosives



(Proprietor)

Enclosure:

1. Licence Copy





Dr. JAYANTHI. M, I.F.S
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY – TAMILNADU

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.7059/1(a)/EC.No: 4171/2020 dated: 20.03.2020

To

Thiru.S.Abdul Jabbar
No 3/33, Vadachithur Post
Kinathukadavu Taluk
Coimbatore District

Sir/Madam,

Sub: SEIAA-TN – Proposed for the Rough stone and Gravel quarry lease over an extent of 1.66.0ha in S.F.Nos. 107/1 (P) & 108/1 (P), at Andipalayam Village of Kinathukadavu Taluk, Coimbatore District, Tamil Nadu by Thiru.S. Abdul Jabbar-issue of Environmental Clearance – Reg.

Ref: 1. Your Application for Environmental Clearance dated: 22.08.2019
2. Minutes of the 145thSEAC meeting held on 25.02.2020
3. Minutes of the 373rdSEIAA meeting held on 20.03.2020

Details of Minor Mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining environmental clearance for mining/quarrying of minor minerals based on the particulars furnished in your application as shown below.



[Signature]
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1	Name of Project Proponent and address	Thiru.S.Abdul Jabbar No 3/33, Vadachithur Post Kinathukadavu Taluk Coimbatore District
2	Location of the Proposed Activity	
	Survey Number	107/1 (P) & 108/1 (P)
	Latitude and Longitude	10° 48' 51.68"N to 10° 48' 58.33"N 77° 05' 46.64"E to 77° 05' 49.80"E
	Village	Andipalayam
	Taluk	Kinathukadavu
	District	Coimbatore
3	Proposed Activity	
	i. Minor mineral	Rough Stone and Gravel Quarry
	ii. Mining Lease Area	1.66.0ha
	iii. Approved quantity	1,63,445 m ³ of Rough Stone and 23,632 m ³ of gravel
	iv. Depth of Mining	32m
	v. Type of mining	Opencast Mechanized Mining
	vi. Category(B1/B2)	B2
	vii. Precise area communication approved by the District Collector with date	Rc.No.559/Mines/2018, Dated: 15.07.2019
	viii. Mining plan approval by Additional Director of Geology and Mining, Chennai	Rc.No.559/Mines/2018, Dated: 29.07.2019
	ix. Scheme of Mining period	5Years
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:	28Employees
6	Utilities	
	i. Source of Water :	Water Vendors & Existing Borehole
	ii. Quantity of Water Requirement in KLD:	4.26 KLD
	a. Domestic & Drinking purpose	1.00 KLD
	b. Green Belt & Dust Suppression	3.26KLD
	iii. Power Requirement:	
	a. Domestic Purpose	TNEB
	b. Industry Purpose	1,34,692 Liters
7	Cost	
	i. Project Cost	Rs. 49.50lakhs
	ii. EMP Cost	Rs. 3.80 lakhs
8	Date of Appraisal by SEAC:-	25.02.2020
	Agenda No:	145
9	Date of Review/Discussion by SEIAA and the Remarks:-	
	The proposal was placed before the SEIAA in its 373 rd Meeting held on 20.03.2020 and the Authority after careful consideration, decided to grant environmental clearance to the said project Mining of Rough Stone and Gravel quarry subject to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.	
10	Validity:	
	This Environmental Clearance is granted for the production of 1,63,445 m³ of Rough Stone and 23,632 m³ of gravel for the period of 5 Year from the date of execution of the Scheme of mining.	

The Proponent has furnished affidavit in Hundred Rupees stamp paper attested by the Notary stating that



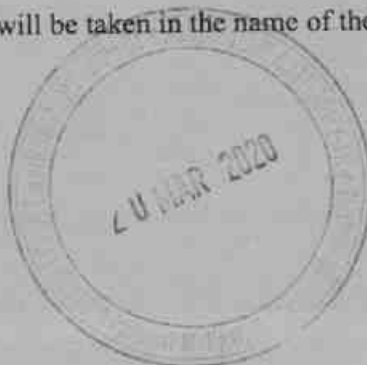
I, Thiru.S.AbdulJabbarNo 3/33, Vadachithur PostKinathukadavuTalukCoimbatore Districtstate solemnly declare and sincerely affirm that:

I have applied for getting Environmental Clearance to SEIAA, Tamil Nadu for mining lease for mining of Rough stone and Gravel quarry lease over an extent of 1.66.0 ha in S.F.Nos. 107/1 (P) & 108/1 (P), at Andipalayam Village of KinathukadavuTaluk, Coimbatore 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 within 10km radius from the boundary of the proposed site.
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)
Developing the garden Maintenance in Andipalayam Village Govt school,	53.31	1.07
Total cost Allocation	53.31	1.07

3. I solemnly declare & affirm that details of other quarries within 500m radius from the periphery of the quarry including my quarry isgiven below.
4. There will not be any hindrance or disturbance to the people during transportation. No villages are enrooted during transportation.
5. There are no habitations within 300m radius from the periphery of my 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.



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R. Lakshmi

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 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.

Further, the Project Proponent has submitted a copy of the letter obtained from the Assistant Director, Dept of Geology and mining, Coimbatore District in his letter Rc.No.59/mines/2018 dated:02.12.2019 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 Quarry Owner	Name of Village	S. F. No.	Extent in hectare	Lease period	Remarks
1. Existing Quarries:						
Nil						
2. Present proposed Quarries:						
1	Abdul Jabbar	Andipalayam	107/1 (P) & 108/1 (P)	1.66.0ha	-	
3. Lease Expired and Abandoned Quarries:						
-Nil-						

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.



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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 applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.
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.



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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.
Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.
15. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
16. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.
19. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
20. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
21. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF& CC, GoI on 16.11.2009.
22. The following measures are to be implemented to reduce Air Pollution during transportation of mineral
 - i. Roads shall be graded to mitigate the dust emission.
 - ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust



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23. The following measures are to be implemented to reduce Noise Pollution
- i. Proper and regular maintenance of vehicles and other equipment
 - ii. Limiting time exposure of workers to excessive noise.
 - iii. The workers employed shall be provided with protection equipment and earmuffs etc.
 - iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
24. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoEF& CC, GoI to control noise to the prescribed levels.
25. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
26. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
27. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
28. The following measures are to be adopted to control erosion of dumps:-
- i. Retention/ toe walls shall be provided at the foot of the dumps.
 - ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.
29. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous& other wastes (Management, and trans Boundary Movement) Rules, 2016 and its amendments thereof to the recyclers authorized by TNPCB.
30. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
31. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.



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32. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
33. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
34. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
35. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
36. It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 5 hectares within the mining lease period of this application.
37. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site.
38. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
39. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.



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40. Bunds to be provided at the boundary of the project site.
41. 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.
42. At least 10 Neem trees should be planted around the boundary of the quarry site.
43. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
44. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
45. The Project Proponent shall provide solar lighting system to the nearby villages.
46. Rainwater shall be pumped out Via Settling Tank only
47. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
48. Safety equipments to be provided to all the employees.
49. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
50. 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.
51. 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.
52. 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.
53. 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.
54. 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.
55. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.



56. 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.
57. 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.
58. Ground water quality monitoring should be conducted once in every Six months and the report should be submitted to TNPCB.
59. Proper barrier for reducing the Noise level 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.
60. 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.
61. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
62. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
63. 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.
64. The mitigation measures proposed to control the fugitive emission and dust emissions during mining operation and transportation shall be strictly followed.
65. The EMP proposed for 1,60,000 for Air Quality Monitoring for Greenbelt Development and Maintenance of machineries and water sprinkling shall be strictly followed.
66. 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), 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,



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- 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).
67. To ensure safety measures along the boundary of the quarry site, security guards are to be engaged during the entire period of mining operation.
68. All the commitment made by the project proponent in the proposal shall be strictly followed.
69. 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.
70. The mine closure plan submitted by the project proponent shall be strictly followed after the lapse of the mine as reported.
71. All the condition imposed by the Additional Director of Geology and Mining, Rc.No.559/Mines/2018, Dated: 29.07.2019 should be strictly followed.
72. The project proponent shall utilize the CER amount for Rs.1.07 Lakhs (2% of project cost) Developing the garden Maintenance in Andipalayam Village Govt school as per Office Memorandum of MoEF& CC dated 01.05.2018. The above activity shall be carried out before obtaining CTO from TNPCB.
73. 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).
74. 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.
75. 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.

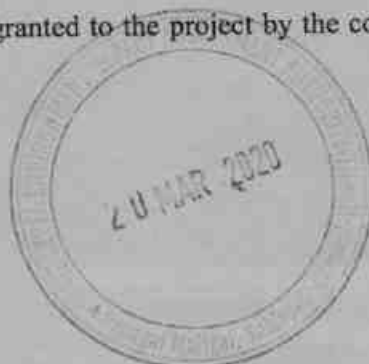
76. The EC is valid only if the scheme of the mining plan is approved by the Commissioner of Geology & Mining or any officers nominated on his behalf.
77. If there is any change in the proposal of production or handling the waste amendment has to be submitted to SEIAA for further approval.
78. This EC is approved as per the G.O.No. 79 & Rule 41 & 42 of Tamil Nadu Mining Mineral Concession Rule 1959.

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.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should



- also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
 10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
 11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
 12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
 13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
 14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
 15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.
 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.



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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, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary, 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, Coimbatore District
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Spare.





CHENNAI METTEX LAB PRIVATE LIMITED[®]

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032, Tamil Nadu, INDIA
Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN: U74999TN2008PTC069459
Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.10.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66711 Test Certificate Date : 03.01.2023
Sample Description : Ambient Air Monitoring
Location of Sampling : AAQ1 Core Zone - 10°48'54.14"N 77° 5'25.59"E
Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07
Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/25 & 28.11.2023
Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/25 & 28.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	71.3	23.5	45.3	8.5	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	71.8	22.6	43.5	7.3	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	70.5	21.3	44.7	7.9	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	70.9	21.8	42.6	9.0	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	78.4	22.9	43.8	8.4	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	79.6	21.2	44.9	8.3	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	71.7	22.1	42.6	7.4	18.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	79.5	23.0	44.0	7.6	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	71.6	21.7	42.5	8.4	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	70.7	22.6	43.6	8.9	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	79.4	21.7	43.8	7.4	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	71.8	22.5	45.0	7.1	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	72.0	21.7	44.2	8.4	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	79.7	22.6	44.8	8.7	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	70.2	21.0	43.6	7.6	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	79.1	22.6	43.6	7.7	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	71.6	21.8	44.8	8.1	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	70.0	22.3	43.6	7.8	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	78.4	21.0	42.9	8.6	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	69.7	22.8	44.9	8.4	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	70.7	21.6	42.0	7.5	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	69.1	21.4	44.6	7.9	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	70.4	22.9	43.9	8.1	18.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	71.9	23.0	43.2	8.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	72.0	21.3	44.1	7.8	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	79.4	21.6	42.7	9.0	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note:BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0);
Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



P. Kavitha

Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory



CHENNAI METTEX LAB PRIVATE LIMITED[®]

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66712

Test Certificate Date : 03.01.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ 2 – Kurunallipalayam - 10°48'49.13"N 77°4'48.21"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/26 & 28.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/26 & 28.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	71.6	21.1	43.7	6.9	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	72.6	22.2	42.3	6.7	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	72.1	20.9	44.1	6.2	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	72.9	21.3	43.9	5.3	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	73.9	21.1	43.3	5.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	72.1	21.1	42.7	6.2	22.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	61.4	20.4	42.2	6.6	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	62.1	21.5	44.8	6.4	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	61.9	21.7	44.1	5.5	22.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	71.8	22.1	45.8	5.2	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	73.6	20.6	44.2	5.8	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	72.6	19.9	43.4	6.7	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	72.4	19.1	43.9	5.9	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	72.8	18.9	43.2	5.8	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	76.1	20.5	42.7	5.3	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	74.6	20.9	41.2	5.7	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	75.2	20.3	41.6	5.5	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	63.8	19.9	42.2	5.2	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	64.4	21.5	42.6	5.8	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	63.1	20.1	41.1	5.6	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	64.7	21.7	42.7	5.5	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	75.2	20.4	41.2	7.7	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	76.9	19.7	42.7	7.6	19.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	74.6	18.9	43.9	7.3	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	75.4	20.1	43.4	7.6	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	75.7	21.3	42.9	7.7	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit, DL: Detection Limit; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



P. Kavitha
Reviewed & Authorized By
P. KAVITHA
Technical Manager
Authorised Signatory



CHENNAI METTEX LAB PRIVATE LIMITED[®]

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66713

Test Certificate Date : 03.01.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ3 – Periyakalandai - 10°48'57.16"N 77° 07'42.37"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/27 & 28.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/27 & 28.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	71.8	21.6	43.6	7.5	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	79.6	22.8	42.8	7.1	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	78.1	21.9	44.6	8.6	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	71.5	22.7	45.0	8.8	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	72.0	21.3	42.6	8.1	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	68.9	23.0	46.3	9.2	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	60.1	22.9	43.7	7.6	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	60.8	21.7	43.1	7.9	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	61.6	23.9	42.7	8.0	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	61.8	22.8	44.1	7.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	60.5	21.5	43.7	7.4	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	79.7	21.9	44.8	7.1	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	78.6	21.0	43.9	7.6	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	78.1	21.9	44.7	8.3	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	70.5	21.2	42.9	8.7	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	70.8	22.6	43.7	9.0	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	71.6	22.1	42.6	7.4	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	71.1	21.4	42.1	7.3	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	79.7	21.9	44.8	8.4	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	78.3	21.0	45.0	8.1	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	60.2	22.3	42.8	7.7	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	61.6	22.9	43.6	7.4	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	61.4	21.5	44.5	8.6	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	79.6	21.1	42.7	8.1	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	78.4	23.0	43.6	8.4	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	70.0	22.6	44.8	8.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ; DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0);

Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



Reviewed & Authorized By

P. KAVITHA

Technical Manager

Authorised Signatory



CHENNAI METTEX LAB PRIVATE LIMITED[®]

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66714

Test Certificate Date : 03.01.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ4 – Kappalankarai - 10°46'0.75"N 77° 5'50.24"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/28 & 28.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/28 & 28.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	69.7	21.7	43.7	7.6	19.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	60.8	22.6	42.1	7.1	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	69.4	21.1	44.9	8.6	18.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	69.9	21.9	43.8	8.1	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	69.5	22.6	42.6	7.3	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	68.7	22.4	43.1	7.9	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	69.3	23.9	46.8	9.5	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	61.7	22.4	45.0	8.1	23.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	62.0	21.9	44.6	9.0	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	61.6	22.5	43.8	7.3	19.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	60.5	21.7	44.8	7.7	18.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	69.4	21.5	43.2	8.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	69.1	21.3	42.6	8.1	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	69.8	22.0	42.1	8.9	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	69.7	22.9	44.8	7.6	18.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	69.6	22.6	45.0	7.1	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	69.8	21.4	43.7	8.9	19.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	61.3	21.8	44.6	7.2	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	60.2	21.1	42.7	7.7	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	68.9	22.0	43.6	8.6	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	69.6	22.9	44.8	8.3	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	69.1	23.0	44.1	7.6	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	69.5	22.6	42.6	7.1	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	69.0	21.3	43.7	8.8	20.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	68.7	22.1	44.1	7.6	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	69.7	22.8	43.6	7.1	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ; DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



[Signature]
Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory



CHENNAI METTEX LAB PRIVATE LIMITED[®]

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN: U74999TN2008PTC069459

Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66715

Test Certificate Date : 03.01.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ5 – Arasampalayam - 10°50'33.58"N 77° 2'31.20"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/29 & 28.11.2023

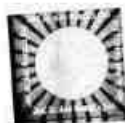
Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/29 & 28.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	70.7	22.7	43.7	7.6	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	78.3	21.6	44.8	7.1	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	79.4	23.0	45.0	8.9	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	70.5	22.6	42.6	8.4	21.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	71.7	21.8	42.7	8.5	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	71.9	21.1	44.6	9.0	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	70.5	22.0	42.8	7.2	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	79.6	21.4	42.1	7.6	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	78.7	23.6	43.6	8.1	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	78.0	22.1	44.0	8.7	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	79.6	21.8	44.8	8.1	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	70.8	21.4	46.1	9.6	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	71.4	22.3	44.1	8.4	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	72.0	23.0	43.6	9.3	22.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	78.7	22.3	43.8	7.9	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	79.4	21.7	42.6	7.2	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	79.1	21.2	42.1	9.0	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	70.4	22.6	42.8	8.2	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	71.7	22.3	43.6	7.6	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	70.5	21.4	43.1	7.2	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	79.6	21.9	44.9	8.3	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	78.3	22.8	44.3	8.0	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	70.4	21.4	43.9	8.3	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	71.8	22.0	42.8	7.9	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	71.1	21.7	43.7	7.5	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	79.4	23.0	44.5	8.3	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0);
Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



[Signature]

Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory



CHENNAI METTEX LAB PRIVATE LIMITED[®]

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN: U74999TN2008PTC069459
Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66716

Test Certificate Date : 03.01.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ6 - Mettuvavi - 10°50'21.58"N 77° 7'13.66"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/30 & 28.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/30 & 25.11.2023

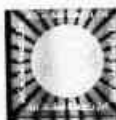
Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	69.4	21.3	43.6	7.6	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	69.8	22.6	44.8	7.1	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	69.1	21.8	42.5	8.2	18.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	69.0	23.0	43.6	8.8	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	69.7	22.7	45.0	9.0	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	68.6	21.3	44.9	8.4	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	69.0	21.9	44.1	7.6	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	61.6	21.7	43.6	7.1	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	69.9	22.9	42.8	8.0	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	69.0	22.1	44.6	8.8	18.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	69.4	21.4	45.0	7.4	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	68.4	21.8	43.6	7.7	19.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	60.5	22.6	42.8	8.5	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	61.4	22.8	44.6	9.0	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	69.3	21.7	43.7	8.6	19.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	68.4	21.0	42.1	8.1	18.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	60.3	22.6	44.0	7.4	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	61.8	21.7	43.8	7.2	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	68.4	21.1	43.2	7.7	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	69.3	22.3	42.3	8.0	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	60.7	22.6	43.6	9.5	18.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	61.4	23.2	46.7	7.6	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	62.0	21.4	43.2	7.2	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	69.8	21.9	42.9	7.7	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	69.3	22.5	43.5	8.4	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	69.8	21.4	44.9	9.0	19.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



[Signature]
Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory



CHENNAI METTEX LAB PRIVATE LIMITED[®]

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

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Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN: U74999TN2008PTC069459
Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66717

Test Certificate Date : 03.01.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ7 – Jakkarpalayam - 10°47'23.10"N 77° 08'33.19"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/31 & 28.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/31 & 28.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	69.4	21.8	43.7	7.6	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	68.8	22.6	45.0	8.1	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	68.0	22.1	44.8	8.8	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	68.8	21.4	42.1	7.4	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	68.1	23.0	42.7	7.0	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	69.6	21.9	44.1	8.6	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	69.7	22.3	43.7	8.9	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	68.4	22.7	42.0	7.4	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	68.1	21.0	44.8	7.8	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	67.8	21.6	43.6	8.0	19.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	57.6	22.8	42.7	8.5	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	67.7	23.0	43.6	9.0	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	67.5	21.3	44.9	7.6	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	68.4	22.1	45.0	7.2	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	68.3	22.8	42.6	8.4	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	69.7	21.6	43.7	8.9	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	69.3	21.3	44.9	8.1	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	69.6	22.8	44.1	7.6	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	68.7	22.4	43.6	7.8	19.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	68.0	22.1	42.7	8.0	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	68.5	23.0	42.2	8.6	22.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	69.4	21.6	43.6	8.1	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	68.7	22.8	44.8	7.6	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	69.5	21.4	45.0	7.2	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	68.3	21.1	44.2	7.0	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	69.7	22.5	42.6	8.2	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



P. Kavitha
Reviewed & Authorized By
P. KAVITHA
Technical Manager
Authorised Signatory



CHENNAI METTEX LAB PRIVATE LIMITED[®]

(Approved by AAI, AGMARK, APEDA, BIS, EIC, FSSAI, GAFTA, IOPEPC, MOEF & TEA BOARD)

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032, Tamil Nadu, INDIA

Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN: U74999TN2008PTC069459

Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66718

Test Certificate Date : 03.01.2023

Sample Description : Ambient Air Monitoring

Location of Sampling : AAQ8 – Kothavadi - 10°48'31.11"N 77°3'14.49"E

Sampling Plan & Procedure: IS 5182 Part 14:2000 & CML/LAB/ENV/SOP/07

Sampling Instrument ID & Calibration Due Date: CML/ENV/RDS/32 & 28.11.2023

Sampling Instrument ID & Calibration Due Date: CML/ENV/FDS/32 & 28.11.2023

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	NH ₃	O ₃	CO	Pb	Ni	As	C ₆ H ₆	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³	µg/m ³	ng/m ³	ng/m ³	µg/m ³	ng/m ³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
03.10.2022	7:00-7:00	73.6	21.3	43.9	7.6	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.10.2022	7:15-7:15	72.5	21.9	43.7	7.9	20.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10.10.2022	7:00-7:00	79.9	21.5	44.5	7.1	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.10.2022	7:15-7:15	79.1	22.1	42.4	6.8	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
17.10.2022	7:00-7:00	70.4	22.6	43.3	6.3	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.10.2022	7:15-7:15	72.8	23.1	44.0	7.2	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24.10.2022	7:00-7:00	71.3	22.7	43.5	7.3	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.10.2022	7:15-7:15	72.2	21.5	45.8	7.0	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
31.10.2022	7:00-7:00	71.7	21.9	43.9	7.9	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.11.2022	7:15-7:15	73.8	21.0	44.2	7.6	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.11.2022	7:00-7:00	71.6	21.9	44.4	7.4	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.11.2022	7:15-7:15	72.7	22.7	45.2	7.9	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.11.2022	7:00-7:00	70.8	22.4	45.6	6.8	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.11.2022	7:15-7:15	71.7	21.6	43.0	6.5	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.11.2022	7:00-7:00	72.8	22.4	43.3	7.2	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.11.2022	7:15-7:15	73.2	21.0	43.7	6.9	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.11.2022	7:00-7:00	71.4	21.6	44.0	7.1	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.11.2022	7:15-7:15	72.7	21.6	43.9	7.6	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.12.2022	7:00-7:00	70.1	21.9	43.7	7.9	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
06.12.2022	7:15-7:15	72.8	21.3	43.6	7.3	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.12.2022	7:00-7:00	71.8	23.6	43.5	7.1	22.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13.12.2022	7:15-7:15	70.9	22.8	42.3	6.8	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.12.2022	7:00-7:00	71.7	22.1	42.2	6.8	19.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
20.12.2022	7:15-7:15	70.3	21.9	42.6	6.5	19.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.12.2022	7:00-7:00	70.7	20.8	41.9	7.9	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27.12.2022	7:15-7:15	71.8	19.1	42.1	7.1	20.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;DL: Detection Limit ; NH₃: BDL (DL:20); O₃: BDL (DL:20); CO: BDL (DL:1.0); Pb: BDL (DL:0.1); Ni: BDL (DL:1.0); As: BDL (DL:1.0); C₆H₆: BDL (DL:1.0); BaP: BDL (DL:0.1)

Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited



[Signature]

Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory



CHENNAI METTEX LAB PRIVATE LIMITED[®]

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66719

Test Certificate Date : 03.01.2023

Sample Description : Ambient Noise Monitoring

Location of Sampling : N1 – Core Zone - 10°48'57.76"N 77°5'31.75"E

Location of Sampling : N2 – Kurunallipalayam - 10°48'49.02"N 77°4'47.85"E

Sampling Plan & Procedure: IS 9989:1981 & CML/LAB/ENV/SOP/10

Sampling Instrument : CML/ENV/SLM/001 & CML/ENV/SLM/002

Sampling Date : 19.10.2022						
Loction	N1- Project Area (Core Zone)			N2- Kurunallipalayam		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	39.5	48.7	46.18	40.1	49.6	47.05
07:00-08:00	40.1	49.2	46.69	40.3	50.3	47.70
08:00-09:00	41.9	50.8	48.32	41.5	51.1	48.54
09:00-10:00	43.4	54.1	51.44	42.5	53.9	51.22
10:00-11:00	44.3	55.7	52.99	43.4	52.6	50.08
11:00-12:00	44.7	55.3	52.65	44.9	56.4	53.69
12:00-13:00	44.2	55.6	52.89	45.1	56.7	53.98
13:00-14:00	43.7	54.1	51.47	42.9	55.2	52.44
14:00-15:00	44.4	55.9	53.19	44.1	55.8	53.07
15:00-16:00	43.9	54.4	51.76	43.2	54.6	51.89
16:00-17:00	44.2	55.3	52.61	45.6	55.4	52.82
17:00-18:00	43.8	54.7	52.03	44.4	54.9	52.26
18:00-19:00	42.1	52.4	49.78	42.2	52.3	49.69
19:00-20:00	41.7	51.9	49.29	42.1	51.7	49.14
20:00-21:00	41.3	51.1	48.52	40.9	51.2	48.58
21:00-22:00	40.6	49.5	47.02	39.8	49.6	47.02
22:00-23:00	39.7	49.8	47.19	39.1	48.7	46.14
23:00-00:00	38.4	47.1	44.64	38.7	46.2	43.90
00:00-01:00	37.8	46.3	43.86	36.9	45.5	43.05
01:00-02:00	38.1	47.6	45.05	37.5	46.6	44.09
02:00-03:00	37.8	45.4	43.09	36.9	44.7	42.36
03:00-04:00	35.0	44.9	42.31	34.1	43.7	41.14
04:00-05:00	35.9	43.1	40.85	35.7	43.2	40.90
05:00-06:00	36.4	44.5	42.12	35.5	44.9	42.36
Result	Day Means		50.6	Day Means		50.3
	Night Means		43.5	Night Means		42.5

Note: CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)

The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited



P. Kavitha
Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory



CHENNAI METTEX LAB PRIVATE LIMITED[®]

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66720

Test Certificate Date : 03.01.2023

Sample Description : Ambient Noise Monitoring
Location of Sampling : N3 – Periyakalandai - 10°48'56.77"N 77°7'44.70"E
Location of Sampling : N4 – Kappalankarai - 10°46'2.54"N 77°5'50.05"E
Sampling Plan & Procedure: IS 9989:1981 & CML/LAB/ENV/SOP/10
Sampling Instrument ID : CML/ENV/SLM/003 & CML/ENV/SLM/004

Sampling Date : 19.10.2022

Loction	N3 - Periyakalandai			N4 - Kappalankarai		
	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	40.6	50.7	48.09	41.7	51.2	48.65
07:00-08:00	41.1	51.3	48.69	42.1	53.8	51.07
08:00-09:00	42.9	51.9	49.40	42.9	53.3	50.67
09:00-10:00	42.4	53.2	50.54	43.3	54.1	51.44
10:00-11:00	43.3	54.6	51.90	43.7	55.8	53.05
11:00-12:00	43.5	54.4	51.73	44.1	54.4	51.78
12:00-13:00	44.7	55.8	53.11	44.5	55.9	53.19
13:00-14:00	44.1	55.5	52.79	43.9	54.2	51.58
14:00-15:00	44.6	55.8	53.11	44.4	55.8	53.09
15:00-16:00	44.2	55.3	52.61	43.8	54.4	51.75
16:00-17:00	43.3	54.9	52.18	44.6	53.6	51.10
17:00-18:00	44.5	55.3	52.64	43.9	54.1	51.49
18:00-19:00	43.1	52.4	49.87	43.1	52.8	50.23
19:00-20:00	42.6	53.8	51.11	42.8	53.7	51.03
20:00-21:00	41.9	51.1	48.58	41.3	52.3	49.62
21:00-22:00	40.5	49.8	47.27	41.7	52.4	49.74
22:00-23:00	39.4	48.2	45.73	40.0	51.2	48.51
23:00-00:00	37.6	46.0	43.58	40.9	49.5	47.05
00:00-01:00	36.3	45.8	43.25	39.1	48.3	45.78
01:00-02:00	35.5	44.3	41.83	38.4	48.8	46.17
02:00-03:00	33.7	43.4	40.83	36.8	45.4	42.95
03:00-04:00	34.3	43.7	41.16	36.3	45.2	42.72
04:00-05:00	33.1	42.3	39.78	35.4	44.8	42.26
05:00-06:00	34.6	43.2	40.75	35.6	48.1	45.33
Result	Day Means		50.6	Day Means		51.1
	Night Means		41.6	Night Means		44.6

Note: CPCB Norms Residential Area Day Time:55 dB(A); Night Time:45 dB(A)

The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited



Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory



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TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66721

Test Certificate Date : 03.01.2023

Sample Description : Ambient Noise Monitoring
Location of Sampling : N5 – Arasampalayam - 10°50'32.92"N 77°2'30.46"E
Location of Sampling : N6 – Mettuvavi - 10°50'20.24"N 77°7'12.27"E
Sampling Plan & Procedure: IS 9989:1981 & CML/LAB/ENV/SOP/10
Sampling Instrument : CML/ENV/SLM/001 & CML/ENV/SLM/002

Sampling Date : 07.12.2022						
Loction	N5 - Arasampalayam			N6- Mettuvavi		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	41.7	51.1	48.56	42.5	53.6	50.91
07:00-08:00	41.9	52.5	49.85	42.1	52.4	49.78
08:00-09:00	42.1	53.9	51.17	43.9	54.1	51.49
09:00-10:00	43.6	54.1	51.46	43.1	54.9	52.17
10:00-11:00	42.3	53.7	50.99	45.8	56.1	53.48
11:00-12:00	44.8	55.3	52.66	45.6	56.5	53.83
12:00-13:00	44.2	54.9	52.24	46.1	58.4	55.64
13:00-14:00	44.7	55.7	53.02	45.7	57.6	54.86
14:00-15:00	44.8	55.4	52.75	46.6	58.9	56.14
15:00-16:00	45.1	56.6	53.89	45.3	56.1	53.44
16:00-17:00	44.9	55.1	52.49	45.4	56.7	54.00
17:00-18:00	43.5	54.6	51.91	44.8	55.6	52.94
18:00-19:00	42.7	53.9	51.21	43.5	54.9	52.19
19:00-20:00	40.4	51.5	48.81	42.1	53.1	50.42
20:00-21:00	41.8	50.4	47.95	41.8	52.4	49.75
21:00-22:00	38.2	47.3	44.79	41.3	51.7	49.07
22:00-23:00	38.5	49.8	47.10	40.9	51.3	48.67
23:00-00:00	37.9	46.4	43.96	39.1	50.7	47.98
00:00-01:00	36.2	45.8	43.24	39.8	49.4	46.84
01:00-02:00	35.8	44.3	41.86	38.2	48.2	45.60
02:00-03:00	35.1	44.1	41.60	37.5	47.8	45.18
03:00-04:00	34.5	43.9	41.36	36.4	46.1	43.53
04:00-05:00	33.7	43.2	40.65	35.6	45.5	42.91
05:00-06:00	35.3	44.7	42.16	36.3	46.8	44.16
Result	Day Means		50.6	Jay Means		48.9
	Night Means		42.1	Night Means		41.7

Note: CPCB Norms Residential Area Day Time:55 dB(A); Night Time:45 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited



Reviewed & Authorized By
P. KAVITHA
Technical Manager
Authorised Signatory



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TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry, Extent : 2.16.5 Ha
S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P), Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District.

Test Certificate No : CML/22-23/66722

Test Certificate Date : 03.01.2023

Sample Description : Ambient Noise Monitoring
Location of Sampling : N7 – Jakkarpalayam - 10°47'22.56"N 77°8'33.32"E
Location of Sampling : N8 – Kothavadi - 10°48'32.00"N 77°3'13.54"E
Sampling Plan & Procedure: IS 9989:1981 & CML/LAB/ENV/SOP/10
Sampling Instrument ID : CML/ENV/SLM/003 & CML/ENV/SLM/004

Sampling Date : 07.12.2022						
Loction	N7- Jakkarpalayam			N8- Kothavadi		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	40.6	51.2	48.55	42.8	51.5	49.04
07:00-08:00	41.4	52.9	50.19	42.1	52.7	50.05
08:00-09:00	42.9	53.1	50.49	43.9	52.6	50.14
09:00-10:00	43.4	54.5	51.81	44.2	54.1	51.51
10:00-11:00	43.8	54.7	52.03	44.7	55.2	52.56
11:00-12:00	44.3	55.4	52.71	45.5	56.1	53.45
12:00-13:00	45.7	56.9	54.21	45.3	56.8	54.09
13:00-14:00	43.5	54.4	51.73	45.1	55.7	53.05
14:00-15:00	44.1	54.2	51.59	45.9	54.1	51.70
15:00-16:00	45.8	55.8	53.20	44.8	54.1	51.57
16:00-17:00	43.9	54.1	51.49	44.4	53.7	51.17
17:00-18:00	44.1	55.6	52.89	44.3	53.8	51.25
18:00-19:00	44.7	54.9	52.29	43.9	52.2	49.79
19:00-20:00	42.5	53.1	50.45	42.4	52.7	50.08
20:00-21:00	41.6	51.5	48.91	41.8	50.5	48.04
21:00-22:00	39.7	50.3	47.65	40.4	49.1	46.64
22:00-23:00	40.3	50.7	48.07	39.7	48.7	46.20
23:00-00:00	38.4	49.1	46.44	38.9	47.1	44.70
00:00-01:00	37.9	47.6	45.03	37.1	48.5	45.79
01:00-02:00	36.1	45.8	43.23	37.3	47.1	44.52
02:00-03:00	36.5	45.5	43.00	36.8	46.8	44.20
03:00-04:00	35.9	44.2	41.79	36.1	46.1	43.50
04:00-05:00	34.3	43.1	40.63	36.8	47.4	44.75
05:00-06:00	34.7	43.0	40.59	37.2	46.8	44.24
Result	Day Means		51.1	Day Means		50.6
	Night Means		43.0	Night Means		44.5

Note: CPCB Norms Residential Area Day Time:55 dB(A); Night Time:45 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited



[Signature]
Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory



CHENNAI METTEX LAB PRIVATE LIMITED

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032.

(Approved/Recognized by APEDA, AGMARK, GAFTA, EIC, FSSAI, BIS & MoEF)

TEST REPORT

Page No.1 of 2

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374240

T.C Date : 03.01.2023

T.C No : CML/22-23/66723

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

Sample Description : Surface Water (SW-1) -Kothavadi Lake
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical		Group: Water
Colour	IS 3025 Part 4:1983 (Reaff.2017)	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff.2017)	7.66
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff.2019)	1119 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff.2017)	3.9 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff.2017)	660 mg/l
Total Hardness as CaCO ₃	IS 3025 Part 21:2009 (Reaff.2019)	220.69 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff.2019)	40.5 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff.2019)	29.1 mg/l
Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986 (Reaff.2019)	257 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff.2019)	150 mg/l
Sulphate as SO ₄	IS 3025 Part 24:1986 (Reaff.2019)	68.2 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff.2019)	0.4 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff.2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.38mg/l
Nitrate as NO ₃	IS 3025 Part 34:1988 (Reaff.2019)	12.2 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.005 mg/l)

...Contd....2

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Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032.

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Lab No: 2374240 T.C No: CML/22-23/66723 Dated : 03.01.2023

Page No. 2 of 2

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff. 2019)	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
BOD @ 27°C for 3 days	IS 3025 Part 44:1993 (Reaff:2019)	6.6 mg/l
Chemical Oxygen Demand	IS 3025 Part 58:2006 (Reaff:2017)	24 mg/l
Dissolved Oxygen	IS 3025 Part 38:1989 (Reaff:2019)	5.4 mg/l
Barium as Ba	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.01 mg/l)
Sulphide as H ₂ S	IS 3025 Part 29-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	25.4 mg/l
Discipline: Biological		Group: Water
Total Coliform	APHA 23 rd Edn. 2017:9221B	1600 MPN/100ml
<i>Escherichia coli</i>	APHA 23 rd Edn. 2017:9221F	170 MPN/100ml
Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number.		

End of Report

For Chennai Mettex Lab Private Limited


 Reviewed & Authorized By

G.S. RADHA
 Technical Manager
 Authorised Signatory




 Reviewed & Authorized By

P. KAVITHA
 Technical Manager
 Authorised Signatory

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TEST REPORT

Page No.1 of 2

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
Kurunallipalayam Village,

Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374241

Sample Description : Ground Water (WW-1) – Core Zone.
(as stated by customer)

T.C Date : 03.01.2023

T.C No : CML/22-23/66724

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

TEST	PROTOCOL	RESULTS
Discipline: Chemical		Group: Water
Colour	IS 3025 Part 4:1983 (Reaff.2017)	5
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff.2017)	6.97
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff.2019)	746 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff.2017)	1.9 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff.2017)	440 mg/l
Total Hardness as CaCO ₃	IS 3025 Part 21:2009 (Reaff.2019)	208.2 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff.2019)	35.5 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff.2019)	29.1 mg/l
Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986 (Reaff.2019)	180 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff.2019)	157.5 mg/l
Sulphate as SO ₄	IS 3025 Part 24:1986 (Reaff.2019)	54.1 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff.2019)	0.47 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff.2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.5 mg/l
Nitrate as NO ₃	IS 3025 Part 34:1988 (Reaff.2019)	11.2 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.005 mg/l)

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TEST REPORT

Page No.1 of 2

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
Kurunallipalayam Village,

Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374242

T.C Date : 03.01.2023

T.C No : CML/22-23/66725

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

Sample Description : Ground Water (WW-2) – Arasampalayam.
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical		Group: Water
Colour	IS 3025 Part 4:1983 (Reaff:2017)	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	7.86
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	1093 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	1.8 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff:2017)	645 mg/l
Total Hardness as CaCO ₃	IS 3025 Part 21:2009 (Reaff:2019)	249.19 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	47.8 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	31.6 mg/l
Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986 (Reaff:2019)	268 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	197.3 mg/l
Sulphate as SO ₄	IS 3025 Part 24:1986 (Reaff:2019)	70.4mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	0.26 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.46mg/l
Nitrate as NO ₃	IS 3025 Part 34:1988 (Reaff:2019)	7.5 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)

...Contd....2

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Lab No: 2374242 T.C No: CML/22-23/66725 Dated : 03.01.2023

Page No. 2 of 2

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff. 2019)	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
Sulphide as H ₂ S	IS 3025 Part 38:1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 29-1986 (Reaff. 2019)	BDL (DL:1.0 mg/l)
Discipline: Biological		Group: Water
Total Coliform	APHA 23 rd Edn. 2017:9221B	150 MPN/100ml
Escherichia coli	APHA 23 rd Edn. 2017:9221F	< 1.8 MPN/100ml

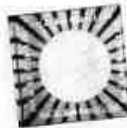
Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number, < 1.8 MPN/100ml can be taken as “No Microbial Growth”.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorized By

G.S. RADHA
Technical Manager
Authorised Signatory



Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory

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TEST REPORT

Page No.1 of 2

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
Kurunallipalayam Village,

Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374243

Sample Description : Ground Water (WW-3) – Mettuvavi.
(as stated by customer)

T.C Date : 03.01.2023

T.C No : CML/22-23/66726

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

TEST	PROTOCOL	RESULTS
Discipline: Chemical		Group: Water
Colour	IS 3025 Part 4:1983 (Reaff:2017)	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	7.11
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	935 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	1.4 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff:2017)	554 mg/l
Total Hardness as CaCO ₃	IS 3025 Part 21:2009 (Reaff:2019)	248.59 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	41.3 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	35.4 mg/l
Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986 (Reaff:2019)	220 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	169 mg/l
Sulphate as SO ₄	IS 3025 Part 24:1986 (Reaff:2019)	61.7 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	0.3 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.5 mg/l
Nitrate as NO ₃	IS 3025 Part 34:1988 (Reaff:2019)	5.8 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)

..Contd....2

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Lab No: 2374243 T.C No: CML/22-23/66726 Dated : 03.01.2023 Page No. 2 of 2

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2014 (Reaff.2019)	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff.2019)	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2014 (Reaff.2019)	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff. 2019)	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff.2019) (Annex K)	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 44:1993 (Reaff.2019)	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 53:2006 (Reaff.2017)	BDL (DL:0.01 mg/l)
Sulphide as H ₂ S	IS 3025 Part 38:1989 (Reaff.2019)	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 29-1986 (Reaff. 2019)	BDL (DL:1.0 mg/l)
Discipline: Biological		Group: Water
Total Coliform	APHA 23 rd Edn. 2017:9221B	140 MPN/100ml
Escherichia coli	APHA 23 rd Edn. 2017:9221F	< 1.8 MPN/100ml

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number, < 1.8 MPN/100ml can be taken as "No Microbial Growth".

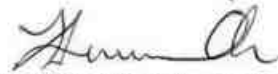
End of Report

For Chennai Mettex Lab Private Limited


 Reviewed & Authorized By

G.S. RADHA
 Technical Manager
 Authorised Signatory




 Reviewed & Authorized By

P. KAVITHA
 Technical Manager
 Authorised Signatory

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TEST REPORT

Page No.1 of 2

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
Kurunalpalayam Village,
Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374244

Sample Description : Ground Water (BW-1) – Core Zone.
(as stated by customer)

T.C Date : 03.01.2023

T.C No : CML/22-23/66727

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

TEST	PROTOCOL	RESULTS
Discipline: Chemical		Group: Water
Colour	IS 3025 Part 4:1983 (Reaff.2017)	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff.2017)	7.94
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff.2019)	873 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff.2017)	1.3 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff.2017)	515 mg/l
Total Hardness as CaCO ₃	IS 3025 Part 21:2009 (Reaff.2019)	205.08 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff.2019)	34.9 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff.2019)	28.7 mg/l
Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986 (Reaff.2019)	186 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff.2019)	157.6 mg/l
Sulphate as SO ₄	IS 3025 Part 24:1986 (Reaff.2019)	81.2 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff.2019)	0.5 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff.2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.35 mg/l
Nitrate as NO ₃	IS 3025 Part 34:1988 (Reaff.2019)	7.5 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.005 mg/l)

...Contd....2

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Lab No: 2374244 T.C No: CML/22-23/66727 Dated : 03.01.2023

Page No. 2 of 2

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff. 2019)	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 44: 1993 (Reaff:2019)	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	BDL (DL:0.01 mg/l)
Sulphide as H ₂ S	IS 3025 Part 38: 1989 (Reaff:2019)	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	BDL (DL:1.0 mg/l)
Discipline: Biological Group: Water		
Total Coliform	APHA 23 rd Edn. 2017:9221B	170 MPN/100ml
<i>Escherichia coli</i>	APHA 23 rd Edn. 2017:9221F	< 1.8 MPN/100ml

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number, < 1.8 MPN/100ml can be taken as "No Microbial Growth".

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorized By

G.S. RADHA
Technical Manager
Authorised Signatory



Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory

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TEST REPORT

Page No.1 of 2

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
Kurunallipalayam Village,

Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374245

T.C Date : 03.01.2023

T.C No : CML/22-23/66728

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

Sample Description : Ground Water (BW-2) – Jakkarpalayam.
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical		Group: Water
Colour	IS 3025 Part 4:1983 (Reaff.2017)	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff.2017)	7.94
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff.2019)	873 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff.2017)	1.3 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff.2017)	515 mg/l
Total Hardness as CaCO ₃	IS 3025 Part 21:2009 (Reaff.2019)	205.08 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff.2019)	34.9 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff.2019)	28.7 mg/l
Total Alkalinity as CaCO ₃	IS 3025 Part 23:1986 (Reaff.2019)	186 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff.2019)	157.6 mg/l
Sulphate as SO ₄	IS 3025 Part 24:1986 (Reaff.2019)	81.2 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff.2019)	0.5 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff.2019)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23 rd Edn. 2017:4500 F,D	0.35 mg/l
Nitrate as NO ₃	IS 3025 Part 34:1988 (Reaff.2019)	7.5 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.005 mg/l)

...Contd....2

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Lab No: 2374245 T.C No: CML/22-23/66728 Dated : 03.01.2023

Page No. 2 of 2

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2014 (Reaff.2019)	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff.2019)	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2014 (Reaff.2019)	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	BDL(DL : 0.01 mg/l)
Phenolic compounds as C ₆ H ₅ OH	IS 3025 Part 43-1992(Reaff. 2019)	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 13428 - 2005 (Reaff.2019) (Annex K)	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 44:1993 (Reaff.2019)	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff.2017)	BDL (DL:0.01 mg/l)
Sulphide as H ₂ S	IS 3025 Part 38:1989 (Reaff.2019)	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff.2019)	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 29-1986 (Reaff. 2019)	BDL (DL:1.0 mg/l)
Discipline: Biological		Group: Water
Total Coliform	APHA 23 rd Edn. 2017:9221B	160 MPN/100ml
<i>Escherichia coli</i>	APHA 23 rd Edn. 2017:9221F	< 1.8 MPN/100ml
Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number, < 1.8 MPN/100ml can be taken as “No Microbial Growth”.		

End of Report

For Chennai Mettex Lab Private Limited

G.S. Radha

Reviewed & Authorized By

G.S. RADHA
Technical Manager
Authorised Signatory



P. Kavitha

Reviewed & Authorized By

P. KAVITHA
Technical Manager
Authorised Signatory

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TEST REPORT

Page No.1 of 1

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
 Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
 Kurunallipalayam Village,

Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374246

Sample Description : Soil - 1 : Core Zone.
 (as stated by customer)

T.C Date : 03.01.2023

T.C No : CML/22-23/66729

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

S. No	Test Parameters	Protocols	Results	
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff.2016)	8.74	
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	410 µmhos/cm	
03	Texture :			
	Clay	Gravimetric Method	33.8 %	
	Sand		36.4 %	
	Silt		29.8 %	
04	Water Holding Capacity	By Gravimetric Method	44.7 %	
05	Bulk Density	By Cylindrical Method	1.08 g/cm ³	
06	Porosity	By Gravimetric Method	45.4 %	
07	Calcium as Ca	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	177 mg/kg	
08	Magnesium as Mg		80.7 mg/kg	
09	Manganese as Mn		25 mg/kg	
10	Zinc as Zn		1.1 mg/kg	
11	Boron as B		1.5 mg/kg	
12	Chloride as Cl		APHA 23 rd Edn 2019 4500 Cl B	127 mg/kg
13	Total Soluble Sulphate as SO ₄		IS 2720 Part 27 : 1977 (Reaff.2015)	0.016 %
14	Potassium as K	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	30.5 mg/kg	
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff. 2019)	1.9 mg/kg	
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff.2019)	260 mg/kg	
17	Cadmium as Cd	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)	
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)	
19	Copper as Cu		BDL (DL : 1.0 mg/kg)	
20	Lead as Pb		0.5 mg/kg	
21	Iron as Fe		2.09 mg/kg	
22	Organic Matter	IS : 2720 Part 22: 1972 (Reaff. 2015)	1.86 %	
23	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff. 2015)	1.08 %	
24	Cation Exchange Capacity	USEPA 9080 - 1986	36 meq/100g of soil	

End of Report

For Chennai Mettex Lab Private Limited



P. Kavitha
 Reviewed & Authorized By

P. KAVITHA
 Technical Manager
 Authorized Signatory

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TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
Kurunallipalayam Village,

Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374247

Sample Description : Soil - 2 : Kurunallipalayam.
(as stated by customer)

T.C Date : 03.01.2023

T.C No : CML/22-23/66730

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff.2016)	8.19
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	600 µmhos/cm
03	Texture :		
	Clay	Gravimetric Method	32.2 %
	Sand		35.5 %
	Silt		32.3 %
04	Water Holding Capacity	By Gravimetric Method	46 %
05	Bulk Density	By Cylindrical Method	1.22 g/cm ³
06	Porosity	By Gravimetric Method	43.01 %
07	Calcium as Ca	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	180 mg/kg
08	Magnesium as Mg		136 mg/kg
09	Manganese as Mn		27 mg/kg
10	Zinc as Zn		1.06 mg/kg
11	Boron as B		1.8 mg/kg
12	Chloride as Cl	APHA 23 rd Edn 2019 4500 Cl B	210 mg/kg
13	Total Soluble Sulphate as SO ₄	IS 2720 Part 27 : 1977 (Reaff.2015)	0.028 %
14	Potassium as K	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	40.9 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff. 2019)	3.7 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff.2019)	470 mg/kg
17	Cadmium as Cd	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.9 mg/kg
21	Iron as Fe		1.77 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972 (Reaff. 2015)	2.86 %
23	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff. 2015)	1.66 %
24	Cation Exchange Capacity	USEPA 9090 - 1986	41.9 meq/100g of soil

End of Report

For Chennai Mettex Lab Private Limited



Reviewed & Authorized By

P. KAVITHA

Technical Manager
Authorised Laboratory

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TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
Kurunallipalayam Village,

Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374248

Sample Description : Soil - 3 : Periyakalandai.
(as stated by customer)

T.C Date : 03.01.2023

T.C No : CML/22-23/66731

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff.2016)	8.50
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	550 µmhos/cm
03	Texture :		
	Clay	Gravimetric Method	36.9 %
	Sand		32.4 %
	Silt		30.7 %
04	Water Holding Capacity	By Gravimetric Method	47.8 %
05	Bulk Density	By Cylindrical Method	1.3 g/cm ³
06	Porosity	By Gravimetric Method	47.1 %
07	Calcium as Ca	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	266 mg/kg
08	Magnesium as Mg		80.6 mg/kg
09	Manganese as Mn		17.4 mg/kg
10	Zinc as Zn		2.4 mg/kg
11	Boron as B		1.6 mg/kg
12	Chloride as Cl	APHA 23 rd Edn 2019 4500 Cl B	179 mg/kg
13	Total Soluble Sulphate as SO ₄	IS 2720 Part 27 : 1977 (Reaff.2015)	0.017 %
14	Potassium as K	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	43 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff. 2019)	1.9 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff.2019)	261 mg/kg
17	Cadmium as Cd	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.35 mg/kg
21	Iron as Fe		2.35 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972 (Reaff. 2015)	3.39 %
23	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff. 2015)	1.97 %
24	Cation Exchange Capacity	USEPA 9080 - 1986	43 meq/100g of soil

----- End of Report -----

For Chennai Mettex Lab Private Limited



[Signature]
Reviewed & Authorized By

P. KAVITHA

Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
Kurunallipalayam Village,
Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374249

Sample Description : Soil - 4 : Mettuvavi.
(as stated by customer)

T.C Date : 03.01.2023

T.C No : CML/22-23/66732

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff.2016)	8.23
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	483 µmhos/cm
03	Texture :		
	Clay	Gravimetric Method	34.4 %
	Sand		36.7 %
	Silt		28.9 %
04	Water Holding Capacity	By Gravimetric Method	47.6 %
05	Bulk Density	By Cylindrical Method	1.22 g/cm ³
06	Porosity	By Gravimetric Method	40 %
07	Calcium as Ca	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	164.1 mg/kg
08	Magnesium as Mg		135.9 mg/kg
09	Manganese as Mn		21.1 mg/kg
10	Zinc as Zn		2.7 mg/kg
11	Boron as B		1.6 mg/kg
12	Chloride as Cl	APHA 23 rd Edn 2019 4500 Cl B	137 mg/kg
13	Total Soluble Sulphate as SO ₄	IS 2720 Part 27 : 1977 (Reaff.2015)	0.020 %
14	Potassium as K	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	36 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff. 2019)	1.6 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff.2019)	302 mg/kg
17	Cadmium as Cd	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.66 mg/kg
21	Iron as Fe		2.31 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972 (Reaff. 2015)	2.88 %
23	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff. 2015)	1.67 %
24	Cation Exchange Capacity	USEPA 9080 - 1986	35.7 meq/100g of soil

End of Report

For Chennai Mettex Lab Private Limited



P. Kavitha
Reviewed & Authorized By
P. KAVITHA

Technical Manager
Authorized Signatory

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(Approved/Recognized by APEDA, AGMARK, GAFTA, EIC, FSSAI, BIS & MoEF)

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
Kurunallipalayam Village,

Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374250

T.C Date : 03.01.2023

T.C No : CML/22-23/66733

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

Sample Description : Soil - 5 : Jakkarpalayam.
(as stated by customer)

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff.2016)	8.01
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	315 µmhos/cm
03	Texture :		
	Clay	Gravimetric Method	34.9 %
	Sand		37.3 %
	Silt		27.8 %
04	Water Holding Capacity	By Gravimetric Method	44.6 %
05	Bulk Density	By Cylindrical Method	1.01 g/cm ³
06	Porosity	By Gravimetric Method	45.9 %
07	Calcium as Ca	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	167 mg/kg
08	Magnesium as Mg		127.3 mg/kg
09	Manganese as Mn		20 mg/kg
10	Zinc as Zn		2.1 mg/kg
11	Boron as B		1.4 mg/kg
12	Chloride as Cl	APHA 23 rd Edn 2019 4500 Cl B	154 mg/kg
13	Total Soluble Sulphate as SO ₄	IS 2720 Part 27 : 1977 (Reaff.2015)	0.016 %
14	Potassium as K	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	38.2 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff. 2019)	1.8 mg/kg
16	Total Nitrogen as N	IS 14684 - 1999 (Reaff.2019)	298 mg/kg
17	Cadmium as Cd	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.3 mg/kg
21	Iron as Fe		2.8 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972 (Reaff. 2015)	3.05 %
23	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff. 2015)	1.77 %
24	Cation Exchange Capacity	USEPA 9080 - 1986	40.7 meq/100g of soil

----- End of Report -----

For Chennai Mettex Lab Private Limited



Handwritten Signature

Reviewed & Authorized By
P. KAVITHA

Technical Manager
Authorized Signatory

NOTE: Any unauthorized alteration, forgery or falsification of the content or appearance of this document renders the signatories liable for legal action. Unless otherwise stated the submitted results in this test report refer only to the sample(s) tested and such samples shall be retained for 15 days only from the completion date of testing, except in case of regulatory samples, which will be retained for a specific period as per statutory requirement; while perishable & environmental testing related remnant samples will be discarded consequent upon completion of testing. Samples are not drawn by us unless otherwise stated. This document cannot be reproduced except in full, without prior written approval of the laboratory. This report is for the exclusive use of Chennai Mettex Lab's customer, and is provided in accordance with the agreement between Chennai Mettex Lab and its Customer.



CHENNAI METTEX LAB PRIVATE LIMITED

Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032.

(Approved/Recognized by APEDA, AGMARK, GAFTA, EIC, FSSAI, BIS & MoEF)

TEST REPORT

ISSUED TO: Thiru. Abdul Jabbar Rough Stone & Gravel Quarry,
 Extent : 2.16.5 Ha

S.F.Nos. 44/9 (P), 45 (P), 46/1 & 47/3 (P),
 Kurunallipalayam Village,

Kinathukadavu Taluk, Coimbatore District

Cust. Ref : SRF Dated : 22.12.2022.

Lab No : 2374251

Sample Description : Soil - 6 : Kothavadi.
 (as stated by customer)

T.C Date : 03.01.2023

T.C No : CML/22-23/66734

Date Of Receipt : 23.12.2022

Analysis Commenced On: 23.12.2022

Analysis Completed On : 03.01.2023

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff.2016)	8.93
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	578 µmhos/cm
03	Texture :		
	Clay	Gravimetric Method	36.7 %
	Sand		35.3 %
	Silt		28.0 %
04	Water Holding Capacity	By Gravimetric Method	43.2 %
05	Bulk Density	By Cylindrical Method	1.2 g/cm ³
06	Porosity	By Gravimetric Method	41.8 %
07	Calcium as Ca	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	176.5 mg/kg
08	Magnesium as Mg		122 mg/kg
09	Manganese as Mn		19.7 mg/kg
10	Zinc as Zn		1.17 mg/kg
11	Boron as B		2 mg/kg
12	Chloride as Cl	APHA 23 rd Edn 2019 4500 Cl B	141 mg/kg
13	Total Soluble Sulphate as SO ₄	IS 2720 Part 27 : 1977 (Reaff.2015)	0.29 %
14	Potassium as K	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	35.2 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff. 2019)	1.6 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999 (Reaff.2019)	356 mg/kg
17	Cadmium as Cd	USEPA 3050 B - 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		0.6 mg/kg
21	Iron as Fe		2.43 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972 (Reaff. 2015)	1.81 %
23	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff. 2015)	1.05 %
24	Cation Exchange Capacity	USEPA 9080 - 1986	35.2 meq/100g of soil

End of Report

For Chennai Mettex Lab Private Limited



P. Kavitha
 Reviewed & Authorized By

P. KAVITHA

Technical Manager
 Authorised Signatory

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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

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