Category: B1 (Cluster)

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR CLUSTER OF QUARRIES MINOR MINERAL – GREY GRANITE QUARRY

(As per EIA Notification, 2006 dated 14.09.2006 and amendments)

PROJECT PROPONENTS

S.No	Name and Address	Mining lease area - Extent
1	**Tvl. EVERKING GRANITES** The Managing Partner: S.S.Jameeluddin No:1/161, T.N.H.B Phase-II, Krishnagiri, TamilNadu-635002. E.mail: jameel.rkf@gmail.com. Mob: +919994433007, +919443632513	3.19.5 Ha
2	**Thiru.E.JAGADEESAN** S/o. Egananthan, No.5/50,Thiruvalluvar Nagar, Krishnagiri District, Tamil Nadu - 635001. E.mail: jameel.jk@gmail.com. Mob: +9994433007.	1.56.5 Ha

AREA DETAILS

JAGADEVIPALAYAM GREY GRANITE QUARRY

Cluster Area : 13.14.5 Ha
Village : Jagadevipalayam
Taluk : Bargur
District : Krishnagiri

TERMS OF REFERENCE ISSUED BY SEAC/SEIAA

i) Lr.No.SEIAA-TN/F.No.9549/SEAC/TOR-1513/2023 dated 01.08.2023 for PP 1

ii) Lr.No.SEIAA-TN/F.No.9550/TOR-1514/2022 dated 01.08.2023 for PP 2

EIA CONSULTANT

AADHI BOOMI MINING & ENVIRO TECH (P) LTD
(QCI/NABET Accredited EIA Organization)

3/216, K.S.V.Nagar, Narasothipatti, Alagapuram (PO),
Salem – 636004.
Website: www.abmenvirotec.com
Email: abmenvirotech@gmail.com suriyakumarsemban@gmail.com
Mob: 98427 29655.

2023

From **Date:**

1. **Tvl. Everking Granites**
   No:1/161,T.N.H.B Phase-II,
   Krishnagiri, Tamil Nadu-635002
   E.mail: jameel.rkf@gmail.com.
   Mob: +919994433007, +919443632513

2. **Thiru E. Jagadeesan,**
   S/o.Egananthan,
   No.5/50, Thiruvalluvar Nagar,
   Krishnagiri District, Tamil Nadu
   E.mail: jameel.jk@gmail.com.
   Mob: +9994433007

To

The District Environmental Engineer
Tamil Nadu Pollution Control Board,
Plot No 140A,
SIPCOT Industrial Complex,
Hosur – 635126,
Krishnagiri.

Sub: Submission of **Draft Environmental Impact Assessment (EIA) Report** as per EIA Notification, 2006 dated 14.09.2006 and amendments for our two Existing Grey Granite Quarry located within cluster area over an extent of 13.14.5 Hectares in Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu –reg.

Ref:

1. MoEF&CCOM:F.No.L-11011/175/2018-IA-II(M) , dated 12.12.2018
2. Lr.No.SEIAA-TN/F.No.9549/SEAC/TOR-1513/2023 dated 01.08.2023 for PP 1
3. Lr.No.SEIAA-TN/F.No.9550/TOR-1514/2022 dated 01.08.2023 for PP 2
4. MOEF&CC SO 141 (E) dated 15.01.2016-Appendix XI

Dear Sir,

With reference to the above mentioned subject, we herewith submit the hard copy of **Draft Environmental Impact Assessment Report** as per the Terms of Reference mentioned in Ref No 2-3 for your kind perusal. The site details of our existing quarries are given below.

1. **Tvl. Everking Granites, Grey Granites Quarry**
   3.19.5 Hectares (Patta Land)
   S.F.No: 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C and 348/6D1
   Jagadevipalayam Village,
   Bargur Taluk, Krishnagiri District and Tamil Nadu

2. **Thiru.E.Jagadeesan, Grey Granites Quarry**
   1.56.5 Hectares (Patta Land)
   S.F. No. 353/2A1B, 2A7, 2B, 2C1 & 2E1A
   Jagadevipalayam Village,
   Bargur Taluk, Krishnagiri District and Tamil Nadu

As our lease area comes within the cluster area of 13.14.5 Ha, we request you to conduct one Public consultation for our two existing Grey Granite Quarry as per MOEF&CC SO 141 (E) dated 15.01.2016-Appendix XI.

Thanking You

Yours faithfully,

Mr. S.S. Jamaludeen -
(Managing Partner)

Thiru.E.Jagadeesan -

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Undertaking by Project Proponents

I'm **S.S. Jamaludeen**, Managing Partner of **Tvl. Everking Granites,** having administrative office at No:1/161,T.N.H.B Phase-II, Krishnagiri, Tamil Nadu, hereby give this undertaking to the effect that the conditions laid down in Terms of Reference vide Lr.No.SEIAA-TN/F.No.9549/SEAC/TOR-1513/2023 dated 01.08.2023 for our Grey Granite quarry over an extent of 3.19.5 Ha located in S.F. Nos 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C and 348/6D1, Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu, have been compiled with, and the data submitted and the information presented in this report are true to the best of my knowledge.

Signature and seal of the Project Proponent

Place : Salem
Date :

I'm **Thiru.E.Jagadeesan,** S/o. Egananthan, residing at No.5/50, Thiruvalluvar Nagar, Krishnagiri District, Tamil Nadu, hereby give this undertaking to the effect that the conditions laid down in Terms of Reference vide Lr.No.SEIAA-TN/F.No.9550/SEAC/TOR-1514/2022 dated 01.08.2023 for our Grey Granite Gravel quarry over an extent of 1.56.5 Ha located in S.F. Nos 353/2A1B, 2A7, 2B, 2C1 & 2E1A, Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu, have been compiled with, and the data submitted and the information presented in this report are true to the best of my knowledge.

Signature and seal of the Project Proponent

Place : Salem
Date :

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

I, Mr.Suriyakumar, Managing Director of Aadhi Boomi Mining & Enviro Tech (P) Ltd, hereby confirm that the Draft EIA Report has been prepared as per the conditions laid down in Terms of Reference vide i) Lr.No.SEIAA-TN/F.No.9549/SEAC/TOR-1513/2023 dated 01.08.2023, ii) Lr.No.SEIAA-TN/F.No.9550/SEAC/TOR-1514/2022 dated 01.08.2023 for conducting Public Hearing and obtaining Environment Clearance from SEIAA/SEAC, Tamil Nadu for existing Grey Granite Quarries of **Tvl. Everking Granites and Thiru.E.Jagadeesan** located in Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu.

I, hereby confirm that the mentioned experts in NABET Annexure VII prepared the Draft EIA report of **Tvl. Everking Granites and Thiru.E.Jagadeesan.** I also confirm that I, the EIA Coordinator (EC) have gone through the report, and shall be fully accountable for any mis-leading information mentioned in this statement. It is certified that no unethical practices, plagiarism involved in carrying out the work and external data/text has not been used without proper acknowledgement while preparing this EIA report.

Name: **Mr.S.Suriyakumar**

Signature :

Designation : **Managing Director/ EIA Co-Ordinator**

Name of the EIA Consultant Organization: Aadhi Boomi Mining & Enviro Tech Private Limited. NABET Certificate No: NABET/EIA/2124/RA 0228, Valid till 22.10.2024

DECLARATION OF EXPERTS - NABET ANNEXURE – VII

S.No	Name of the Expert	Category	Functional Areas	Signature
1.	Mr.S.Suriyakumar	A	EIA Co-ordinator	
		A	Solid and Hazardous Waste SHW*-HW* only	
		A	Risk Assessment and Hazard Management (RH)	
		A	Land Use (LU)	
		A	Soil Conservation (SC)	
2.	Mrs. S. Santhi	B	Land Use (LU)	
		B	Socio Economics (SE)	
3.	Dr. Nithia Priya P.M	B	Air Pollution, Monitoring, Prevention and Control (AP)	
		B	Water Pollution Monitoring, Prevention and Control (WP)	
4.	Mr. M. Venkatesh Prabhu	B	Meteorology, Air Quality Modelling & Prediction (AQ)	
		B	Noise and Vibration (NV)	
5.	Mr. K. Manuraj	B	Geology (GEO)	
			Hydrogeology (HG)	
6.	V.Sudha	B	Ecology and Biodiversity	
Team Member Involved in Report Preparation				
6.	Mrs. S. Sri Vidhya	Team Member	Water Pollution Monitoring, Prevention and Control (WP) under FAE - Dr. Nithia Priya P.M	
			Meteorology, Air Quality Modelling & Prediction (AQ) under FAE - Mr. M. Venkatesh Prabhu	

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LIST OF ABBREVIATIONS AND ACRONYMS

EIA	Environmental Impact Assessment
EMP	Environment Management Plan
MOEF & CC	Ministry of Environment Forest and Climate Change
TOR	Terms of Reference
EC	Environment Clearance
SEAC	State Expert Appraisal Committee
SEIAA	State Environmental Impact Assessment Authority
TNPCB	Tamil Nadu Pollution Control Board
CPCB	Central Pollution Control Board
DGM	Department of Geology& Mining
NOC	No Objection Certificate
NH	National Highway
SH	State Highway
KM	Kilo Meter
HA	Hectare
DGPS	Differential Global Positioning System
AAQ	Ambient Air Quality
AQI	Air Quality Index
GLC	Ground Level Concentration
SPM	Suspended Particulate Matter
DB	Decibel
LEQ	Equivalent Noise Level
SEIS	Seismograph
KLD	Kilo Litre Per -Day
HSE	Health Safety And Environment
PH	Public Hearing
R & R	Rehabilitation & Resettlement
CSR	Corporate Social Responsibility
EMC	Environmental Management Cell
GOVT	Government of Tamilnadu
WQI	Water Quality Index

Proponent 1 – Tvl. Everking Granites (3.19.5 Ha)
Compliance of Standard ToR

S. No	ToR	Compliance
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.	The lease was granted for Tvl Everking Granites (3.19.5 Ha) vide G.O. (3D).NO. 20 Industries (MME.2) Dept. dated 22.03.2018 for the period of 20 years. Refer Annexure II in Page No 273. The lease deed was executed on 28.05.2018 and will expire on 27.05.2038. Refer Annexure III in Page No 279. The details of production since inception of mining activity are mentioned in Chapter 1. Refer Teble No 1.2 in Page No. 3
2.	A copy of the document in support of the fact that the proponent is the rightful lease of the mine should be given.	The lease was granted by the Government of Tamil Nadu in favor of Tvl Everking Granites (3.19.5 Ha) vide G.O. (3D).NO. 20 Industries (MME.2) Dept. dated 22.03.2018 for the period of 20 years. The lease deed was executed on 28.05.2018 and will expire on 27.05.2038. Refer Annexure III in Page No 279.
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.	Contents in all documents are synchronizing with one another in terms of mine lease area, production levels, waste generation, its management and quarrying technology. The Mining plan for grey granite quarry of Tvl. Everking Granites was approved by the Commissioner of Geology and Mining, Chennai vide letter No. 992/MM5/2017, dated 22.01.2018. The 1st scheme of mining has been prepared for the lease area 3.19.5 Ha for the period from 2023-2024 to 2027-2028 and it has been approved by Commissioner, Department of Geology and Mining, Guindy, Chennai vide letter Rc.No.5253/MM4/2022 dated 14.10.2022
4.	All corner coordinates of the mine	

	lease area, superimposed on a High Resolution Imagery/ Toposheet; topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	The area is bounded by northern latitude of N12°28'39.72981"to N12°28'50.35514" and eastern longitude from E78°21'06.95056" to E78°21'15.36719". Toposheet No. 57L/7. Details are given in Page No. 7 and 8 of Chapter 1. Geomorphology & Geology of the area is given in Fig No 2.11. Refer Pg.No.32 of Chapter 2. Land Use details given in Table 3.25 pg. no.138 and also refer Fig No.3.25 pg.no.137. Land use within the lease area is mentioned in Table No 2.9 in Chapter 2. Refer Page No 38.
5.	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	Survey of India Toposheet No. 57L/7 in 1:50,000 scale indicating physical features of geological map of the area, geomorphology of land forms of the area, existing minerals and quarrying history of the area, important water bodies, streams and rivers and soil characteristics is given in Fig 1.1, 1.2, 2.11, 3.25, 3.27, 3.29 and Refer Page 9, 10, 32, 137, 141, 143 respectively.
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 details of land proposed for mining activities are given in Table No 2.9 of Chapter 2. Refer Page No: 38.
7.	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	The proponent Tvl Everking Granites is very much conscious of complying with the Environmental Regulations with systematic mining. The proponent will comply with the EC conditions and Consent to Operate issued by the TNPCB with stipulated time.

	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.	Quarry Safety pertaining to the failure of pit slope in open cast quarrying is described in Table 7.1, Page No.195. Safety for blasting is given under Table 10.1: in Page 210. General safeguard measures are given in clause 4.9, Page no 146 – 188.
9.	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine/ lease period.	The Study area of the existing mining project comprises of 10km zone around the mining Lease boundary has been prepared. Refer Fig No. 1.2 & Pg. No. 10 Data like reserves, waste generation up to life of mine have been incorporated in Chapter 2 (Pg. No. 38-57) of the EIA report.
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	Land use of the study area, parks, migratory routes of fauna, water bodies, human settlements, other existing mines/ industrial activity and other ecological features are shown in delineating forest area, agricultural land, grazing land, wildlife sanctuary and national parks. Refer Clause 3.11 in Page no. 133 in Chapter 2.

	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 plan of the mine lease area is given in Page No. 38, Table No.2.9.
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.	Details of the dump design area given in Pg. No. 52-54. The mining operation will not disturb/relocate any villages and hence R & R plan not required. (Refer Chapter 7, Clause 7.3, and Page No. 198).
12.	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	Not applicable. The mining area does not involve any forest land (Refer Table 2.3 Pg No.22, 23)
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	Not applicable. The mining area does not involve any forest land (Refer Table 2.3 Pg No.22, 23)

	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.	Not Applicable
15.	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	The details of reserve forest located within study area of 10km radius are given in chapter 2. Refer Table No 2.3 in Page No 19, 20. The details of flora within the study area are given detail in Chapte3. Refer Clause 3.9.7 in Page No 106.
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.	Eco biodiversity (EB) study has been done for the project which details the impact on surrounding wildlife and mitigation measures are discussed and given in Chapter-4, Clause 4.10, Pg. No. 176-182.
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	There is no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors and Tiger/Elephant Reserves within the 10 km radius of the mining lease area. Refer Page No. (Refer Table 2.3 Pg No.23).

	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.	Details of Flora and Fauna found in the study area are given in Chapter 3 (Pg. No 106-116) in the EIA Report. No scheduled list of fauna is found in this study area.
19.	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	The project site is neither falling under 'Aravalli range' nor it is located in proximity to area declared as Critically Polluted Area.

20.	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	Not Applicable. Bay of Bengal is located 172km away from the lease area towards the SE side (Refer Page No. 22, Table 2.3). Hence the project does not attract the C.R.Z. Notification.
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.	The existing Grey Granite Quarry project does not involve any kind of displacement of the population since the mining will be concentrated only in the quarry area. Hence, Rehabilitation of settlement is not anticipated under this project as it is not required (Refer Chapter 7, Clause 7.3, and Page No. 198). The Socio-Economic study detailed in included in Clause 3.9 of Chapter 3, Page No 117-133.
22.	One season (non-monsoon) [i.e.	Summer season monitoring data for a period

	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.	of three months (March 1st 2023– May 31st 2023) on Air quality, Water quality, Noise level, Soil, Flora and Fauna in the core and buffer zones is collected and complied data wise in the EIA report (Chapter 3, Page No. 62-145).
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	Air quality modeling carried out for prediction of impact of the project on the air quality of the area, which is included in Chapter 4, Clause 4.1, Pg. No 146 -158. Wind Rose Pattern is shown in Fig. 3.1, Pg. No: 65 of Chapter 3.

	roses showing pre-dominant wind direction may also be indicated on the map.	
24.	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	The water requirement for the Project is 3.0 KLD; the details are given in Chapter – 2, Pg No.58. A detailed water balance is shown in Fig 4.4 of Chapter 4 (Page no.169)
25.	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	The grey granite quarry project requires water for drinking, dust suppression and plantation. Drinking water is obtained from Mineral water industries. For Dust suppression, Green belt and other uses water will be obtained from ordinary water vendors through water tank. There is no extraction of ground water within lease area for the quarry activity. So no clearance from the Competent Authority is required.
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.	At the end of the project the quarried out pit will be used as Water storage pond. It will increase the agricultural activity in the surrounding villages. The rainwater harvesting and rate of evaporation is given in Chapter 7. (Refer Clause 7.4 of Chapter 7, page no.198).
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.	The impacts of the project on the water quality are assessed and necessary safe guard measures will be provided. (Refer Clause 4.6 Chapter 4, Page No. 168-174).
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	The mining operation will not intersect the ground water table. Schematic representation is shown in Page No: 171, Refer Fig.4.6. The depth of mining is 30m whereas the depth of water table is 40m bgl (for the scheme period). So No NOC is required from CGWA for the proposed project.

	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.	However detailed Hydro geological study has been carried out and incorporated in Chapter 3 of Clause 3.7, Pg. No: 90 and Chapter 4, of Clause 4.6.5, Pg. No: 174.
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.	There is no stream crossing inside the mining lease area and hence there is no need of modification/diversion (Refer Fig No.4.5 in Page No.170).
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.	Elevation of the quarry area is 451m above MSL. The mining operation will be at a maximum depth of 30m (Ultimate). The ground water table is at 40m from the surface in the adjacent tube well, and mine workings are above groundwater table (Refer Fig No 4.6 in Page No.171).
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	Phase-wise plan of plantation and Compensatory Afforestation and the plant species selected for green belt. The proposed afforestation plan is given in Table 4.30 of Chapter 4. Refer Page No.183.

	species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.	
32.	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.	The transportation of minerals will be carried out through the existing roadways during day work hours only with no increase in the existing traffic pattern (Refer Chapter 2, Fig No: 2.7, Page No.25).
33.	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Details of the onsite shelter and facilities to be provided to the mine workers are discussed in Chapter 2 Clause 2.13. Refer Pg.No.59.
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.	Conceptual mining plan is given in Chapter 2. Refer Fig 2.18 in Page No.55.
35.	Occupational Health impacts of the Project should be anticipated and	Occupational Health impacts of the Project are detailed in EIA report (Refer Clause 4.13 of

	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.	Chapter 4, Page no. 186).
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.	All control measure for public health implications, air emission, noise control, and waste management will be duly considered as per norms and the remedial measures are detailed along with budgetary allocation in Chapter 10, Pg. No: 209-217.
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.	Details of community welfare activities to be done for the local community along with proposed budget have been incorporated in EIA Report (Refer Chapter 8, Pg. No: 203-207)
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.	Environmental Management Plan (EMP) for the proposed quarry project has been prepared and incorporated in Chapter 10. (Pg. No. 209-217).
39.	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with	This draft EIA report has been prepared for conducting public hearing.

	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.	No litigation pending against the 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 – 84 Lakh EMP cost- 7.25 Lakhs Refer Chapter 2, Clause 2.14, Page No.60)
42.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	A detailed Risk and Disaster Management Plan has been prepared and detailed in Chapter 7. (Pg. No: 194-196).
43.	Benefits of the Project if implemented shall clearly indicate environmental, social, economic, employment potential, etc.	Project Benefits have been detailed in Chapter 8. (Refer Chapter 8, Pg. No: 203-207).

General Points to be followed as per ToR

S.No .44	ToR	Compliance
a)	Executive Summary of the EIA/EMP Report	Executive Summary is furnished separately and given in Chapter 11.
b)	All documents to be properly referenced with index and continuous page numbering.	Yes, all 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.	Yes. The data Collection period and sources are mentioned in table in EIA report.
d)	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL	The Baseline Monitoring Report with all analytical reports done by a MoEF&CC/NABL accredited laboratory

	accredited laboratories. All the original analysis/testing reports should be available during appraisal of the project.	is enclosed with the EIA Report.
e)	Where the documents provided are in a language other than English, an English translation should be provided.	The documents are provided in English
f)	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Yes, environmental appraisal of mining projects also submitted along with the EIA report.
g)	While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry, should also be followed.	Yes, we followed the instructions for the proponents and consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009 while preparing EIA report.
h)	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.	No changes have been made in Draft EIA report. The details given in Tor application and in this report are same
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 by the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.	The Certified EC compliance for the earlier EC issued by DEIAA, Krishnagiri is under process. It will be submitted to SEIAA/SEAC before EC appraisal meeting.

j)	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	All details of lease area and surface plan, geological maps and sections are included in Chapter 2 & Drainage, contour features are given in Chapter 3 in Fig 2.1, 2.3, 2.12, 2.13, 2.16, 2.18, 2.27 and Refer Page No 17, 19, 40, 41, 49, 55, 141 respectively.

Compliance of Additional TOR given by SEAC

S.No.	CONDITIONS	COMPLIANCE
1	The proponent shall give an affidavit before the issuance of ToR from SEIAA-TN stating that the mining operations will remain suspended till they obtain the EC granted by the SEIAA after the reappraisal process as per MoEF & CC OM F.No. I A3- 22/11/2023-IA.III (E-208230), dated. 28.04.2023	The proponent has submitted affidavit to SEIAA/SEAC stating that mining operations will remain suspended until the EC issued by SEIAA as per MoEF & CC OM F.No. I A3- 22/11/2023-IA.III (E-208230), dated. 28.04.2023.
2	The Project Proponent shall submit a Certified Compliance Report as per the MoEF&CC O.M dated 08.06.2022 for the previous EC obtained from DEIAA.	The Certified EC compliance for the earlier EC issued by DEIAA, Krishnagiri is under process. It will be submitted to SEIAA/SEAC before EC appraisal meeting.
3	The Proponent shall furnish a letter obtained from AD/DD of Geology & Mining Department stating the following details: (i) Original pit dimension (ii) Quantity achieved Vs EC approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated (iv) Mined out Depth as on date Vs EC permitted depth (v) Details of Mineral Rejects – Quantity & place of location (vi) Any violations observed in the quarry during the past working (vii) Quantity of material mined out outside the mine lease area, if any (viii) Condition of safety zone/benches as on date.	It is under process. Once the PP obtained letter from AD/DD Geology & Mining Department, Krishnagiri District regarding points mentioned in Serial No 3. It will be submitted to SEA/SEIAA.

ANNEXURE - I		
1.	In case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following. (i) Original pit dimension (ii) Quantity achieved Vs EC approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated (iv) Mined out Depth as on date Vs EC permitted depth (v) Details of Mineral Rejects – Quantity & place of location (vi) Violation in the quarry during the past working (vii) Quantity of material mined out outside the mine lease area (viii) Condition of safety zone/benches (ix) Revised/Modified Mining plan showing the benches of not exceeding 6m height and ultimate depth of not exceeding 50m	It is under process. Once the PP obtained letter from AD/DD Geology & Mining Department, Krishnagiri District regarding points mentioned in Serial No 3. It will be submitted to SEA/SEIAA.
2.	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	The latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site has been attached in Draft EIA report. Refer Annexure XII and XIII in Page No 338 and 339.
3.	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50m, (ii) 100m, (iii) 200m and (iv) 300m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	The details of nearest habitation are given in Table No 2.3 in Chapter 2. Refer Page no 22. The impacts on nearest habitation due to blasting activity on nearest habitation are given in Chapter 4. Refer Clause 4.5 in Page No 166.

4.	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the water bodies like lake, water tanks, etc are located within 1 km of the proposed quarry.	The hydro geology study has been conducted within the study area of project site. Refer Page No 90- 95 in Chapter 3. The details of water bodies in the study area are given chapter 2. Refer Table no 2.3 in Page no 23.
5.	The Proponent shall carry out Bio-diversity study through reputed Institution and the same shall be included in EIA report.	The baseline study on Ecology and Biodiversity are given detail in Chapter 3. Refer Clause 3.9.5 in Page No 105. The impact on Ecology and Biodiversity are given in Chapter 4. Refer Clause 4.10 in Page No 176.
6.	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	It is under process. It will be submitted during appraisal of EC application.
7.	In the case of proposed lease in an existing (or old) quarry where the benches are nonexistent (or) partially formed critical of the bench geometry approved in the Mining plan, the Project Proponent (PP) shall prepare and submit an 'Action plan' for carrying out the realignment of the 'high wall' benches of 16 m to ensure slope stability in the proposed quarry lease which shall be vetted by the concerned Asst. Director of Geology and Mining, during the time of appraisal for obtaining the EC.	It is an existing grey granite quarry with an existing depth of 12m bgl. As there is no high wall bench of 16m, action plan for realignment of the 'high wall' is not required.
8.	The Proponent shall submit a conceptual 'Slope Stability plan' for the proposed quarry indicating the proposed stabilizing measures during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	The ultimate depth of the proposed projects is 30m bgl. So the 'Slope Stability plan' for the proposed project is not required.
9.	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory	Agreed. The affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent

	competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.	person as per the MMR 1961 will be attached in Final EIA report
10.	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30m from the blast site.	As it is granite quarry, only mild blasting will be carried out to remove blocks from the parent rock by forming crack. So there will be no fly rocks in this project.
11.	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the state with video and photographic evidences.	The video taken by drone covering cluster of quarries is attached in CD. Refer Pouch of EIA report.
12.	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines.	No. The lease deed for this existing gray granite quarry has been executed on 28.05.2018. Refer Annexure III in Page No 279.
13.	What were the period or the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	The mining activity was stopped before 28.04.2023. The period of earlier mining is 2018-2023.
14.	Quantity of minerals mined out. • Highest production achieved in any one year. • Detail of approved depth of mining. • Actual depth of the mining achieved earlier. • Name of the person already mined in that leases area. • If EC and CTO already obtained, the copy of the same shall be submitted. • Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	Highest production – 686.797m^3(2019-20) Approved depth – 30m bgl Actual depth – 12m bgl Tvl. Everking Granites (No proponent name changed) Earlier EC copy is attached as Annexure X in Page No 325 Yes Mining activity has been carried out as per approved mining plan and EC
15.	All corner coordinates of the mine lease area, superimposed on a High Resolution	The Toposheet showing location of the

	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).	lease area is attached in Chapter 1. Refer 1.2 in Page No.10. The geology and geomorphology of the 10km radius of proposed area is given in Chapter 2. Refer Fig No 2.11 inPage No 32. The land use/land cover image is given Chapter 3. Refer Page No 137.
16.	The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.	The Drone survey has been carried out. The video is attached in CD. Refer Pouch of EIA report.
17.	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including re plantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	The fencing and green belt development along the periphery is under process. The photographs will be attached in Final EIA Report.
18.	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, and proposed working methodology with justifications, the anticipated impacts of the mining on the surrounding environment and the remedial measures for the same.	The details of reserves, production capacity and methodology are given in Chapter – 2. Refer Page No 28-57 & the impacts on surrounding environment due to mining activity are given in Chapter 4. Refer Page No 146-175.
19.	The Project Proponent shall provide the organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	The employment potential of proposed project is given in Chapter 2. Refer Page No 58.
20.	The project proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the	The hydro geology study has been conducted within the study area of project site. Refer Page No 90-95 in

	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 be clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	Chapter 3. The details of water bodies in the study area are given chapter 2. Refer page no 23. The depth of water table identified by Geo resistivity survey is 40m bgl whereas the proposed depth of mining is 30m bgl. Therefore the mining activity will not intersect ground water table. The schematic diagram is given in chapter 4. Refer Page No 171.
21.	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water & ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.	The baseline data for the environmental and ecological parameters were collected. Refer Chapter 3.
22.	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly' the Environment management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	The anticipated cumulative impact on various environments such as air, water, soil and noise etc due to proposed mining activity are given in Chapter 4 with appropriate mitigation measures. The environmental management plan is given in Chapter 10.
23.	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) is submitted.	The studies on rain water harvesting are given in Chapter 7. Refer Page No 198.
24.	Land, use of the study area delineating forest area, Agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to	The land use/land covers of 10km radius of proposed mining lease area are given in Chapter 3. Refer Fig No 3.25 in Page No 137.

	encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	
25.	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	Not applicable. All waste and rejects shall be dumped within the lease area of 3.19.5 Ha of Tvl.Everking Granites
26.	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	No. There is no boundary of critically polluted area found within 10km radius proposed mining lease area.
27.	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the project, if any, should be provided.	At the end of mining, the quarried out pit will be used for storing rain water which will enhance agricultural activity around the lease area. The rain harvesting plan is given detail in Chapter 7. Refer Page No 198.
28.	Impact on local transport infrastructure due to the project should be indicated.	No. The existing roads are available to withstand the traffic generated due to proposed project. Refer Fig No.2.7 in Page No 25 of Chapter 2.
29.	A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	Only mango plantations are mostly found around the lease area. The age of mango trees in the buffer zone are 8-10 years.
30.	A detailed mine closure plan for the proposed project which should be site specific.	The mine closure plan for the proposed project is included in the EIA report. Refer Fig No 2.18 in Chapter 2. (Page No 55)
31.	As a part of the study of flora and fauna around the vicinity of the proposed site, the	Agreed. The EIA coordinator will educate the local students on the importance of preserving local flora and fauna during

	EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	public hearing meeting.
32.	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the **appendix-I** in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	Agreed. In consultation with the DFO, State Agriculture University, the green belt will be made around the boundary of lease area to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated
33.	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/ Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	Agreed. Taller/one year old Saplings will be planted as per the advice of local forest authorities/botanist/ Horticulturist with regard to site specific choices.
34.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period..	The Disaster management Plan has been prepared and included in the EIA report. Refer Clause 7.2 in Page No 194 of Chapter 7.
35.	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Risk Assessment and management Plan has been prepared and included in the EIA report. Refer Clause 7.2 in Page No 194 of Chapter 7.
36.	Occupational Health impacts of the Project should be anticipated and the proposed	An occupational Health impact of the Project has been anticipated and the

	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.	appropriate mitigation measures are given in Chapter 4 of EIA report. Refer Clause 4.13 in Page No.186.
37.	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Yes it is given in EIA report. Refer Clause 4.13.3 in Page No.186 of EIA report
38.	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	The study on Socio-economic for the proposed project is mentioned in Clause 3.10 of Chapter 3. Refer Page No 117 of EIA report.
39	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	Nil
40	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	The benefits of the proposed project are given detail in Chapter 8. Refer Page No 203-207.
41	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be	The Certified EC compliance for the earlier EC issued by DEIAA, Krishnagiri is under process. It will be submitted to SEIAA/SEAC before EC appraisal meeting.

	certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	
42	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	The EMP for the proposed project is mentioned in Chapter 10 along with EMP cost. The affidavit stating to abide the EMP for the entire life of mine will be attached in final EIA report.
43	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	Agreed.

Compliance of conditions mentioned in TOR letter by SEIAA

Compliance of Annexure 'B'

S.No.	CONDITIONS	COMPLIANCE
Cluster Management Committee		
1	Cluster Management Committee shall be framed which must include all the proponents in the cluster as member including the existing as well as proposed quarry.	Agreed. The Cluster Management Committee will be formed as per SEAC guidance.
2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	Agreed. After forming CMC, the all the members will implement environment management plan effectively. Effective plan has been given in Chapter – 4
3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	Agreed. The List of members of the committee formed will be submitted to AD/Mines before the commencing the quarry activity.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the	Certified Blaster will be engaged for blasting having adequate knowledge in Environmental safety aspects. Plan will be included in Final EIA report. The usage of haul roads by the

	individual quarry in the form of route map and network.	individual quarry is attached in EIA report. Refer Fig No 2.18 in page No 55 of Chapter 2.
5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	Risk Management is elaborated in Chapter 7 of the Draft EIA report
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.	Agreed. The CMC will form Environmental Policy to practice sustainable mining in a scientific and systematic manner. The same shall be displayed within the cluster area.
7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	The conceptual plan for the quarry area 3.19.5 Ha is attached in draft EIA report. Refer Fig No 2.18 in page No 54 of Chapter 2. After forming CMC, the restoration strategy of individual quarry will be submitted to AD Mines, Krishnagiri.
8	The committee shall furnish the Emergency Management plan within the cluster.	Agreed. After forming CMC, the committee will furnish the Emergency Management plan to AD Mines, Krishnagiri
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Occupational safety and Health care of the workers are included in Chapter – 4 in draft EIA report
10	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	Agreed. After forming CMC, he committee will furnish the action plan to achieve sustainable development goals with reference to water, sanitation & safety to AD Mines, Krishnagiri.
11	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	Agreed. After forming CMC, he committee will furnish fire safety and evacuation plan to AD Mines, Krishnagiri.

Impact study of mining		
12	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following a) Soil health & bio-diversity. b) Climate change leading to Droughts, Floods etc. c) Pollution leading to release of Greenhouse gases (CHG), rise in Temperature, & Livelihood of the local people. d) Possibilities of water contamination and impact on aquatic ecosystem health. e) Agriculture, Forestry & Traditional practices. f) Hydrothermal/Geothermal effect due to destruction in the Environment. g) Bio-geochemical processes and its foot prints including environmental stress. h) Sediment geochemistry in the surface streams.	Impact on Soil Health, biodiversity, carbon emission and impact on water environment including aquatic ecosystem and on agricultural environment are discussed in detail in Chapter 4.
Agriculture & Agri - Biodiversity		
13	Impact on surrounding agricultural fields around the proposed mining area.	The impact on surrounding agricultural fields is given in chapter 4. Refer Clause 4.14 in page No.187
14	Impact on soil flora & vegetation around the project site.	The impact on ecology and biodiversity including soil flora & vegetation around the project site is mentioned in Chapter 4. Refer Page No.176-182
15	Details of type of vegetations including no of trees & shrubs within the proposed mining area and if so,	This is existing grey granite quarry, so there are only few numbers of mango trees and coconut found within the

	transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in the EMP.	quarry area. It will not be disturbed during quarrying activity.
16	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural ecosystem.	The impact on ecology and biodiversity including the soil micro flora, fauna and soil seed banks around the project site is mentioned in Chapter 4. Refer Page No.176-182
17	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	At the end of mining, the quarried out pit will be used as water storage pond which improves the agricultural activity in the buffer zone. Refer Page No 55 in Chapter 2. The afforestation plan for five years is given in Chapter 4. Refer Table No 4.30 in Page No.183.
18	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, horticulture, Agriculture and livestock.	Anticipated impact on Agriculture, Horticulture and livestock is given Chapter 4. Refer Clause 4.14.2 in Page No 188.
Forests		
19	The project proponent shall detailed study on impact of mining on reserve forests free ranging wildlife.	There are five reserve forest located within 10km radius and the nearest forest is Thogarapalli R.F located at the distance of 1.7km in south direction. There are no wildlife sanctuaries within 10km radius. Refer Table 2.3 in Page No 22, 23 of Chapter 2. The impact on reserve forest and wild life sanctuary is given in Chapter 4. Refer Clause 4.10 in page No 176.
20	The Environmental Impact Assessment should study on impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	There is no endangered species found within 10km radius study area.
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	As it is existing grey granite quarry, no trees and shrubs are present in the quarry area.

22	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	There are no protected areas, National Parks, Corridors and Wildlife pathways within 10km radius of the project site. There are 5 reserve forest located within 10km radius. The impact on reserve forest is given in Chapter 4. Refer Clause 4.10 in page No 176.
Water Environment		
23	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. Within 1km (radius) so as to assess the impacts on the nearby water bodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.	The hydro geology study has been conducted within the study area of project site. Refer Page No 90-97 in Chapter 3. The details of water bodies in the study area are given chapter 2. Refer page no 23. The depth of water table identified by Geo resistivity survey is 40m bgl whereas the proposed depth of mining is 30m bgl. Therefore the mining activity will not intersect ground water table. The schematic diagram is given in chapter 4. Refer Page No 171.
24	Erosion Control measures.	To control the erosion, the tree sapling will be planted along the mining lease boundary. Garland drainage will be developed around the dump to control the washout of dump due to hydrostatic pressure.
25	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby villages, water-bodies/Rivers, & any ecological fragile areas.	The impact of mining on the nearby villages and water bodies are given detail in chapter 4.
26	The Project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	The detailed study of impact on fish habitation and food WEB/ food chain in the water body and reservoir is given in Chapter 4. Refer Table 4.29, Page No 180.
27	The Project Proponent shall study and	The detailed impact studies are given

	furnish the details on potential fragmentation impact on natural environment, by the activities.	in Chapter 4.
28	The Project Proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological site possible land form changes visual and aesthetic impacts.	The study and the impact on aquatic plants and animals in water bodies are mentioned in Chapter 4. Refer Clause 4.10 in Page No 176. There are no caves, heritage site, and archaeological site found within 10km radius of project site.
29	The terms of reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The impact study on soil health and erosion is given in Clause 4.7 in Chapter 4. Refer Page no 175. The soil physical, chemical components and microbial components are given in Chapter 3. Refer Page No.101, 102.
30	The Environmental Impact Assessment should study on wet lands, water bodies, rivers, streams, lakes and farmer sites.	The impact study on surface water bodies and agricultural land is given in Chapter 4. Refer Page No 169, 170 and 187- 88.
Energy		
31	The measures taken to control Noise, Air, Dust control and steps adopted to efficiently utilise the energy shall be furnished.	The mitigation measure for air pollution and noise pollution is given in chapter 4. Refer Page No 146 and 160.
Climate change		
32	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	The carbon emission due to proposed mining activity and its mitigation measures are given in Chapter 4. Refer Clause 4.2 in Page No 158.
33	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	The carbon emission due to proposed mining activity and its mitigation measures are given in Chapter4. Refer Clause 4.2 in Page No 158.
Mine closure plan		
34	Detailed Mine Closure Plan covering the entire mine lease period as per	Detailed Mine Closure Plan covering the entire mine lease period as per

	precise area communication order issued.	precise area communication order issued is given in Chapter 2, pg.No. 53-55
EMP		
35	Detailed Environmental Management Plan along with adaption, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Detailed environmental management plan is given in Chapter 10, pg. No. 209.
36	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	The environmental management plan is given chapter 10. The cost for green belt development is mentioned in Table 10.2 in Chapter 10. Refer Page No 216. Budget for mine closure plan is given in Table 10.3 in Page No 216 of Chapter 10. The disaster management plan is given in Chapter 7. Refer page no 194
Risk Assessment		
37	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of mining.	Disaster management plan is given in Chapter 7, pg. No. 194
Disaster Management Plan		
38	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Details are furnished in Table 7.1 in chapter 7, pg.No. 195
Others		
39	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations,	The letter regarding approved habitations, schools, Archaeological sites, Structures, railway lines, roads,

	schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake, pond, tank etc.	water bodies such as streams, odai, vaari, canal, channel, river, lake, pond, tank within 300m radius has been obtained from VAO. Refer Annexure XII in Page No 338
40	As per the MoEF&CC office memorandum F.No22-65/2017-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.	Draft EIA is been prepared for conducting public hearing. The points raised in PH and funds allocated will be included in Final EIA report.
41	The project proponent shall study and furnish the possible pollution due to plastic and micro plastic on the environment. The ecological risks and impacts of plastic & micro plastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	The study on pollution due to plastic and micro plastic and its ecological risk is mentioned in Chapter 7. Refer Clause 7.5 in Page no 201.

ANNEXURE 1

Additional Information for Considering EC for Mining Projects

S. No.	Details to be provided	Page No.
1]	Name of the project lease & owner	1
2]	Lease Extent	1
3]	Lease Validity	1
4]	Approved Mining Plan/Scheme – Review a] Specify whether DSR is provided [applicable in case of minor minerals only]	DSR is given in TOR application
5]	Specify – Nature and type of violation	NA
	I. Without EC or in excess of quantity approved in EC	
	II. Without CTO or in excess of quantity approved in CTO	
	III. Without mining plan/Scheme of mining or in excess of quantity approved in Mining Plan/Scheme of mining	
	IV. Without Forest Clearance	
	V. Any other violation	
6]	Violation period	NA
	I. Number of months	
	II. Number of Years	
7]	Exploitation/Excavation quantity – Reserves proved through exploration by drilling	Pg No.38-57
8]	Give details of production from the date of execution of the lease deed / since 1994	Pg No.3
9]	Quantity mined out during the violation period & if, yes indicate the violated quantity, in term of % of consented quantity.	NA
10]	State illegal mining / encroachments outside the lease boundary? Percentage of quantity mined out outside the lease boundary.	Not applicable
11]	Method of working	[a]
	I. Category type ;[a] Mechanised [b] Semi-Mechanised [c] Manual	
	II. Construction and design of haul roads	
	[a] Dimension as per the statutory requirements which were followed or otherwise	34
	[b] Number of vehicles plying on the main haul roads inside the mine and the approach road to the pit located outside the mine, if any.	

<table>
<tr><td></td><td>[c] Are any measures taken to minimize fugitive dust generated form mine haul roads /Does it comply with the CPCB/PCB Guidelines/</td><td>146</td></tr>
<tr><td></td><td>[d] Is there a possibility that air pollutants emitted from the project area that do not comply with air quality standards as per CPCB/PCB/</td><td>No</td></tr>
<tr><td>12]</td><td>Mechanized /Semi- Mechanized Method of Mining</td><td></td></tr>
<tr><td></td><td>[i] Number of loading/excavating equipments as per approved mining plan and capacity.</td><td>34</td></tr>
<tr><td></td><td>[ii] Number of loading/excavating equipments actually being deployed and capacity.</td><td></td></tr>
<tr><td></td><td>[iii] Type and number of transporting equipments.</td><td></td></tr>
<tr><td></td><td>[iv] Type of transporting system used –[a] trucks
[b] Any other mode</td><td></td></tr>
<tr><td></td><td>[v] Capacity and No. Trucks used as per approved mining plan</td><td></td></tr>
<tr><td></td><td>[vi] Capacity and No. Trucks used actually in the mine</td><td></td></tr>
<tr><td></td><td>[vii] Number and Capacity of loading equipments and trucks used not in line with approved mining plan
<table>
<tr><td></td><td>Capacity [m^3]</td><td>Numbers</td></tr>
<tr><td>Excavator</td><td>-</td><td>-</td></tr>
<tr><td>Tipper</td><td>-</td><td>-</td></tr>
</table></td><td></td></tr>
<tr><td></td><td>[viii] Impact of excess deployment of loading equipments [excavators] and transporting equipments on environment.
[a] Air pollutants
[b] Water Quality
[c] Land Quality
[d] Noise level</td><td>No excess equipment.</td></tr>
<tr><td></td><td>[ix] Does the deployment of loading equipments[excavators] and trucks fulfill the statutory requirements as per MMR 1961, with respect to the site conditions/</td><td>Yes</td></tr>
<tr><td>13]</td><td>Method of Rock Breaking / Material preparation for the excavation;</td><td>33-37</td></tr>
<tr><td></td><td>[i] Methodology adopted-</td><td></td></tr>
<tr><td></td><td>[a] Drilling and blasting</td><td></td></tr>
<tr><td></td><td>[b] Rock breakers</td><td></td></tr>
<tr><td></td><td>[c] Rippers</td><td></td></tr>
<tr><td></td><td>[d] Surface miners</td><td></td></tr>
<tr><td></td><td>[e] Direct mucking by excavators</td><td></td></tr>
<tr><td></td><td>[f] Manual means</td><td></td></tr>
<tr><td></td><td>[g] Any other methods or combination of above</td><td></td></tr>
</table>

	[ii] Incase of drilling and blasting method	146-188
	[a] Type of blasting ; short hole or deep hole	
	[b] Whether controlled blasting technique adopted / If yes, specify the technique with details of the study , year of study	
	[c] Impacts due to blasting defined as per the studies, if any carried out previously as indicated	
	[d] Dust pollution	
	[e] Noise level[dB[A]]	
	[f] Ground vibration studies and Fly rock projection	
	[iii] Impact of preparation of Ore and waste on environment-	
	[a] Air Pollution	
	[b] Noise Pollution	
	[c] Water Pollution	
	[d] Safety standards	
	[e] Traffic density	
	[f] Road Conditions[vulnerability]	
14]	Construction and Design of Dumps.	52-55
	[a] Place / Location.	
	[b] Approach to Dump form the mine distance and safety standards.	
	[c] Area of extent occupied.	
	[d]Dimension of Dump and No. of terrace with heights [benches].	
	[e] Vegetation covered; If yes, specify the details of plants.	
15]	Construction and Design of Waste Dumps.	52-55
	[i] Numbers and Location of Dumps as per approved Mining Plan.	
	[ii] Specify whether reject dumps are located within or outside mining lease.	
	[iii] Area occupied in excess of the approval mining plan.	
	[iv] Dimension of Terracing, Light, shapes, etc., Dump as per approved Mining Plan.	
	[v] Fresh/Existing Dimension Height, shape, width. etc., of Dumps in the mine.	
	[vi] Volume/Quantity added to Waste / Dump during the violated period.	
	[vii] Approach to the Dump-Dimension, distance.	
	[viii] Number of and type of equipments deployed in Dump.	
	[ix] Provision of Garland drains around the Dumps.	
	[x] Any vegetation made on the slopes.	
	[xi] Provision of safety standards.	

	[xii] Impact of Waste/Dumps on environment.	146-188
	[a] Air Pollution	
	[b] Water Pollution	
	[c] Dust Pollution	
	[d] Noise Pollution	
	[xiii] Terracing	
16]	Construction and Design of Ore and sub grade ore / mineral Stacks;-	NA
	[i] Number and Location of Ore stacks.	
	[ii] Dimension of Ore / sub grade Stacks as per the Approved Mining Plan	
	[iii] Volume / Quantity added during the violation period.	
	[iv] Any Screening plant or any other loading equipment engaged during the violated period.	
	[v] Approach to Ore / sub grade stack – Distance, hazards.	
	[vi] Safety standards adopted while operation.	
	[vii] Impact of ore / sub grade on environment.	
	[a] Air Pollution.	
	[b] Water Pollution.	NA
	[c] Dust Pollution.	
	[d] Noise Pollution.	
17]	Mine Pit Water	168-174
	[i] Intersection of Ground water table, specify the measures taken.	
	[ii] Ground water table as per hydro geological Studies [Pumping test].	
	[iii] Provision of Garland drains around pit and dumps.	
	[iv] Water pollution.	
	[v] Management of mine water.	
	[vi] Ultimate pit limit, w.r.t. Ground water intersection and management of drainage of ground water.	
18]	Diversion of General Drainage / River / Nallah course for mining.	No
19]	Clearing of vegetation before the commencement of mining operation – Number of trees [species wise].	No
20]	Man Power.	58
	[a] Statutory management.	
	[b] Regular [Non-statutory] Manpower.	
21]	Occupational Health and Safety.	186-187
	[a] Periodical monitoring of health standards of persons employed as per Mine Act, 1952.	

	[b] Failure to inform statutory bodies periodically, if any.	
22]	Population [Nearby Habitation].	118, 198
	[i] Population/Significant Population / Dense Population within the buffer zone of 10 km.	
	[ii] People displacement due to mining activities.	
	[iii] Location / Existence of habitation near the river or any other historical / sensitive / forest distance.	146-188
	[iv] Impact of mining on Surrounding and habitation- Air, Water, Noise, Pollution.	117-132
	[v] Socio Economic aspects of mining.	
23]	CSR.	205
	[a] Field ground Activities or studies. Actual amount spent towards CSR and the future proposal.	
24]	NOC from DMG for quantity clarification in respect of settlement of all the amount payable against identified violation.	NA
25]	For the Clearance of EC, Public Hearing is mandated as per MoEF & CC Notification. Give reason for exemption of Public Hearing.	The PH will be conducted
26]	Conceptual post mining land use / restoration.	53-55
27]	Litigation / court cases, if any pending.	NA
28]	Disaster management plan for the mine.	194-196

Proponent 2 – Thiru E. Jagadeesan (1.56.5 Ha)
Compliance of Standard ToR

S. No	ToR	Compliance
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.	The lease was granted for Thiru E. Jagadeesan (1.56.5 Ha) vide G.O. (3D).NO. 42 Industries (MME.2) Dept. dated 20.09.2018 for the period of 20 years. Refer Annexure II in Page No 368. The lease deed was executed on 09.11.2018 and will expire on 08.11.2038. Refer Annexure III in Page No 374. The details of production since inception of mining activity are mentioned in Chapter 1. Refer Table No 1.2 in Page No. 3
2.	A copy of the document in support of the fact that the proponent is the rightful lease of the mine should be given.	The lease was granted by the Government of Tamil Nadu in favor of Thiru E. Jagadeesan (1.56.5 Ha) vide G.O. (3D).NO. 42 Industries (MME.2) Dept. dated 20.09.2018 for the period of 20 years. The lease deed was executed on 09.11.2018 and will expire on 08.11.2038. Refer Annexure III in Page No 374.
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.	Contents in all documents are synchronizing with one another in terms of mine lease area, production levels, waste generation, its management and quarrying technology. The Mining plan for grey granite quarry of Thiru.E.Jagadeesan was approved by the Commissioner of Geology and Mining, Chennai vide letter No. No. 993/MM5/2017, dated 13.02.2018. The 1st scheme of mining has been prepared for the lease area 1.56.5 Ha for the period from 2023-2024 to 2027-2028 and it has been approved by Commissioner, Department of Geology and Mining, Guindy, Chennai vide letter Rc.No.5254/MM4/2022 dated 14.10.2022

4.	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ Toposheet; topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	The area is bounded by northern latitude of 12°28'34.91765"N to 12°28'40.90210"N and eastern longitude from 78°21'11.18021"E to 78°21'17.84397"E. Toposheet No. 57L/7. Details are given in Page No. 7 and 8 of Chapter 1. Geomorphology & Geology of the area is given in Fig No 2.11. Refer Pg.No.32 of Chapter 2. Land Use details given in Table 3.25 pg. no.138 and also refer Fig No.3.25 pg.no.137. Land use within the lease area is mentioned in Table No 2.9 in Chapter 2. Refer Page No 38.
5.	Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.	Survey of India Toposheet No. 57L/7 in 1:50,000 scale indicating physical features of geological map of the area, geomorphology of land forms of the area, existing minerals and quarrying history of the area, important water bodies, streams and rivers and soil characteristics is given in Fig 1.1, 1.2, 2.11, 3.25, 3.27, 3.29 and Refer Page 9, 10, 32, 137, 141, 143 respectively.
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 details of land proposed for mining activities are given in Table No 2.9 of Chapter 2. Refer Page No: 38.
7.	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	The proponent Thiru.E.Jagadeesan is very much conscious of complying with the Environmental Regulations with systematic mining. The proponent will comply with the EC conditions and Consent to Operate issued by the TNPCB with stipulated time.

	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.	Quarry Safety pertaining to the failure of pit slope in open cast quarrying is described in Table 7.1, Page No.195. Safety for blasting is given under Table 10.1: in Page 210. General safeguard measures are given in clause 4.9, Page no 146 – 188.
9.	The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine/ lease period.	The Study area of the existing mining project comprises of 10km zone around the mining Lease boundary has been prepared. Refer Fig No. 1.2 & Pg. No. 10
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	Land use of the study area, parks, migratory routes of fauna, water bodies, human settlements, other existing mines/ industrial activity and other ecological features are shown in delineating forest area, agricultural land, grazing land, wildlife sanctuary and national parks. Refer Clause 3.11 in Page no. 133 in Chapter 2. Land use plan of the mine lease area is given in

	to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Page No. 38, Table No.2.9.
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.	Details of the dump design area given in Pg. No. 52-57. The mining operation will not disturb/relocate any villages and hence R & R plan not required. (Refer Chapter 7, Clause 7.3, and Page No. 198).
12.	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.	Not applicable. The mining area does not involve any forest land (Refer Table 2.3 Pg No.22, 23)
13.	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	Not applicable. The mining area does not involve any forest land (Refer Table 2.3 Pg No.22, 23)
14.	Implementation status of	Not Applicable

	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.	The details of reserve forest located within study area of 10km radius are given in chapter 2. Refer Table No 2.3 in Page No 19, 20. The details of flora within the study area are given detail in Chapte3. Refer Clause 3.9.7 in Page No 106.
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.	Eco biodiversity (EB) study has been done for the project which details the impact on surrounding wildlife and mitigation measures are discussed and given in Chapter-4, Clause 4.10, Pg. No. 176-182.
17.	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	There is no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors and Tiger/Elephant Reserves within the 10 km radius of the mining lease area. Refer Page No. (Refer Table 2.3 Pg No.23).

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.	Details of Flora and Fauna found in the study area are given in Chapter 3 (Pg. No 106-116) in the EIA Report. No scheduled list of fauna is found in this study area.
19.	Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.	The project site is neither falling under 'Aravalli range' nor it is located in proximity to area declared as Critically Polluted Area.
20.	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies	Not Applicable. Bay of Bengal is located 172km away from the lease area towards the SE side (Refer Page No. 22, Table 2.3). Hence

	demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).	the project does not attract the C.R.Z. Notification.
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.	The existing Grey Granite Quarry project does not involve any kind of displacement of the population since the mining will be concentrated only in the quarry area. Hence, Rehabilitation of settlement is not anticipated under this project as it is not required (Refer Chapter 7, Clause 7.3, and Page No. 198). The Socio-Economic study detailed in included in Clause 3.9 of Chapter 3, Page No 117-133.
22.	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline	Summer season monitoring data for a period of three months (March 1st 2023– May 31st 2023) on Air quality, Water quality, Noise level, Soil, Flora and Fauna in the core and buffer zones is collected and complied data wise in

	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.	the EIA report (Chapter 3, Page No. 62-145).
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 modeling carried out for prediction of impact of the project on the air quality of the area, which is included in Chapter 4, Clause 4.1, Pg. No 146 -158. Wind Rose Pattern is shown in Fig. 3.1, Pg. No: 65 of Chapter 3.
24.	The water requirement for the Project, its availability and source	The water requirement for the Project is 3.0 KLD; the details are given in Chapter – 2, Pg

	should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	No.59. A detailed water balance is shown in Fig 4.4 of Chapter 4 (Page no.169)
25.	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	The grey granite quarry project requires water for drinking, dust suppression and plantation. Drinking water is obtained from Mineral water industries. For Dust suppression, Green belt and other uses water will be obtained from ordinary water vendors through water tank. There is no extraction of ground water within lease area for the quarry activity. So no clearance from the Competent Authority is required.
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.	At the end of the project the quarried out pit will be used as Water storage pond. It will increase the agricultural activity in the surrounding villages. The rainwater harvesting and rate of evaporation is given in Chapter 7. (Refer Clause 7.4.2 of Chapter 7, page no.200).
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.	The impacts of the project on the water quality are assessed and necessary safe guard measures will be provided. (Refer Clause 4.6 Chapter 4, Page No. 168-174).
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	The mining operation will not intersect the ground water table. Schematic representation is shown in Page No: 171, Refer Fig.4.7. The depth of mining is 36m whereas the depth of water table is 40m bgl (for the scheme period). So No NOC is required from CGWA for the proposed project. However detailed Hydro geological study has been carried out and incorporated in Chapter 3 of Clause 3.7, Pg. No: 90 and Chapter 4, of Clause 4.6.5, Pg. No: 174.

	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.	There is no stream crossing inside the mining lease area and hence there is no need of modification/diversion (Refer Fig No.4.5 in Page No.170).
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.	Elevation of the quarry area is 453m above MSL. The mining operation will be at a maximum depth of 36m (Ultimate). The ground water table is at 40m from the surface in the adjacent tube well, and mine workings are above groundwater table (Refer Fig No 4.7 in Page No.171).
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	Phase-wise plan of plantation and Compensatory Afforestation and the plant species selected for green belt. The proposed afforestation plan is given in Table 4.31 of Chapter 4. Refer Page No.183.

	value to the local population with emphasis on local and native species and the species which are tolerant to pollution.	
32.	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.	The transportation of minerals will be carried out through the existing roadways during day work hours only with no increase in the existing traffic pattern (Refer Chapter 2, Fig No: 2.7, Page No.25).
33.	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Details of the onsite shelter and facilities to be provided to the mine workers are discussed in Chapter 2 Clause 2.13. Refer Pg.No.59.
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.	Conceptual mining plan is given in Chapter 2. Refer Fig 2.19 in Page No.57.
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	Occupational Health impacts of the Project are detailed in EIA report (Refer Clause 4.13 of Chapter 4, Page no. 186).

	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.	All control measure for public health implications, air emission, noise control, and waste management will be duly considered as per norms and the remedial measures are detailed along with budgetary allocation in Chapter 10, Pg. No: 209-217.
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.	Details of community welfare activities to be done for the local community along with proposed budget have been incorporated in EIA Report (Refer Chapter 8, Pg. No: 203-207)
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.	Environmental Management Plan (EMP) for the proposed quarry project has been prepared and incorporated in Chapter 10. (Pg. No. 209-217).
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.	This draft EIA report has been prepared for conducting public hearing.
40.	Details of litigation pending against	No litigation pending against the project.

	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.	Project Cost – 78 Lakhs EMP cost- 9.50 Lakhs Refer Chapter 2, Clause 2.14, Page No.60, 61
42.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	A detailed Risk and Disaster Management Plan has been prepared and detailed in Chapter 7. (Pg. No: 194-196).
43.	Benefits of the Project if implemented shall clearly indicate environmental, social, economic, employment potential, etc.	Project Benefits have been detailed in Chapter 8. (Refer Chapter 8, Pg. No: 203-207).

General Points to be followed as per ToR

S.No .44	ToR	Compliance
a)	Executive Summary of the EIA/EMP Report	Executive Summary is furnished separately and given in Chapter 11.
b)	All documents to be properly referenced with index and continuous page numbering.	Yes, all 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.	Yes. The data Collection period and sources are mentioned in table in EIA report.
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.	The Baseline Monitoring Report with all analytical reports done by a MoEF&CC/NABL accredited laboratory is enclosed with the EIA Report.
e)	Where the documents provided are in a language other than English, an English translation should be provided.	The documents are provided in English

f)	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Yes, environmental appraisal of mining projects also submitted along with the EIA report.
g)	While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry, should also be followed.	Yes, we followed the instructions for the proponents and consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009 while preparing EIA report.
h)	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.	No changes have been made in Draft EIA report. The details given in Tor application and in this report are same
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 by the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.	All details of lease area and surface plan, geological maps and sections are included in Chapter 2 & Drainage, contour features are given in Chapter 3 in Fig 2.2, 2.4, 2.14, 2.15, 2.17, 2.19, 3.27 and Refer Page No 18, 20, 45, 46, 51, 57, 141 respectively.
j)	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.	All details of lease area and surface plan, geological maps and sections are included in Chapter 2 & Drainage, contour features are given in Chapter 3 in Fig 2.2, 2.4, 2.15, 2.16, 2.17, 2.19, 2.21 and Refer Page No 15, 17, 40, 41, 42, 48, 54 respectively.

Compliance of Additional TOR given by SEAC

S.No.	CONDITIONS	COMPLIANCE
1	The proponent shall give an affidavit before the issuance of ToR from SEIAA-TN stating that the mining operations will remain suspended till they obtain the EC granted by the SEIAA after the reappraisal process as per MoEF & CC OM F.No. I A3- 22/11/2023-IA.III (E-208230), dated. 28.04.2023	The proponent has submitted affidavit to SEIAA/SEAC stating that mining operations will remain suspended until the EC issued by SEIAA as per MoEF & CC OM F.No. I A3- 22/11/2023-IA.III (E-208230), dated. 28.04.2023.
2	For the existing quarry, the Proponent shall obtain a letter from the concerned AD (Mines) which include the following information: I. Original pit dimension of the existing quarry II. Quantity achieved Vs EC approved Quantity III. Balance Quantity as per Mineable Reserve calculated IV. Mined out Depth as on date Vs EC permitted depth V. Details of illegal/illicit mining carried out if any VI. Non-compliance/Violation in the quarry during the past working. VII. Quantity of material mined out outside the mine lease area (or) in the adjacent quarry/land. VIII. Existing condition of safety zone/benches IX. Details of any penalties levied on the PP for any violation in the quarry operation.	It is under process. Once the PP obtained letter from AD/DD Geology & Mining Department, Krishnagiri District regarding points mentioned in Serial No 2, it will be submitted to SEA/SEIAA.
3.	The Project Proponent shall furnish Certified Compliance Report (CCR) obtained from IRO (SZ), MoEF&CC and with mitigation measures for the non-compliance stated therein.	The Certified EC compliance for the earlier EC issued by DEIAA, Krishnagiri is under process. It will be submitted to SEIAA/SEAC before EC appraisal meeting.
4.	The structures within the radius of (i) 50m (ii) 100m, (iii) 200m and (iv) 300m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of	The details of nearest habitation are given in Table No 2.3 in Chapter 2. Refer Page no 22. The impacts on nearest habitation due to blasting activity on nearest habitation are given in Chapter 4. Refer

	worship, industries, factories, sheds, etc	Clause 4.5 in Page No 166.
5.	The proponent shall furnish a revised EMP budget for entire life of proposed mining.	Agreed.
ANNEXURE - I		
1.	In case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following. I. Original pit dimension II. Quantity achieved Vs EC approved Quantity III. Balance Quantity as per Mineable Reserve calculated IV. Mined out Depth as on date Vs EC permitted depth V. Details of illegal/illicit mining VI. Violation in the quarry during the past working VII. Quantity of material mined out outside the mine lease area VIII. Condition of safety zone/benches	It is under process. Once the PP obtained letter from AD/DD Geology & Mining Department, Krishnagiri District regarding points mentioned in Serial No 1, it will be submitted to SEA/SEIAA.
2.	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	The latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site has been attached in Draft EIA report. Refer Annexure XI and XII in Page No 433 and 434.
3.	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50m, (ii) 100m, (iii) 200m and (iv) 300m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	The details of nearest habitation are given in Table No 2.3 in Chapter 2. Refer Page no 22. The impacts on nearest habitation due to blasting activity on nearest habitation are given in Chapter 4. Refer Clause 4.5 in Page No 166.
4.	The PP shall submit a detailed hydrological	The hydro geology study has been

	report indicating the impact of proposed quarrying operations on the water bodies like lake, water tanks, etc are located within 1 km of the proposed quarry.	conducted within the study area of project site. Refer Page No 90- 95 in Chapter 3. The details of water bodies in the study area are given chapter 2. Refer Table no 2.3 in Page no 23.
5.	The Proponent shall carry out Bio-diversity study through reputed Institution and the same shall be included in EIA report.	The baseline study on Ecology and Biodiversity are given detail in Chapter 3. Refer Clause 3.9.5 in Page No 105. The impact on Ecology and Biodiversity are given in Chapter 4. Refer Clause 4.10 in Page No 176.
6.	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	It is under process. It will be submitted during appraisal of EC application.
7.	In the case of proposed lease in an existing (or old) quarry where the benches are nonexistent (or) partially formed critical of the bench geometry approved in the Mining plan, the Project Proponent (PP) shall prepare and submit an 'Action plan' for carrying out the realignment of the 'high wall' benches of 16 m to ensure slope stability in the proposed quarry lease which shall be vetted by the concerned Asst. Director of Geology and Mining, during the time of appraisal for obtaining the EC.	It is an existing grey granite quarry with an existing depth of 11m bgl. As there is no high wall bench of 16m, action plan for realignment of the 'high wall' is not required.
8.	The Proponent shall submit a conceptual 'Slope Stability plan' for the proposed quarry indicating the proposed stabilizing measures during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	Agreed, the 'Slope Stability plan' will be prepared for the existing quarry indicating the stabilizing measures as the depth of mining proposed is 36m bgl. It will be submitted during appraisal of EC applicaton.
9.	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman,	Agreed. The affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 will be attached in Final EIA report

	II/I Class mines manager appointed by the proponent.	
10.	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30m from the blast site.	As it is granite quarry, only mild blasting will be carried out to remove blocks from the parent rock by forming crack. So there will be no fly rocks in this project.
11.	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the state with video and photographic evidences.	The video taken by drone covering cluster of quarries is attached in CD. Refer Pouch of EIA report.
12.	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines.	No. The lease deed for this existing grey granite quarry has been executed on 09.11.2018. Refer Annexure III in Page No 374.
13.	What were the period or the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	The mining activity was stopped before 28.04.2023. The period of earlier mining is 2018-2023.
14.	Quantity of minerals mined out. • Highest production achieved in any one year. • Detail of approved depth of mining. • Actual depth of the mining achieved earlier. • Name of the person already mined in that leases area. • If EC and CTO already obtained, the copy of the same shall be submitted. • Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	Highest production – 1246.402m^3(2019-20) Actual depth – 11m bgl Thiru.E.Jagadeesan (No proponent name changed) Earlier EC copy is attached as Annexure IX in Page No 417 Yes Mining activity has been carried out as per approved mining plan and EC
15.	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of	The Toposheet showing location of the lease area is attached in Chapter 1. Refer 1.2 in Page No.10. The geology and geomorphology of the

	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).	10km radius of proposed area is given in Chapter 2. Refer Fig No 2.11 inPage No 32. The land use/land cover image is given Chapter 3. Refer Page No 137.
16.	The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.	The Drone survey has been carried out. The video is attached in CD. Refer Pouch of EIA report.
17.	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including re plantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	The fencing and green belt development along the periphery is under process. The photographs will be attached in Final EIA Report.
18.	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, and proposed working methodology with justifications, the anticipated impacts of the mining on the surrounding environment and the remedial measures for the same.	The details of reserves, production capacity and methodology are given in Chapter – 2. Refer Page No 28-57 & the impacts on surrounding environment due to mining activity are given in Chapter 4. Refer Page No 146-175.
19.	The Project Proponent shall provide the organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	The employment potential of proposed project is given in Chapter 2. Refer Page No 58.
20.	The project proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD/TWAD so as to	The hydro geology study has been conducted within the study area of project site. Refer Page No 90-95 in Chapter 3. The details of water bodies in the study area are given chapter 2. Refer page no 23. The depth of water table identified by Geo resistivity survey is 40m bgl whereas

	assess the impacts on the wells due to mining activity. Based on actual monitored data, it may be clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	the proposed depth of mining is 36m bgl. Therefore the mining activity will not intersect ground water table. The schematic diagram is given in chapter 4. Refer Page No 171.
21.	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water & ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.	The baseline data for the environmental and ecological parameters were collected. Refer Chapter 3.
22.	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly' the Environment management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	The anticipated cumulative impact on various environments such as air, water, soil and noise etc due to proposed mining activity are given in Chapter 4 with appropriate mitigation measures. The environmental management plan is given in Chapter 10.
23.	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) is submitted.	The studies on rain water harvesting are given in Chapter 7. Refer Page No 198.
24.	Land, use of the study area delineating forest area, Agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	The land use/land covers of 10km radius of proposed mining lease area are given in Chapter 3. Refer Fig No 3.25 in Page No 137.
25.	Details of the land for storage of	Not applicable. All waste and rejects shall

	Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	be dumped within the lease area of 11.59.0 Ha of Thiru.E.Jagadeesan.
26.	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	No. There is no boundary of critically polluted area found within 10km radius proposed mining lease area.
27.	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the project, if any, should be provided.	At the end of mining, the quarried out pit will be used for storing rain water which will enhance agricultural activity around the lease area. The rain harvesting plan is given detail in Chapter 7. Refer Page No 198.
28.	Impact on local transport infrastructure due to the project should be indicated.	No. The existing roads are available to withstand the traffic generated due to proposed project. Refer Fig No.2.7 in Page No 25 of Chapter 2.
29.	A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	Only mango plantations are mostly found around the lease area. The age of mango trees in the buffer zone are 8-10 years.
30.	A detailed mine closure plan for the proposed project which should be site specific.	The mine closure plan for the proposed project is included in the EIA report. Refer Fig No 2.19 in Chapter 2. (Page No 57)
31.	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	Agreed. The EIA coordinator will educate the local students on the importance of preserving local flora and fauna during public hearing meeting.
32.	The purpose of Green belt around the	Agreed. In consultation with the DFO,

	project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the **appendix-I** in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	State Agriculture University, the green belt will be made around the boundary of lease area to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated
33.	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/ Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	Agreed. Taller/one year old Saplings will be planted as per the advice of local forest authorities/botanist/ Horticulturist with regard to site specific choices.
34.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period..	The Disaster management Plan has been prepared and included in the EIA report. Refer Clause 7.2 in Page No 194 of Chapter 7.
35.	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Risk Assessment and management Plan has been prepared and included in the EIA report. Refer Clause 7.2 in Page No 194 of Chapter 7.
36.	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific	An occupational Health impact of the Project has been anticipated and the appropriate mitigation measures are given in Chapter 4 of EIA report. Refer Clause 4.13 in Page No.186.

	occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	
37.	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Yes it is given in EIA report. Refer Clause 4.13.3 in Page No.186 of EIA report
38.	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	The study on Socio-economic for the proposed project is mentioned in Clause 3.10 of Chapter 3. Refer Page No 117 of EIA report.
39.	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	Nil
40.	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	The benefits of the proposed project are given detail in Chapter 8. Refer Page No 203-207.
41.	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.	The Certified EC compliance for the earlier EC issued by DEIAA, Krishnagiri is under process. It will be submitted to SEIAA/SEAC before EC appraisal meeting.
42.	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn	The EMP for the proposed project is mentioned in Chapter 10 along with EMP

	affidavit stating to abide the EMP for the entire life of mine.	cost. The affidavit stating to abide the EMP for the entire life of mine will be attached in final EIA report.
43.	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	Agreed.

Compliance of conditions mentioned in TOR letter by SEIAA

Compliance of Annexure 'B'

S.No.	CONDITIONS	COMPLIANCE
Cluster Management Committee		
1	Cluster Management Committee shall be framed which must include all the proponents in the cluster as member including the existing as well as proposed quarry.	Agreed. The Cluster Management Committee will be formed as per SEAC guidance.
2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	Agreed. After forming CMC, the all the members will implement environment management plan effectively. Effective plan has been given in Chapter – 4
3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	Agreed. The List of members of the committee formed will be submitted to AD/Mines before the commencing the quarry activity.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	Certified Blaster will be engaged for blasting having adequate knowledge in Environmental safety aspects. Plan will be included in Final EIA report. The usage of haul roads by the individual quarry is attached in EIA report. Refer Fig No 2.19 in page No 57 of Chapter 2.
5	The committee shall deliberate on risk	Risk Management is elaborated in

	management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	Chapter 7 of the Draft EIA report
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.	Agreed. The CMC will form Environmental Policy to practice sustainable mining in a scientific and systematic manner. The same shall be displayed within the cluster area.
7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	The conceptual plan for the quarry area 1.56.5Ha is attached in draft EIA report. Refer Fig No 2.19 in page No 57 of Chapter 2. After forming CMC, the restoration strategy of individual quarry will be submitted to AD Mines, Krishnagiri.
8	The committee shall furnish the Emergency Management plan within the cluster.	Agreed. After forming CMC, the committee will furnish the Emergency Management plan to AD Mines, Krishnagiri
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Occupational safety and Health care of the workers are included in Chapter – 4 in draft EIA report
10	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	Agreed. After forming CMC, he committee will furnish the action plan to achieve sustainable development goals with reference to water, sanitation & safety to AD Mines, Krishnagiri.
11	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.	Agreed. After forming CMC, he committee will furnish fire safety and evacuation plan to AD Mines, Krishnagiri.
Impact study of mining		
12	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the	

	entire mine lease period as per precise area communication order issued from reputed research institutions on the following i) Soil health & bio-diversity. j) Climate change leading to Droughts, Floods etc. k) Pollution leading to release of Greenhouse gases (CHG), rise in Temperature, & Livelihood of the local people. l) Possibilities of water contamination and impact on aquatic ecosystem health. m) Agriculture, Forestry & Traditional practices. n) Hydrothermal/Geothermal effect due to destruction in the Environment. o) Bio-geochemical processes and its foot prints including environmental stress. p) Sediment geochemistry in the surface streams.	Impact on Soil Health, biodiversity, carbon emission and impact on water environment including aquatic ecosystem and on agricultural environment are discussed in detail in Chapter 4.
Agriculture & Agri - Biodiversity		
13	Impact on surrounding agricultural fields around the proposed mining area.	The impact on surrounding agricultural fields is given in chapter 4. Refer Clause 4.14 in page No.187
14	Impact on soil flora & vegetation around the project site.	The impact on ecology and biodiversity including soil flora & vegetation around the project site is mentioned in Chapter 4. Refer Page No.176-182
15	Details of type of vegetations including no of trees & shrubs within the proposed mining area and if so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in the EMP.	This is existing grey granite quarry, so there are only few numbers of mango trees and coconut found within the quarry area. It will not be disturbed during quarrying activity.

16	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural ecosystem.	The impact on ecology and biodiversity including the soil micro flora, fauna and soil seed banks around the project site is mentioned in Chapter 4. Refer Page No.176-182
17	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	At the end of mining, the quarried out pit will be used as water storage pond which improves the agricultural activity in the buffer zone. Refer Page No 57 in Chapter 2. The afforestation plan for five years is given in Chapter 4. Refer Table No 4.31 in Page No.183.
18	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, horticulture, Agriculture and livestock.	Anticipated impact on Agriculture, Horticulture and livestock is given Chapter 4. Refer Clause 4.14.2 in Page No 188.
Forests		
19	The project proponent shall detailed study on impact of mining on reserve forests free ranging wildlife.	There are five reserve forest located within 10km radius and the nearest forest is Thogarapalli R.F located at the distance of 1.7km in south direction. There are no wildlife sanctuaries within 10km radius. Refer Table 2.3 in Page No 22, 23 of Chapter 2. The impact on reserve forest and wild life sanctuary is given in Chapter 4. Refer Clause 4.10 in page No 176.
20	The Environmental Impact Assessment should study on impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	There is no endangered species found within 10km radius study area.
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	As it is existing grey granite quarry, no trees and shrubs are present in the quarry area.
22	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near	There are no protected areas, National Parks, Corridors and Wildlife pathways within 10km radius of the project site. There are 5 reserve forest

	project site.	located within 10km radius. The impact on reserve forest is given in Chapter 4. Refer Clause 4.10 in page No 176.
Water Environment		
23	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. Within 1km (radius) so as to assess the impacts on the nearby water bodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.	The hydro geology study has been conducted within the study area of project site. Refer Page No 90-97 in Chapter 3. The details of water bodies in the study area are given chapter 2. Refer page no 23. The depth of water table identified by Geo resistivity survey is 40m bgl whereas the proposed depth of mining is 36m bgl. Therefore the mining activity will not intersect ground water table. The schematic diagram is given in chapter 4. Refer Page No 171.
24	Erosion Control measures.	To control the erosion, the tree sapling will be planted along the mining lease boundary. Garland drainage will be developed around the dump to control the washout of dump due to hydrostatic pressure.
25	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby villages, water-bodies/Rivers, & any ecological fragile areas.	The impact of mining on the nearby villages and water bodies are given detail in chapter 4.
26	The Project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	The detailed study of impact on fish habitation and food WEB/ food chain in the water body and reservoir is given in Chapter 4. Refer Table 4.29, Page No 180.
27	The Project Proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	The detailed impact studies are given in Chapter 4.
28	The Project Proponent shall study and	The study and the impact on aquatic

	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 site possible land form changes visual and aesthetic impacts.	plants and animals in water bodies are mentioned in Chapter 4. Refer Clause 4.10 in Page No 176. There are no caves, heritage site, and archaeological site found within 10km radius of project site.
29	The terms of reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The impact study on soil health and erosion is given in Clause 4.7 in Chapter 4. Refer Page no 175. The soil physical, chemical components and microbial components are given in Chapter 3. Refer Page No.101, 102.
30	The Environmental Impact Assessment should study on wet lands, water bodies, rivers, streams, lakes and farmer sites.	The impact study on surface water bodies and agricultural land is given in Chapter 4. Refer Page No 169, 170 and 187- 88.
Energy		
31	The measures taken to control Noise, Air, Dust control and steps adopted to efficiently utilise the energy shall be furnished.	The mitigation measure for air pollution and noise pollution is given in chapter 4. Refer Page No 146 and 160.
Climate change		
32	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.	The carbon emission due to proposed mining activity and its mitigation measures are given in Chapter 4. Refer Clause 4.2 in Page No 158.
33	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.	The carbon emission due to proposed mining activity and its mitigation measures are given in Chapter4. Refer Clause 4.2 in Page No 158.
Mine closure plan		
34	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued is given in Chapter 2, pg.No. 56-57
EMP		

35	Detailed Environmental Management Plan along with adaption, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Detailed environmental management plan is given in Chapter 10, pg. No. 209.
36	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	The environmental management plan is given chapter 10. The cost for green belt development is mentioned in Table 10.2 in Chapter 10. Refer Page No 216. Budget for mine closure plan is given in Table 10.3 in Page No 216 of Chapter 10. The disaster management plan is given in Chapter 7. Refer page no 194
Risk Assessment		
37	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of mining.	Disaster management plan is given in Chapter 7, pg. No. 194
Disaster Management Plan		
38	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Details are furnished in Table 7.1 in chapter 7, pg.No. 195
Others		
39	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake, pond, tank etc.	The letter regarding approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake, pond, tank within 300m radius has been obtained from VAO. Refer Annexure XI in Page No 433

40	As per the MoEF&CC office memorandum F.No22-65/2017-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.	Draft EIA is been prepared for conducting public hearing. The points raised in PH and funds allocated will be included in Final EIA report.
41	The project proponent shall study and furnish the possible pollution due to plastic and micro plastic on the environment. The ecological risks and impacts of plastic & micro plastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	The study on pollution due to plastic and micro plastic and its ecological risk is mentioned in Chapter 7. Refer Clause 7.5 in Page no 201.

ANNEXURE 1

Additional Information for Considering EC for Mining Projects

S. No.	Details to be provided	Page No.
1]	Name of the project lease & owner	1
2]	Lease Extent	1
3]	Lease Validity	1
4]	Approved Mining Plan/Scheme – Review a] Specify whether DSR is provided [applicable in case of minor minerals only]	DSR is given in TOR application
5]	Specify – Nature and type of violation	NA
	VI. Without EC or in excess of quantity approved in EC	
	VII. Without CTO or in excess of quantity approved in CTO	
	VIII. Without mining plan/Scheme of mining or in excess of quantity approved in Mining Plan/Scheme of mining	
	IX. Without Forest Clearance	
	X. Any other violation	
6]	Violation period	NA
	III. Number of months	
	IV. Number of Years	

<table>
<tr><td>7]</td><td>Exploitation/Excavation quantity – Reserves proved through exploration by drilling</td><td>Pg No.38-57</td></tr>
<tr><td>8]</td><td>Give details of production from the date of execution of the lease deed / since 1994</td><td>Pg No.3</td></tr>
<tr><td>9]</td><td>Quantity mined out during the violation period & if, yes indicate the violated quantity, in term of % of consented quantity.</td><td>NA</td></tr>
<tr><td>10]</td><td>State illegal mining / encroachments outside the lease boundary? Percentage of quantity mined out outside the lease boundary.</td><td>Not applicable</td></tr>
<tr><td rowspan="3">11]</td><td>Method of working</td><td rowspan="3">[a]</td></tr>
<tr><td>III. Category type ;[a] Mechanised [b] Semi-Mechanised [c] Manual</td></tr>
<tr><td>IV. Construction and design of haul roads</td></tr>
<tr><td rowspan="3"></td><td>[a] Dimension as per the statutory requirements which were followed or otherwise</td><td>34</td></tr>
<tr><td>[b] Number of vehicles plying on the main haul roads inside the mine and the approach road to the pit located outside the mine, if any.</td><td></td></tr>
<tr><td>[c] Are any measures taken to minimize fugitive dust generated form mine haul roads /Does it comply with the CPCB/PCB Guidelines/</td><td>146</td></tr>
<tr><td></td><td>[d] Is there a possibility that air pollutants emitted from the project area that do not comply with air quality standards as per CPCB/PCB/</td><td>No</td></tr>
<tr><td rowspan="9">12]</td><td>Mechanized /Semi- Mechanized Method of Mining</td><td rowspan="9">34</td></tr>
<tr><td>[i] Number of loading/excavating equipments as per approved mining plan and capacity.</td></tr>
<tr><td>[ii] Number of loading/excavating equipments actually being deployed and capacity.</td></tr>
<tr><td>[iii] Type and number of transporting equipments.</td></tr>
<tr><td>[iv] Type of transporting system used –[a] trucks
[b] Any other mode</td></tr>
<tr><td>[v] Capacity and No. Trucks used as per approved mining plan</td></tr>
<tr><td>[vi] Capacity and No. Trucks used actually in the mine</td></tr>
<tr><td>[vii] Number and Capacity of loading equipments and trucks used not in line with approved mining plan</td></tr>
<tr><td colspan="2"><table>
<tr><td></td><td>Capacity [m^3]</td><td>Numbers</td></tr>
<tr><td>Excavator</td><td>-</td><td>-</td></tr>
<tr><td>Tipper</td><td>-</td><td>-</td></tr>
</table></td></tr>
</table>

	[viii] Impact of excess deployment of loading equipments [excavators] and transporting equipments on environment. [a] Air pollutants [b] Water Quality [c] Land Quality [d] Noise level	No excess equipment.
	[ix] Does the deployment of loading equipments[excavators] and trucks fulfill the statutory requirements as per MMR 1961, with respect to the site conditions/	Yes
13]	Method of Rock Breaking / Material preparation for the excavation;	
	[i] Methodology adopted-	
	[a] Drilling and blasting	33-37
	[b] Rock breakers	
	[c] Rippers	
	[d] Surface miners	
	[e] Direct mucking by excavators	
	[f] Manual means	
	[g] Any other methods or combination of above	
	[ii] Incase of drilling and blasting method	
	[a] Type of blasting ; short hole or deep hole	
	[b] Whether controlled blasting technique adopted / If yes, specify the technique with details of the study , year of study	
	[c] Impacts due to blasting defined as per the studies, if any carried out previously as indicated	
	[d] Dust pollution	
	[e] Noise level[dB[A]]	
	[f] Ground vibration studies and Fly rock projection	
	[iii] Impact of preparation of Ore and waste on environment-	
	[a] Air Pollution	
	[b] Noise Pollution	
	[c] Water Pollution	146-188
	[d] Safety standards	
	[e] Traffic density	
	[f] Road Conditions[vulnerability]	
14]	Construction and Design of Dumps.	
	[a] Place / Location.	52-57
	[b] Approach to Dump form the mine distance and safety standards.	
	[c] Area of extent occupied.	

	[d]Dimension of Dump and No. of terrace with heights [benches].	
	[e] Vegetation covered; If yes, specify the details of plants.	
15]	Construction and Design of Waste Dumps.	52-57
	[i] Numbers and Location of Dumps as per approved Mining Plan.	
	[ii] Specify whether reject dumps are located within or outside mining lease.	
	[iii] Area occupied in excess of the approval mining plan.	
	[iv] Dimension of Terracing, Light, shapes, etc., Dump as per approved Mining Plan.	
	[v] Fresh/Existing Dimension Height, shape, width. etc., of Dumps in the mine.	
	[vi] Volume/Quantity added to Waste / Dump during the violated period.	
	[vii] Approach to the Dump-Dimension, distance.	
	[viii] Number of and type of equipments deployed in Dump.	
	[ix] Provision of Garland drains around the Dumps.	
	[x] Any vegetation made on the slopes.	
	[xi] Provision of safety standards.	
	[xii] Impact of Waste/Dumps on environment.	
	[a] Air Pollution	146-188
	[b] Water Pollution	
	[c] Dust Pollution	
	[d] Noise Pollution	
	[xiii] Terracing	
16]	Construction and Design of Ore and sub grade ore / mineral Stacks;-	NA
	[i] Number and Location of Ore stacks.	
	[ii] Dimension of Ore / sub grade Stacks as per the Approved Mining Plan	
	[iii] Volume / Quantity added during the violation period.	
	[iv] Any Screening plant or any other loading equipment engaged during the violated period.	
	[v] Approach to Ore / sub grade stack – Distance, hazards.	
	[vi] Safety standards adopted while operation.	
	[vii] Impact of ore / sub grade on environment.	
	[a] Air Pollution.	
	[b] Water Pollution.	NA
	[c] Dust Pollution.	
	[d] Noise Pollution.	

17]	Mine Pit Water	168-174
	[i] Intersection of Ground water table, specify the measures taken.	
	[ii] Ground water table as per hydro geological Studies [Pumping test].	
	[iii] Provision of Garland drains around pit and dumps.	
	[iv] Water pollution.	
	[v] Management of mine water.	
	[vi] Ultimate pit limit, w.r.t. Ground water intersection and management of drainage of ground water.	
18]	Diversion of General Drainage / River / Nallah course for mining.	No
19]	Clearing of vegetation before the commencement of mining operation – Number of trees [species wise].	No
20]	Man Power.	58
	[a] Statutory management.	
	[b] Regular [Non-statutory] Manpower.	
21]	Occupational Health and Safety.	186-187
	[a] Periodical monitoring of health standards of persons employed as per Mine Act, 1952.	
	[b] Failure to inform statutory bodies periodically, if any.	
22]	Population [Nearby Habitation].	118, 198
	[i] Population/Significant Population / Dense Population within the buffer zone of 10 km.	
	[ii] People displacement due to mining activities.	
	[iii] Location / Existence of habitation near the river or any other historical / sensitive / forest distance.	
	[iv] Impact of mining on Surrounding and habitation- Air, Water, Noise, Pollution.	146-188
	[v] Socio Economic aspects of mining.	117-132
23]	CSR.	205
	[a] Field ground Activities or studies. Actual amount spent towards CSR and the future proposal.	
24]	NOC from DMG for quantity clarification in respect of settlement of all the amount payable against identified violation.	NA
25]	For the Clearance of EC, Public Hearing is mandated as per MoEF & CC Notification. Give reason for exemption of Public Hearing.	The PH will be conducted
26]	Conceptual post mining land use / restoration.	56
27]	Litigation / court cases, if any pending.	NA
28]	Disaster management plan for the mine.	194-196

CHAPTER – 1: INTRODUCTION

1.1 PURPOSE OF THE REPORT

Tvl. Everking Granites having administrative office at No:1/161,T.N.H.B Phase-II, Krishnagiri, Tamil Nadu-635002 represented by Managing partner, S.S. Jamaludeen (Lessee) and the Lessee Thiru.E.Jagadeesan, S/o. Egananthan, residing at No.5/50, Thiruvalluvar Nagar, Krishnagiri District, Tamil Nadu has obtained quarry lease from the State Government under **G.O.(3D).NO. 20 Industries (MME.2) Dept. dated 22.03.2018** and **G.O. (3D).No: 42 Industries (MME.2) Dept. dated 20.09.2018** respectively for quarrying grey granite over an extent of 3.19.5 hectares and 1.56.5 hectares in S.F. Nos 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C and 348/6D1 and in S.F. Nos 353/2A1B, 2A7, 2B, 2C1 & 2E1A respectively located in Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu for the period of 20 years.

The mining plan for grey granite quarry of Tvl. Everking Granites (3.19.5 Ha) and Thiru.E.Jagadeesan (1.56.5 Ha) was approved by Commissioner of Geology and Mining, Chennai vide letter **No. 992/MM5/2017, dated 22.01.2018** and vide letter **No. 993/MM5/2017, dated 13.02.2018.**

An environment clearance for Tvl. Everking Granites and Thiru.E.Jagadeesan was obtained from District Environmental Impact Assessment Authority vide letter **No.36/DEIAA-KGI/EC NO.25/2018 Dated: 27.02.2018** and letter **No. 03/DEIAA-KGI/EC No. 104/2018, dated 27.08.2018** for operating grey granite quarry for the period of five years. For the lease area 3.19.5 Ha, the lease deed was executed on 28.05.2018 and will expire on 27.05.2038 and for the lease area 1.56.5 Ha, the lease deed was executed on 09.11.2018 and will expire on 08.11.2038.

Scheme of mining has to be prepared under Rule 18 (3) of GCDR, 1999 and Rule 41 of TNMMCR, 1959 for the existing mining lease once in five years for systematic and scientific development of quarry. Accordingly, the 1st scheme of mining has been prepared for both the lease areas 3.19.5 Ha and 1.56.5 Ha for the period from 2023-2024 to 2027-2028 and it has been approved by Commissioner, Department of Geology and Mining, Guindy, Chennai vide letter **Rc.No.5253/MM4/2022 dated 14.10.2022** and vide letter **No. 5254/MM4/2022 dated 14.10.2022**.

Recently MoEF&CC has issued OM vide F.No.IA3-22/11/2023-IA.III (E-208230) dated 28.04.2023. In this notification, it is stated that the EC issued by DEIAA between 15.01.2016 and 13.09.2018 shall be reappraised through SEAC/SEIAA and EC shall be issued by SEIAA within the period of 1 year.

As per the cluster letter issued by Deputy Director, Department of Geology and Mining, Krishnagiri vide Rc.No.1200/2022/Mines dated 28.10.2022 for Tvl. Everking Granites (3.19.5 Ha) and vide Rc.No.1201/2022/Mines dated 28.10.2022 for Thiru.E.Jagadeesan (1.56.5 Ha), six existing granite quarries including grey granite quarry of Tvl. Everking Granites and Thiru.E.Jagadeesan comes within cluster of 500m radius. The total area of cluster is 13.14.5 Ha. The extents of lease area of all lessees as per cluster letter of Thiru.E.Jagadeesan (1.56.5 Ha), are given below.

Existing Quarries

1. Thiru.E.Jagadeesan – 1.56.50 Ha
2. M/s.Everking Granites – 3.19.50 Ha
3. Tvl.M.P.Granite – 1.85.50 Ha
4. M.P. Mining and Leasing Company – 1.84.00 Ha
5. S.S.Jameeluddin – 1.25.00 Ha
6. Thiru.A.V.Elamurugu – 1.01.50 Ha
7. Thiru.A.V.Elamurugu – 2.42.50 Ha

Based on MoEF&CC OM vide F.No.IA3-22/11/2023-IA.III (E-208230) dated 28.04.2023 and cluster letter issued by Deputy Director, Department of Geology and Mining, Krishnagiri, the two lessee made TOR application individually through PARIVESH website to carry out EIA Studies for obtaining Environmental clearance. The details are given in below Table 1.1.

Table 1.1 Details on Terms of Reference

S. No	Name of Applicant	ToR Application No	SEAC and SEIAA Meeting No	TOR Letter No
1	Tvl. Everking Granites	SIA/TN/MIN/404966/ 2022 dated 04.11.2022	346th SEAC Meeting, dated 12.01.2023 and 591st SEIAA Meeting dated 10.02.2023 361st SEAC meeting dated 10.03.2023 and 607th SEIAA Meeting dated 03.04.2023	Lr.No.SEIAA-TN/F.No.9549/SEAC/ ToR-1513/2023 dated 01.08.2023
2	Thiru.E.Jagadeesan	SIA/TN/MIN/404965/ 2022 dated 04.11.2022	393rd SEAC Meeting, dated 20.07.2023 and 643rd SEIAA Meeting dated 01.08.2023	Lr.No.SEIAA-TN/F.No9550/ToR-1514/2022 dated 01.08.2023

In TOR letters, it is mentioned that public hearing needs to be conducted for the existing grey granite quarries of two applicants for obtaining EC. In MOEF&CC SO 141 (E) dated 15.01.2016-Appendix XI, it is mentioned that there shall be one public consultation for entire cluster after which the final Environmental Impact Assessment Report or Environmental Management Plan report for the cluster shall be prepared. Based on the OM issued by MOEF & CC, the combined Draft EIA/EMP report has been prepared for the two existing quarries in the cluster of 13.14.5 Ha for conducting public hearing. The points raised in the public hearing and the commitments of the project proponent will be given detail in the Final EIA Report which will be submitted to SEAC/SEIAA, TN for obtaining environmental clearance. The production achieved by the Lessee since inception of mining activity as against approved Mining plan/Scheme is given below.

Table 1.2 Production Details from 2006 – 2026

Tvl. EVERKING GRANITES – 3.19.5 Ha		
Year	**Planned Production as per AMP (cu.m)**	**Achieved Production (cu.m)**
2018-19	10413	581.278
2019-20	10449	686.797
2020-21	10516	Nil
2021-22	10501	Nil
2022-23	10580	102.99*
Total	**52,459**	**1371.065**
Thiru.E.Jagadeesan – 1.56.5 Ha		
Year	**Planned Production as per AMP(cu.m)**	**Achieved Production (cu.m)**
2018-19	1588	22.207
2019-20	1588	1246.402
2020-21	1530	190.266
2021-22	2103	518.202
2022-23	2565	244.074*
Total	**9374**	**2088.091**

From the above table, it is shown that both the applicants excavate the granite within the quantity as mentioned in approved mining plan. The production quantity mentioned in approved mining plan and in environmental clearance issued by DEIAA is same. Therefore there is no violation in these two proposed projects.

1.2. IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

Table 1.3 Details on Project and Project Proponent

A. Proposed Projects to Conduct Public Hearing	
1. Tvl. EVERKING GRANITES	
Particulars	**Details**
Address of the Project Proponent	**Tvl. EVERKING GRANITES** The Managing Partner: S.S.Jameeluddin No:1/161, T.N.H.B Phase-II, Krishnagiri, Tamil Nadu-635002, E.mail: jameel.rkf@gmail.com Mob: +919994433007, +919443632513
Lease Area	3.19.5 Hectares (Patta Land)
Site Location	S.F.No: 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C and 348/6D1, Jagadevipalayam village, Bargur Taluk, Krishnagiri District, Tamil Nadu
Geographical Co-ordinates	Latitude: N12°28'39.72981"to N12°28'50.35514" Longitude: E78°21'06.95056" to E78°21'15.36719".
Toposheet No.	57L/7
Elevation	Elevation of the area is 451m above MSL
Government Order	G.O.(3D).NO. 20 Industries (MME.2) Dept. dated 22.03.2018
Precise Area Communication	letter No. 3809/MME.2/2017-1, dated 06.09.2017
Mining Plan Approval Details	letter No. 992/MM5/2017, dated 22.01.2018
EC letter from DEIAA	letter No. 36/DEIAA-KGI/EC NO.25/2018 Dated: 27.02.2018.
Period of Lease	20 years (28.05.2018 to 27.05.2038)
Approval of Scheme of mining	Rc.No.5253/MM4/2022 dated 14.10.2022
AD Cluster letter	Rc.No.1200/2022/Mines dated 28.10.2022.
2. Thiru.E.Jagadeesan	
Particulars	**Details**
Address of the Project Proponent	**Thiru.E.Jagadeesan** S/o. Egananthan, No.5/50,Thiruvalluvar Nagar, Krishnagiri District, Tamil Nadu 635001. E.mail: jameel.jk@gmail.com Mob: +9994433007.
Lease Area	1.56.5 Hectares (Patta Land)
Site Location	S.F.Nos. 353/2A1B, 2A7, 2B, 2C1 & 2E1A, Jagadevipalayam Village, Bargur Taluk, Krishnagiri

	District and Tamil Nadu.
Geographical Co-ordinates	Latitude: 12°28'34.91765" N to 12°28'40.90210"N Longitude: 78°21'11.18021" E to 78°21'17.84397"E
Toposheet No.	57 L/7
Elevation	Elevation of the area is 453m above MSL
Government Order	G.O. (3D).No: 42 Industries (MME.2) Dept. dated 20.09.2018.
Period of Lease	20 years (09.11.2018 to 08.11.2038)
Precise Area communication	letter No. 5137/ MME.2 / 2017-1, dated 08.09.2017
Mining Plan Approval Details	letter No. 993/MM5/2017, dated 13.02.2018
EC letter from DEIAA	letter No. 03/DEIAA-KGI/EC No. 104/2018, dated 27.08.2018
Period of Lease	20 years (09.11.2018 to 08.11.2038)
Approval of Scheme of mining	Rc.No. 5254/MM4/2022 dated 14.10.2022
AD Cluster letter	Rc.No.1201/2022/Mines Dated 28.10.2022
B. Other Existing Quarries within 500m radius	
1.Tvl. M.P Granites	
Address of the Project Proponent	Tvl.M.P Granite, No.131/29, R.R. Complex, Kollapatti, Animoor Post, Tiruchengode.
Government Order	GO (3D) No.07 Ind.(MME-2) Dept. dated 18.01.2016
Village and Taluk	Jagadevipalayam Village, Bargur Taluk.
S.F.No	266/1, 266/1AC, 268/1AD
Extent in Ha	1.85.50 Ha
Lease period	03.02.2016 to 02.02.2023
2. M.P Mining and Leasing Company	
Address of the Project Proponent	M.P Mining and Leasing Company, No.2/226, Karisalkulam Road, Vakkanangundu, Kariyapatti, Virudhunagar.
Government Order	GO (3D) No.72 Ind.(MME-2) Dept. dated 01.12.2016
Village and Taluk	Jagadevipalayam Village, Bargur Taluk.
S.F.No	268/1Y, 268/1Z, 268/2K, 268/1AB
Extent in Ha	1.84.00 Ha
Lease period	10.02.2017 to 09.02.2037
3. S.S.Jameeluddin	

Address of the Project Proponent	S.S. Jameeluddin S/o. S.S. Salauddin, No. 449/1, New Housing Board, II Phase, Krishnagiri.
Government Order	GO (3D) No.17 Ind.(MME-2) Dept. dated 08.04.2008
Village and Taluk	Jagadevipalayam Village, Bargur Taluk.
S.F.No	372/3A
Extent in Ha	1.25.00 Ha
Lease period	22.12.2008 to 21.12.2028
4.Thiru.A.V.Elamurugu	
Address of the Project Proponent	Thiru.A.V.Elamurugu, No.8, Ramakrishnapuram, 30Ft road, Karur Town, Karur.
Government Order	GO (3D) No.03 Ind.(MME-2) Dept. dated 25.01.2011
Village and Taluk	Jagadevipalayam Village, Bargur Taluk.
S.F.No	372/3B5, 372/3B6
Extent in Ha	1.01.50 Ha
Lease period	28.02.2011 to 27.02.2031
5.Thiru.A.V.Elamurugu	
Address of the Project Proponent	Thiru.A.V.Elamurugu, No.8, Ramakrishnapuram, 30Ft road, Karur Town, Karur
Government Order	GO (3D) No.19 Ind.(MME-2) Dept. dated 12.02.2016
Village and Taluk	Jagadevipalayam Village, Bargur Taluk.
S.F.No	372/3B2(P), 372/3B4(P), 372/3B5(P), 377/1A(P)
Extent in Ha	2.42.50 Ha
Lease period	29.02.2018 to 8.02.2036

Table No: 1.4 Land Particulars

1. Tvl. EVERKING GRANITES					
District & State	**Taluk**	**Village**	**S.F.No.**	**Area (Ha)**	**Ownership/ Occupancy**
TamilNadu & Krishnagiri	Bargur	Jagadevipalayam	347/1	0.33.0	Patta land
			347/2	0.65.0	
			347/4	0.23.5	
			347/5	1.06.0	
			348/4	0.32.0	
			348/5	0.20.0	
			348/6B1	0.16.2	
			348/6C	0.10.5	

			348/6D1	0.13.3	
Total				**3.19.5 Ha**	
2. Tmt. S. Selvamani					
District & State	**Taluk**	**Village**	**S.F.No.**	**Area (Ha)**	**Ownership/ Occupancy**
TamilNadu & Krishnagiri	Bargur	Jagadevipalayam	353/2A1B	0.24.5	Patta land
			353/2A7	0.88.0	
			353/2B	0.06.0	
			353/2C1	0.05.5	
			353/2E1A	0.32.5	
Total				**1.56.5 Ha**	

1.3. BRIEF DESCRIPTION OF THE PROJECT

1.3.1. Nature and Size of the Project

Open cast Mechanized mining shall be adopted to raise the production in this area and transportation of granite and waste. Hydraulic excavators and tippers have been used for loading and transporting the rejects and wastes. Cranes are used for loading the granite blocks in the tipper. The wire saw cutting is adopted below second bench to recover more granite blocks to increase the rate of recovery. Granite is being used for decorative purposes in building, monument, Institutional, commercial and residential buildings in the form of slabs, tiles, cut to size, markers etc.

For the lease area of 3.19.5 Ha, the geological resource is estimated as 3,94,694 m^3 whereas mineable reserves is estimated as 2,12,420m^3 up to a depth of 30m from the surface. The production shall be 30,124m^3 at the rate of 30% recovery for five years. The above said reserves and productions are as per 1st scheme of mining (2023-24 to 2027-28).

For the lease area of 1.56.5Ha, the geological resource is estimated as 2,03,274 m^3 whereas mineable reserves is estimated as 90,994m^3 up to a depth of 36m from the surface. The production shall be 15,529m^3 at the rate of 30% recovery for five years. The above said reserves and productions are as per 1st scheme of mining (2023-24 to 2027-28).

1.3.2. LOCATION OF THE PROJECT

The proposed sites are easily accessible from Krishnagiri. By travelling from Krishnagiri via NH77 (Krishnagiri to Uthangarai) Bagimanur X road is reached at the distance of 15km. From the Bagimanur X road, by travelling via Bagimanur village road, the project site is reached at the distance of 2.3km in left side. The area is represented by Survey of India Toposheet No. **57L/7.** The location map is given in fig no 1.1. The latitude and longitude of two lease areas are given in below table

Table No.1.5 Latitude and Longitude of two proposed project

S.No	Project Site	Latitude	Longitude
1	Tvl. Everking Granites – 3.19.5 Ha	N12°28'39.72981"to N12°28'50.35514"	E78°21'06.95056" to E78°21'15.36719"
2	Thiru.E.Jagadeesan – 1.56.5 Ha	12°28'34.91765" N to 12°28'40.90210"N	78°21'11.18021" E to 78°21'17.84397"E

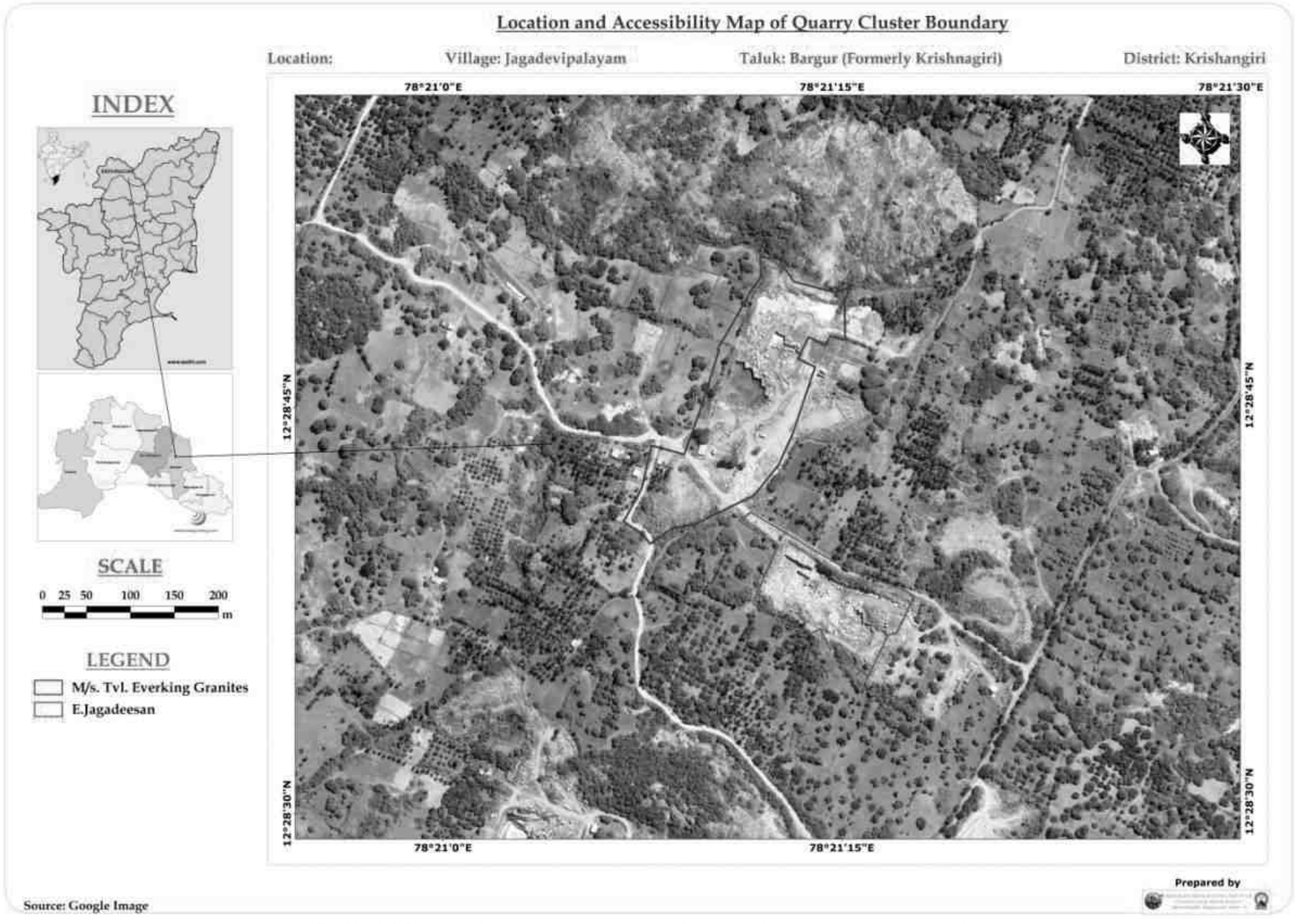


Fig.No:1.1 Showing Location and route map for two existing grey granite quarries

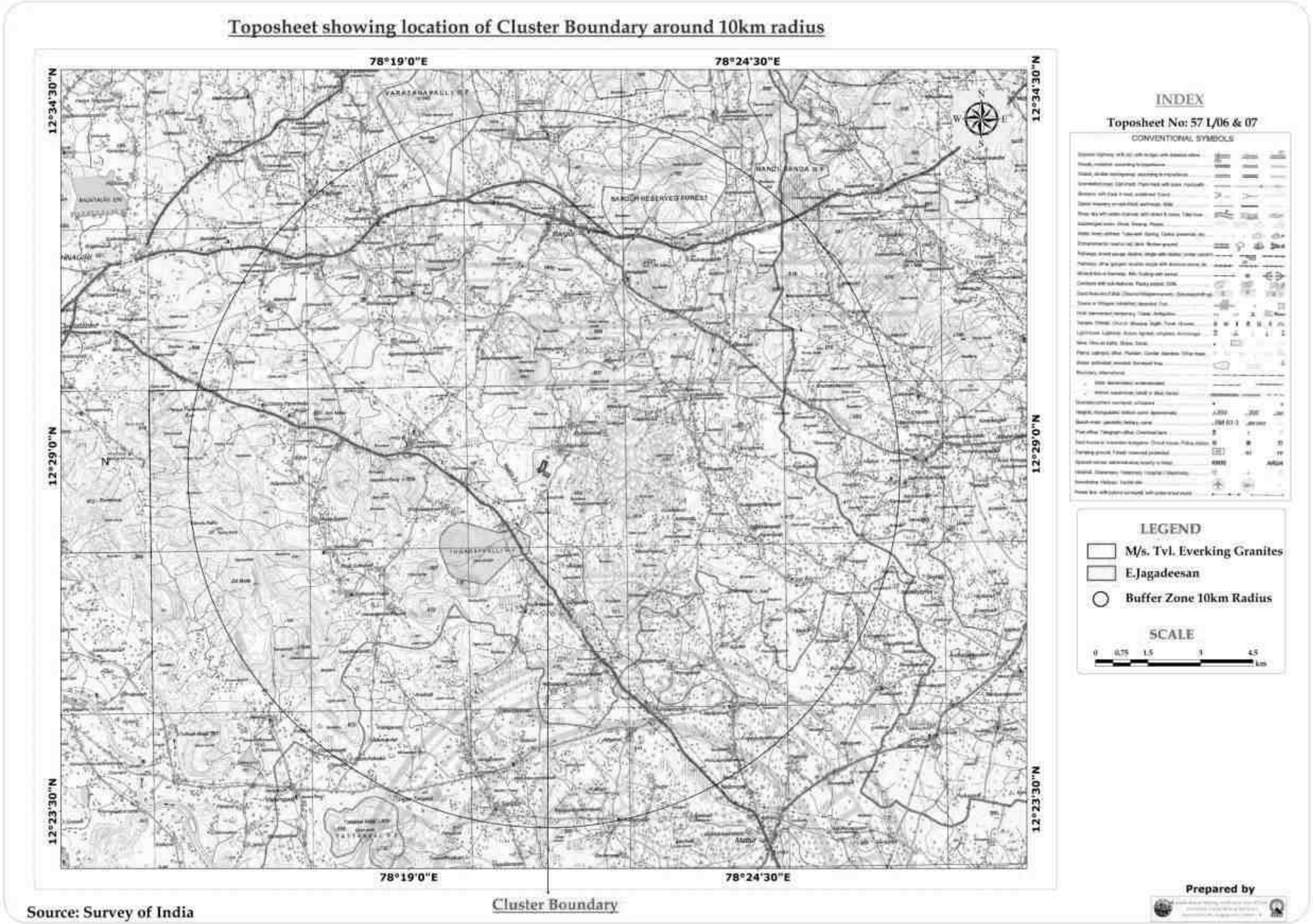


Fig 1.2: Toposheet showing Location of the two existing grey granite quarries

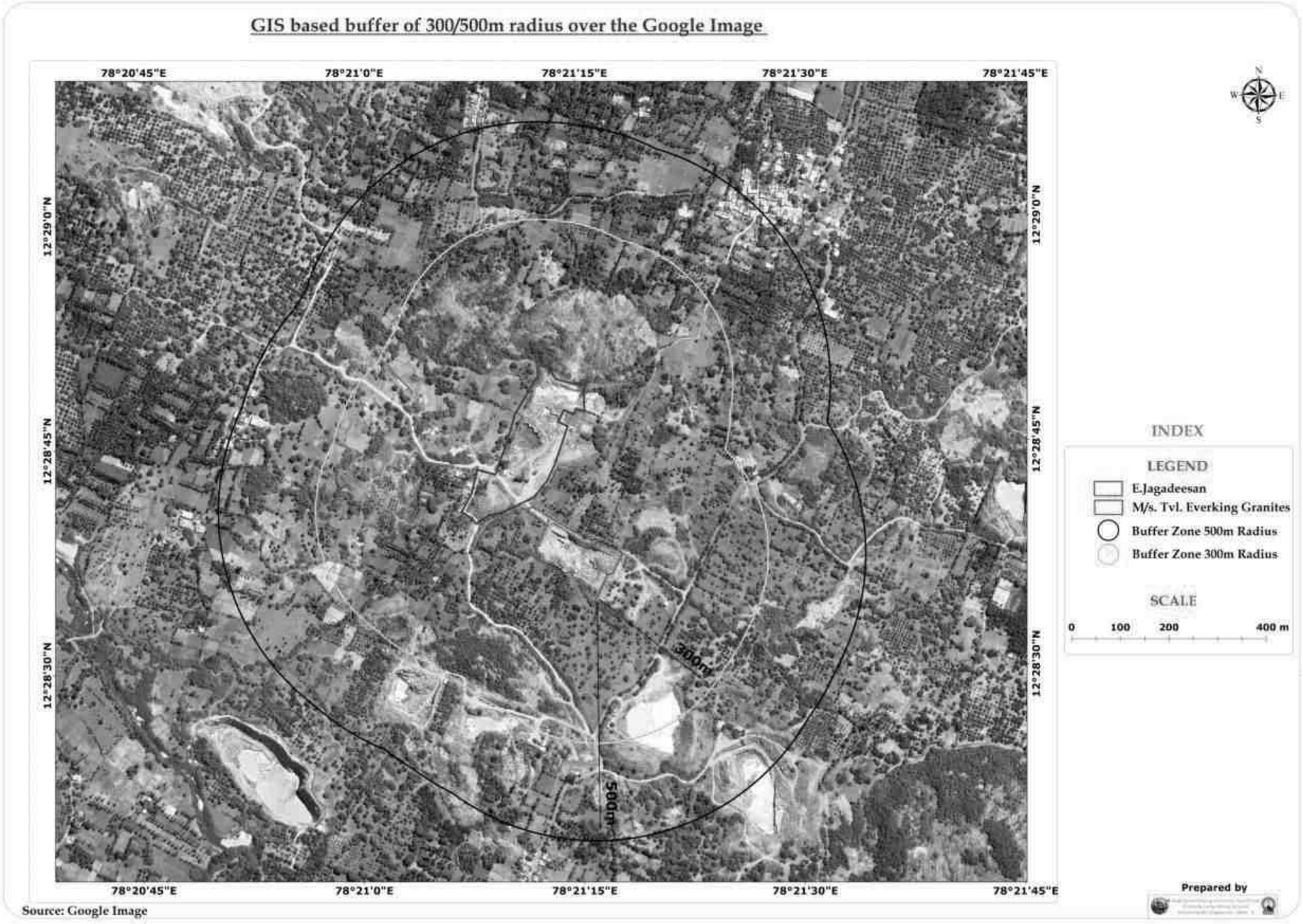


Fig 1.3: Google Earth Image showing 300m and 500m radius around two existing grey granite quarries

1.4. SCOPE OF THE PROJECT

The proposal for Environment Clearance for two existing Grey Granite Quarry of Tvl Everking Granites (3.19.5Ha) and Thiru Jagadeesan (1.56.5Ha) requires Combined Environmental Impact Assessment (EIA) study to be carried out as per Standard, Specific and additional TOR specified by the SEAC. Based on the documents furnished for TOR, the Committee observed that the project falls under the category B1(Cluster) and schedule 1(a) of the EIA Notification, 2006 as the cluster area is greater than 5 Ha and less than 100 Ha. This is primarily to ascertain the potential impacts of the mining activity on environmental components, prediction and evaluation of environmental impacts to delineate Environment Management Plan.

The EIA/EMP report also includes an independent chapter prepared by an Accredited Consultant. The collection and analysis of air, water and soil sample required for preparation of EIA report data will be done by an Environmental Laboratory duly notified under the Environment (Protection) Act, 1986, accredited by NABET/NABL.

The scope of the study includes a detailed characterization of the environment in an area of 10km radius from the mine lease Area. The EIA covers one season baseline environmental data, as per the standard generic model given by the MoEFCC, New Delhi.

In order to assess the likely impacts arising out of this project on the surrounding environment and evaluating the quantum of likely negative impacts, if any, from this mine, the proponent has selected Aadhi Boomi Mining and Enviro Tech Pvt. Ltd., Salem as their EIA consultant for this project. ABM prepared an Environmental Impact Assessment (EIA) report and made an effective Environment management Plan (EMP) for various environmental components likely to be affected.

The scope covers all the conditions along with the specific and additional TOR prescribed by SEAC/SEIAA, Tamil Nadu vide

i) Lr.No.SEIAA-TN/F.No.9549/SEAC/TOR-1513/2023 dated 01.08.2023 for P 1
ii) Lr.No.SEIAA-TN/F.No.9550/TOR-1514/2022 dated 01.08.2023 for P 2

1.5 METHODOLOGY OF EIA STUDY

The EIA study includes detailed baseline data generation and characterization of existing status of environment in an area of 10km radius with the project as its centre for various environmental components viz. air, noise, water, land, geo-hydrology, Noise & Vibration, biological and socio-economic components and other parameters of interest. The envisaged scope of EIA is as follows:

- To assess the present status of air, biota, water, land, biological and socio-economic components of environment within 10km radius of study area from the project site.
- To identify and quantify the significant positive and negative impacts due to various mining operation in various components of the environment through identification and prediction of impacts
- To identify the impact and description of the impact with quantitative and qualitative data
- To prepare a detailed Environment Management Plan for implementation of mitigate measures
- To suggest a monitoring program to evaluate the effectiveness of mitigate measures
- Post-project environmental quality monitoring program to be followed

The baseline monitoring study has been carried out during the March 1st 2023 to May 31st 2023 for various environmental components so as to assess the anticipated impact on the environment and suggest suitable mitigation measures for likely adverse impacts due to the project. Environmental attributes, source and frequency of monitoring are outlined in Table No 1.6.

Table: 1.6 Environment Attributes

S. No	Attributes	Parameters	Source and Frequency
1	Meteorology	Temperature, Wind Speed, Wind Direction, Rain fall, Relative Humidity,	Secondary sources of IMD station, Coimbatore. Hourly recorded data for the period of 3months.
2	Ambient Air Quality	PM_{10}, $PM_{2.5}$, SO_2, NO_x	8 hour samples twice in a week for three months at 5 locations.
3	Water Quality	Physical, Chemical and Biological parameters	Grab sampling at 3 locations once during study period.
4	Noise levels	Noise levels in dB (A)	At 5 locations data monitored once in a Month for three months for 24 hours during EIA study.
5	Soil Characteristics	Physical and Chemical parameters	Once at 3 locations during study period
6	Hydrogeology	Drainage area and pattern, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected through field investigation devices once in a study.

7	Land use	Existing land use for different categories	Based on Survey of India Toposheet and Google Earth imagery
8	Ecology and Biodiversity	Existing terrestrial flora and fauna within 10Km radius	Field observation and utilization of Secondary data.
9	Socio–Economic aspects	Socio–economic and demographic characteristics, worker characteristics	Based on collection of primary data through questionnaire analyses and utilization of Secondary data from census records (2001 –2011), statistical hand books, topo sheets, health records and relevant official records.
10	Risk assessment and Disaster Management Plan	Identify areas where disaster can occur by fires and explosions and release of toxic substances if any	Based on the findings of risk associated with explosives, landslides, slips and fire/explosion during blasting etc..,

The impacts of the project activities on environmental components can be quantified through EIA Studies within the impact zone of the project activities. The results of EIA Studies form the basis for the preparation of a viable EMP for mitigation of the adverse impacts.

CHAPTER – 2: PROJECT DESCRIPTION

2.1. NEED FOR THE PROJECT

The Applicants, Tvl. Everking Granites (3.19.5 Ha) and Thiru.E.Jagadeesan (1.56.5 Ha) have been granted quarry leases from the State Government for quarrying grey granite in Jagadevipalayam Village, Bargur Taluk and Krishnagiri District under G.O.(3D).NO. 20 Industries (MME.2) Dept. dated 22.03.2018 and G.O. (3D).No: 42 Industries (MME.2) Dept. dated 20.09.2018 respectively for the period of twenty years. An environment clearance for Tvl. Everking Granites and Thiru.E.Jagadeesan was obtained from District Environmental Impact Assessment Authority vide letter No.36/DEIAA-KGI/EC NO.25/2018 Dated: 27.02.2018 and letter No. 03/DEIAA-KGI/EC No. 104/2018, dated 27.08.2018 for operating grey granite quarry for the period of five years.

Based on MOEF&CC OM dated 28.04.2023 and DD's 500m radius cluster letter, the two lessees made an ToR application to SEIAA/SEAC, Chennai to carry out EIA studies and to conduct public hearing for obtaining environmental clearance from SEIAA/SEAC.

Granite is one of the important materials for the building construction. Granite is used in many outdoor and indoor projects. Outdoor projects like bridges, monuments, buildings, paving etc. Indoor projects like countertops, floor etc. Using granite for kitchen tops, shelves, tabletops etc makes it look elegant. Apart from elegance, it has great strength and is durable. It looks stylish and is easy to clean. Granite sinks like the under-mount sink, angular basin, modern or pedestals sink are some different granite basins available. These are water-resistant and maintenance is also easy. So it is very need to excavate the granite for economic and infrastructure development of our Nation.

2.2 DEMAND – SUPPLY GAP

Construction of building, temple and monuments takes place in all villages, towns, cities and metropolitan cities. There is great demand in availability of granite. So it is necessary to fulfill the demand by operating the two existing grey granite quarries.

2.3 LOCATION

The areas are represented by Survey of India Toposheet No. 57L/7. The lease boundary with Geo Co-ordinates is shown in Fig no 2.1 and 2.2. The latitude and longitude of two existing lease areas are given in below table 2.1.

Table No.2.1 Latitude and longitude of two existing quarry

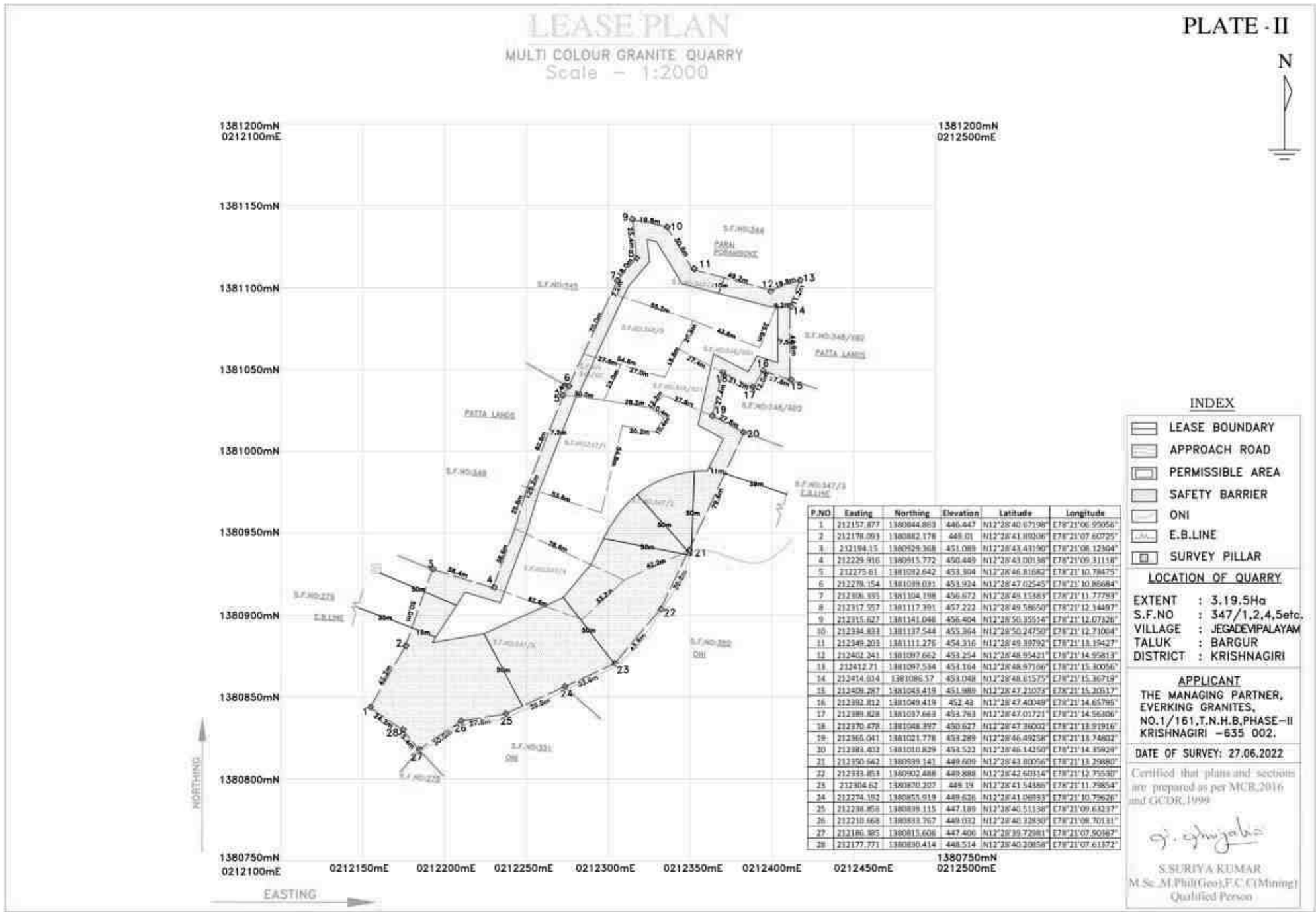
S.No	Project Site	Latitude	Longitude
1	Tvl. Everking Granites – 3.19.5 Ha	N12°28'39.72981" to N12°28'50.35514"	E78°21'06.95056" to E78°21'15.36719".
2	Thiru. Jagadeesan – 1.56.5 Ha	12°28'34.91765" N to 12°28'40.90210"N	E 78°21'11.18021" to E 78°21'17.84397"

Latitude and Longitude of all boundary Pillars of two quarries are given in below Table 2.2.

Table No-2.2 Co-ordinates of two Quarries lease Boundary Pillars by DGPS Survey

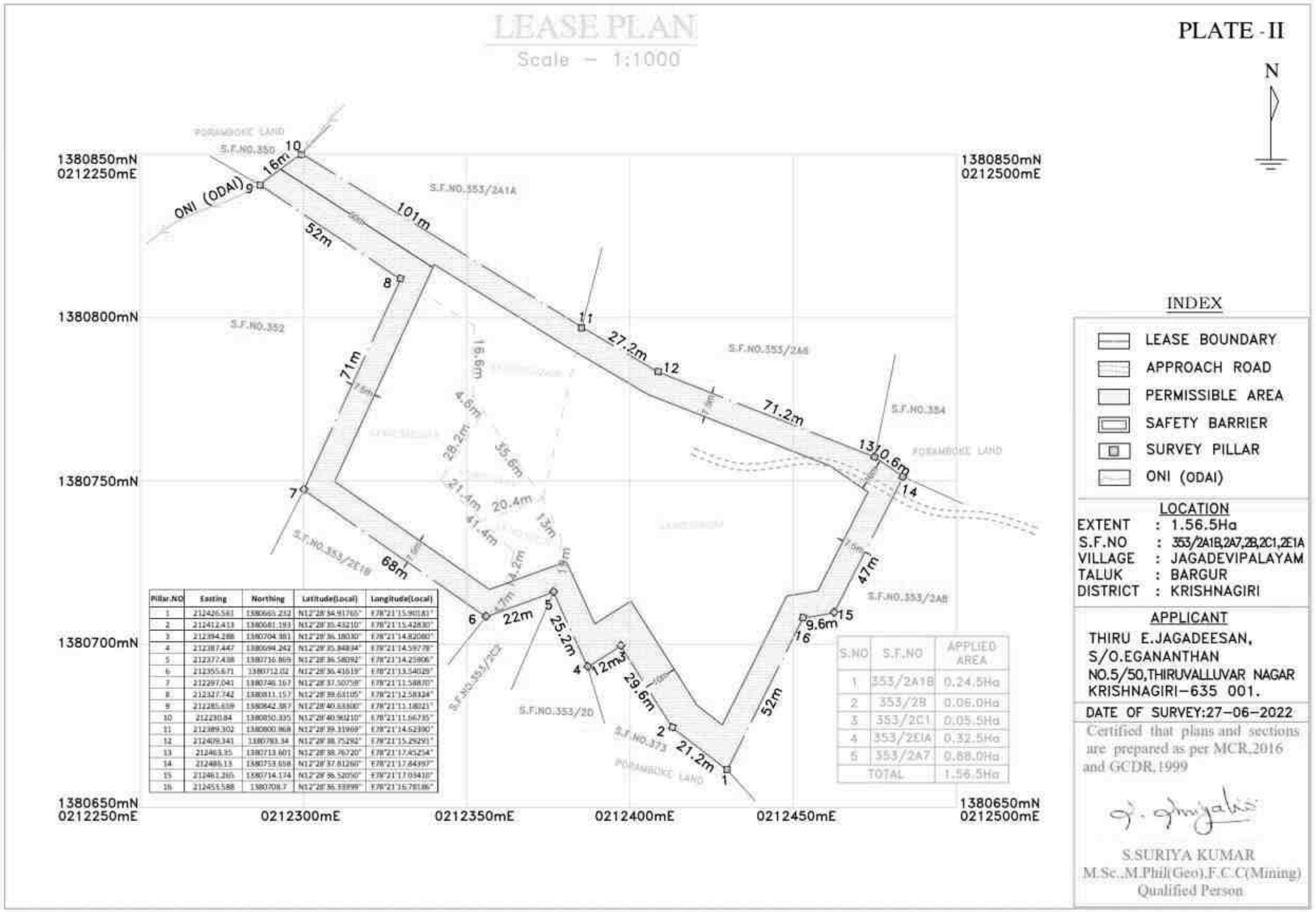
Tvl. Everking Granites – 3.19.5 Ha					
P.No	**Latitude**	**Longitude**	**P.No**	**Latitude**	**Longitude**
1	N12°28'40.67198"	E78°21'06.95056"	14	N12°28'48.61575"	E78°21'15.36719"
2	N12°28'41.89206"	E78°21'07.60725"	15	N12°28'47.21073"	E78°21'15.20517"
3	N12°28'43.43190"	E78°21'08.12304"	16	N12°28'47.40049"	E78°21'14.65795"
4	N12°28'43.00138"	E78°21'09.31118"	17	N12°28'47.01721"	E78°21'14.56306"
5	N12°28'46.81682"	E78°21'10.78475"	18	N12°28'47.36002"	E78°21'13.91916"
6	N12°28'47.02545"	E78°21'10.86684"	19	N12°28'46.49258"	E78°21'13.74802"
7	N12°28'49.15383"	E78°21'11.77793"	20	N12°28'46.14250"	E78°21'14.35929"
8	N12°28'49.58650"	E78°21'12.14497"	21	N12°28'43.80056"	E78°21'13.29880"
9	N12°28'50.35514"	E78°21'12.07326"	22	N12°28'42.60314"	E78°21'12.75530"
10	N12°28'50.24750"	E78°21'12.71004"	23	N12°28'41.54386"	E78°21'11.79854"
11	N12°28'49.39792"	E78°21'13.19427"	24	N12°28'41.06933"	E78°21'10.79626"
12	N12°28'48.95421"	E78°21'14.95813"	25	N12°28'40.51138"	E78°21'09.63237"
13	N12°28'48.97166"	E78°21'15.30056"	26	N12°28'40.32830"	E78°21'08.70131"
Thiru. Jagadeesan – 1.56.5 Ha					
P.No	**Latitude**	**Longitude**	**P.No**	**Latitude**	**Longitude**
1	N12°28'34.91765"	E78°21'15.90181"	9	N12°28'40.63300"	E78°21'11.18021"
2	N12°28'35.43210"	E78°21'15.42830"	10	N12°28'40.90210"	E78°21'11.66735"
3	N12°28'36.18030"	E78°21'14.82080"	11	N12°28'39.31969"	E78°21'14.62390"
4	N12°28'35.84834"	E78°21'14.59778"	12	N12°28'38.75292"	E78°21'15.29291"
5	N12°28'36.58092"	E78°21'14.25906"	13	N12°28'38.76720"	E78°21'17.45254"
6	N12°28'36.41619"	E78°21'13.54029"	14	N12°28'37.81260"	E78°21'17.84397"
7	N12°28'37.50759"	E78°21'11.58870"	15	N12°28'36.52050"	E78°21'17.03410"
8	N12°28'39.63105"	E78°21'12.58324"	16	N12°28'36.33999"	E78°21'16.78186"

- No Trees will be uprooted due to this quarrying operation.
- The existing road from the main road to quarry is in good condition and the same will be maintained and utilized for Transportation of granite.



P.NO	Easting	Northing	Elevation	Latitude	Longitude
1	212157.877	1380844.863	446.447	N12°28'40.67198"	E78°21'06.99056"
2	212178.093	1380882.178	448.01	N12°28'41.89206"	E78°21'07.60725"
3	212194.15	1380929.368	451.089	N12°28'43.43190"	E78°21'08.12304"
4	212229.916	1380915.772	450.449	N12°28'43.00138"	E78°21'09.31118"
5	212275.61	1381032.642	453.304	N12°28'46.81682"	E78°21'10.78475"
6	212278.154	1381089.031	453.924	N12°28'47.02545"	E78°21'10.86684"
7	212306.395	1381104.198	456.672	N12°28'49.15383"	E78°21'11.77793"
8	212317.957	1381117.391	457.222	N12°28'49.58650"	E78°21'12.14497"
9	212315.627	1381141.046	456.404	N12°28'50.35514"	E78°21'12.07326"
10	212334.833	1381137.544	455.364	N12°28'50.24750"	E78°21'12.71004"
11	212349.203	1381111.276	454.316	N12°28'49.39792"	E78°21'13.19427"
12	212402.343	1381097.662	453.254	N12°28'48.95421"	E78°21'14.95813"
13	212412.71	1381097.534	453.164	N12°28'48.97166"	E78°21'15.30056"
14	212414.614	1381086.57	453.048	N12°28'48.61575"	E78°21'15.36719"
15	212409.287	1381043.419	451.989	N12°28'47.21075"	E78°21'15.20517"
16	212392.812	1381049.419	452.43	N12°28'47.40048"	E78°21'14.65795"
17	212389.828	1381037.663	453.763	N12°28'47.01721"	E78°21'14.56306"
18	212370.478	1381048.397	450.627	N12°28'47.36002"	E78°21'13.91916"
19	212365.041	1381021.778	453.289	N12°28'46.49258"	E78°21'13.74802"
20	212383.402	1381010.829	453.522	N12°28'46.14250"	E78°21'14.35929"
21	212350.662	1380939.141	449.609	N12°28'43.80056"	E78°21'13.29880"
22	212333.853	1380902.488	449.888	N12°28'42.60314"	E78°21'12.75530"
23	212304.62	1380870.207	448.19	N12°28'41.54386"	E78°21'11.79854"
24	212274.192	1380855.919	449.626	N12°28'41.06933"	E78°21'10.79626"
25	212238.856	1380839.115	447.189	N12°28'40.51338"	E78°21'09.63237"
26	212210.668	1380833.767	449.032	N12°28'40.32830"	E78°21'08.70131"
27	212186.385	1380815.606	447.406	N12°28'39.72981"	E78°21'07.90367"
28	212177.771	1380830.414	448.514	N12°28'40.20858"	E78°21'07.61372"

Fig.No.2.1: Lease Plan of Existing Grey Granite Quarry of Tvl Everking Granites (3.19.5 Ha)



Pillar.NO	Easting	Northing	Latitude(Local)	Longitude(Local)
1	212426.581	1380665.232	N12°28'34.91765"	E78°21'15.90181"
2	212412.413	1380681.193	N12°28'35.43210"	E78°21'15.42830"
3	212394.288	1380704.381	N12°28'36.18030"	E78°21'14.82080"
4	212387.447	1380694.242	N12°28'35.84834"	E78°21'14.59778"
5	212377.438	1380716.869	N12°28'36.58092"	E78°21'14.25906"
6	212355.671	1380712.02	N12°28'36.41619"	E78°21'13.54029"
7	212297.041	1380746.167	N12°28'37.50759"	E78°21'11.58870"
8	212327.742	1380811.157	N12°28'39.61105"	E78°21'12.58324"
9	212285.659	1380842.387	N12°28'40.63380"	E78°21'11.18021"
10	212230.84	1380850.335	N12°28'40.90210"	E78°21'11.66735"
11	212389.302	1380800.868	N12°28'39.31969"	E78°21'14.62300"
12	212409.341	1380783.34	N12°28'38.75292"	E78°21'15.29291"
13	212463.35	1380713.601	N12°28'38.76720"	E78°21'17.45254"
14	212486.13	1380753.658	N12°28'37.81260"	E78°21'17.84397"
15	212461.265	1380714.174	N12°28'36.52050"	E78°21'17.03410"
16	212455.588	1380708.7	N12°28'36.33999"	E78°21'16.78186"

S.NO	S.F.NO	APPLIED AREA
1	353/2A1B	0.24.5Ha
2	353/2B	0.06.0Ha
3	353/2C1	0.05.5Ha
4	353/2E1A	0.32.5Ha
5	353/2A7	0.88.0Ha
TOTAL		1.56.5Ha

Fig.No.2.2: Lease Plan of Existing Grey Granite Quarry of Thiru.E.Jagadeesan (1.56.5 Ha)

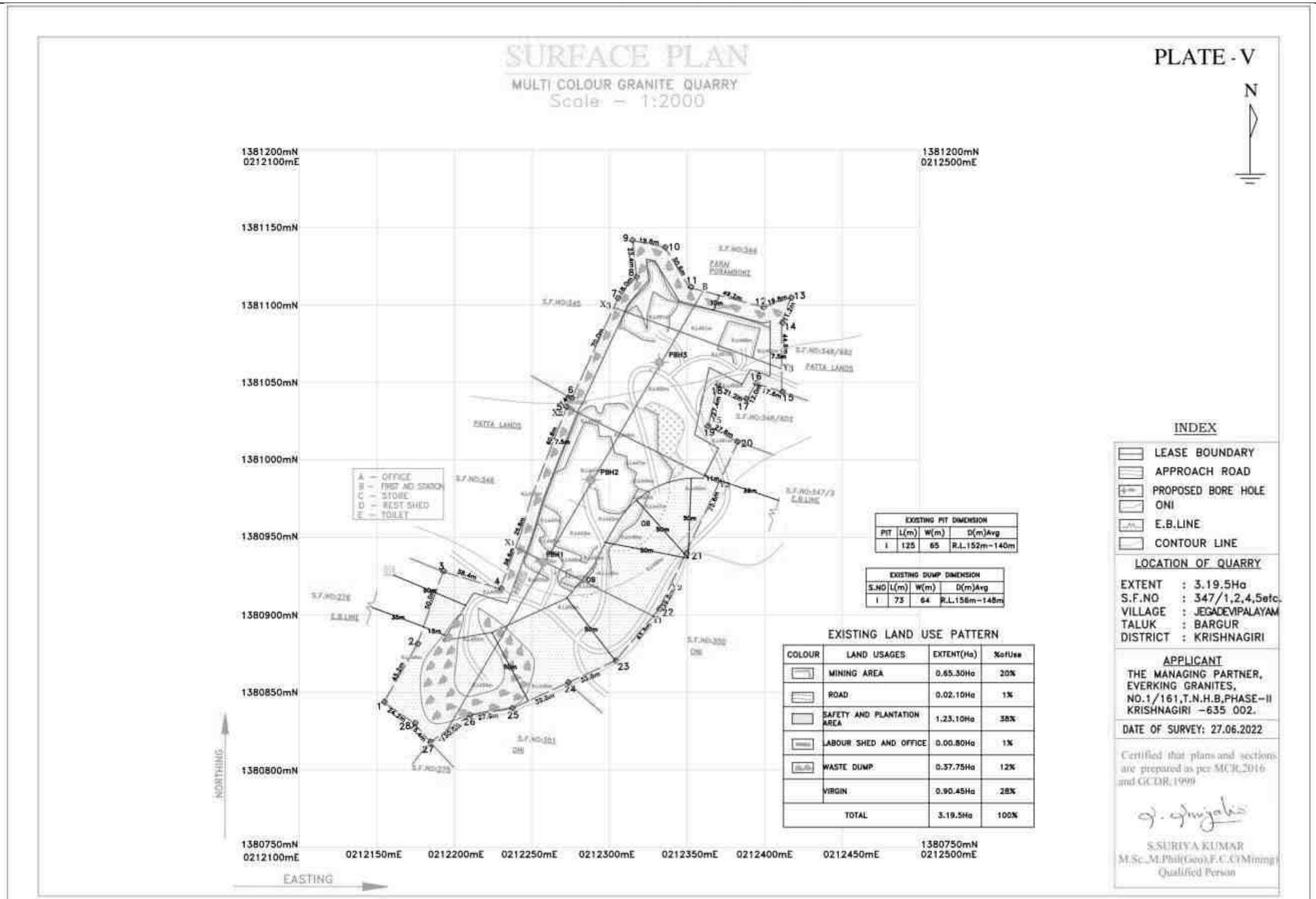


Fig.No.2.3: Surface Plan of Existing Grey Granite Quarry of Tvl. Everking Granites (3.19.5 Ha)

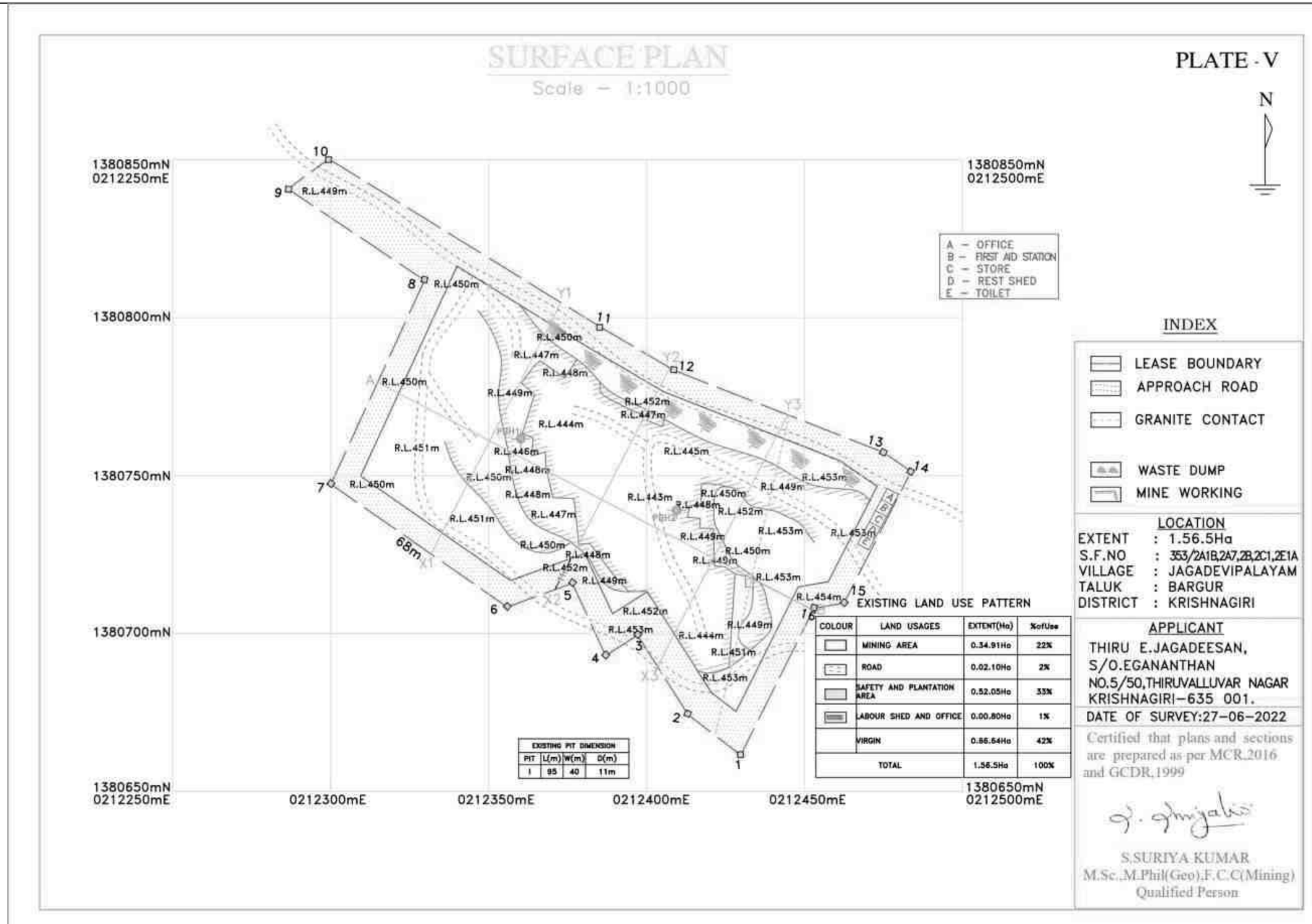


Fig.No.2.4: Surface Plan of Existing Grey Granite Quarry of Thiru.E.Jagadeesan (1.56.5 Ha)

a) Tvl. Everking Granites

b) Thiru.E.Jagadeesan

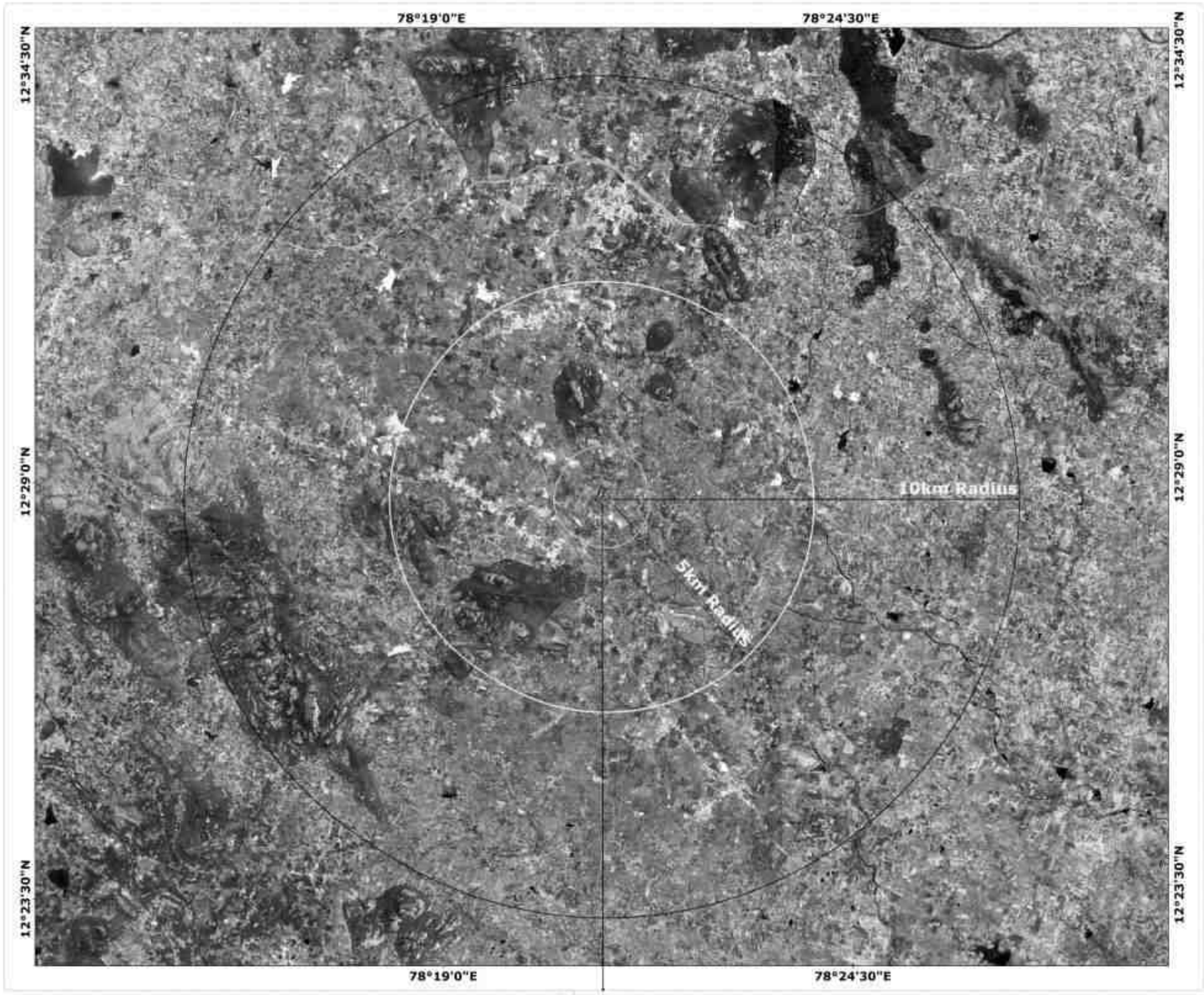
Fig. No. 2.5 Photos showing general view of the lease area.

Table 2.3.: Environmental Settings

<table>
<tr><th colspan="2">Accessibility</th></tr>
<tr><td>Nearest Village</td><td>Bagimanur
• For Lease Area of 3.19.5 Ha – 0.42km – NE
• For Lease Area of 1.56.5- 0.70km – NE</td></tr>
<tr><td>Nearest Settlement</td><td>
<table>
<tr><th>S.no</th><th>Village Name</th><th>Total population as per 2011 census</th><th>Distance with Direction</th></tr>
<tr><td>1</td><td>Jagadevipalayam</td><td>6747</td><td>4.7 km-W</td></tr>
<tr><td>2</td><td>Gangavaram</td><td>3122</td><td>8.6 km-S</td></tr>
<tr><td>3</td><td>Orappam</td><td>3512</td><td>7.4 km-SW</td></tr>
<tr><td>4</td><td>Sigaralapalli</td><td>7765</td><td>6.9km-E</td></tr>
<tr><td>5</td><td>Kandikuppam</td><td>5734</td><td>7.6 km-NW</td></tr>
<tr><td>6</td><td>Gandhinagar</td><td>9114</td><td>4.0km-S</td></tr>
<tr><td>7</td><td>Oppathavadi</td><td>9604</td><td>7.5km-NE</td></tr>
<tr><td>8</td><td>Batlapalli</td><td>3724</td><td>6 km-SE</td></tr>
<tr><td>9</td><td>Pasinayanapalli</td><td>20749</td><td>6.57 km-SE</td></tr>
<tr><td>10</td><td>Kannandahalli</td><td>8562</td><td>9.53 km-S</td></tr>
</table>
</td></tr>
<tr><td>Nearest Town</td><td>Krishnagiri– 15 km - NW</td></tr>
<tr><td>Nearest Roadway</td><td>MDR-157– Kaveripattinam to Badanavadi – 7.5km - S
NH -77 – Krishnagiri to Sinagarapettai – 1.7 km - southwest
SH-131 – Bargur to Tirupattur – 5.4 km – NE
Bagimanur Village road – 150km - E</td></tr>
<tr><td>Nearest Railway station</td><td>Patchur Railway Station– 17.2 km –NE
Tirupattur Railway Station – 22.7km - E</td></tr>
<tr><td>Nearest Airport</td><td>Kampegowda International Airport, Bengaluru –104km – NW</td></tr>
<tr><th colspan="2">Environmental Sensitiveness</th></tr>
<tr><td>Interstate Boundary</td><td>Tamil Nadu –Andhra Pradesh Interstate boundary –16.6km (NE)</td></tr>
<tr><td>Coastal Zone</td><td>Bay of Bengal – 172km – Southeast</td></tr>
<tr><td>Reserve Forest</td><td>1. Thogarapalli R.F. -1.7km – S</td></tr>
</table>

	2. Bargur R.F – 6.9km – NE 3. Varatanapalli – 8.0km – NW 4. Nandibanda R.F – 8.2km – NE 5. Neralakotta R.F – 10.4km - N The proposed projects site does not attract Forest Conservation Act, 1980.
Wildlife sanctuary	Nil within 10km radius. Cauvery Wildlife Sanctuary – 41.2km – W The Proposed projects site does not attract the Wildlife (Protection) Act, 1972.
Water bodies	1. Mattur Stream – 780m – SW 2. A lake – 1.5m – SW 3. A lake near Gettur village – 4.8km – NW 4. A lake near Balinayanapalli village – 7.1km – NW 5. A lake near Simanur Village– 5.4km - NW 6. Bargur River – 4.0km - NE
Defense Installations	Nil within 10km radius
Critically Polluted area	Nil within 10km radius
Seismic zone	Zone-III, Moderate damage risk zone as per BMTPC, Vulnerability atlas Seismic zone of India IS: 1893-2002

Google Image showing Cluster Boundary location around 10km radius



Source: Google Image

Fig No: 2.6 Google Earth Image showing 1km, 5km, 10 km radius around two existing grey granite quarries

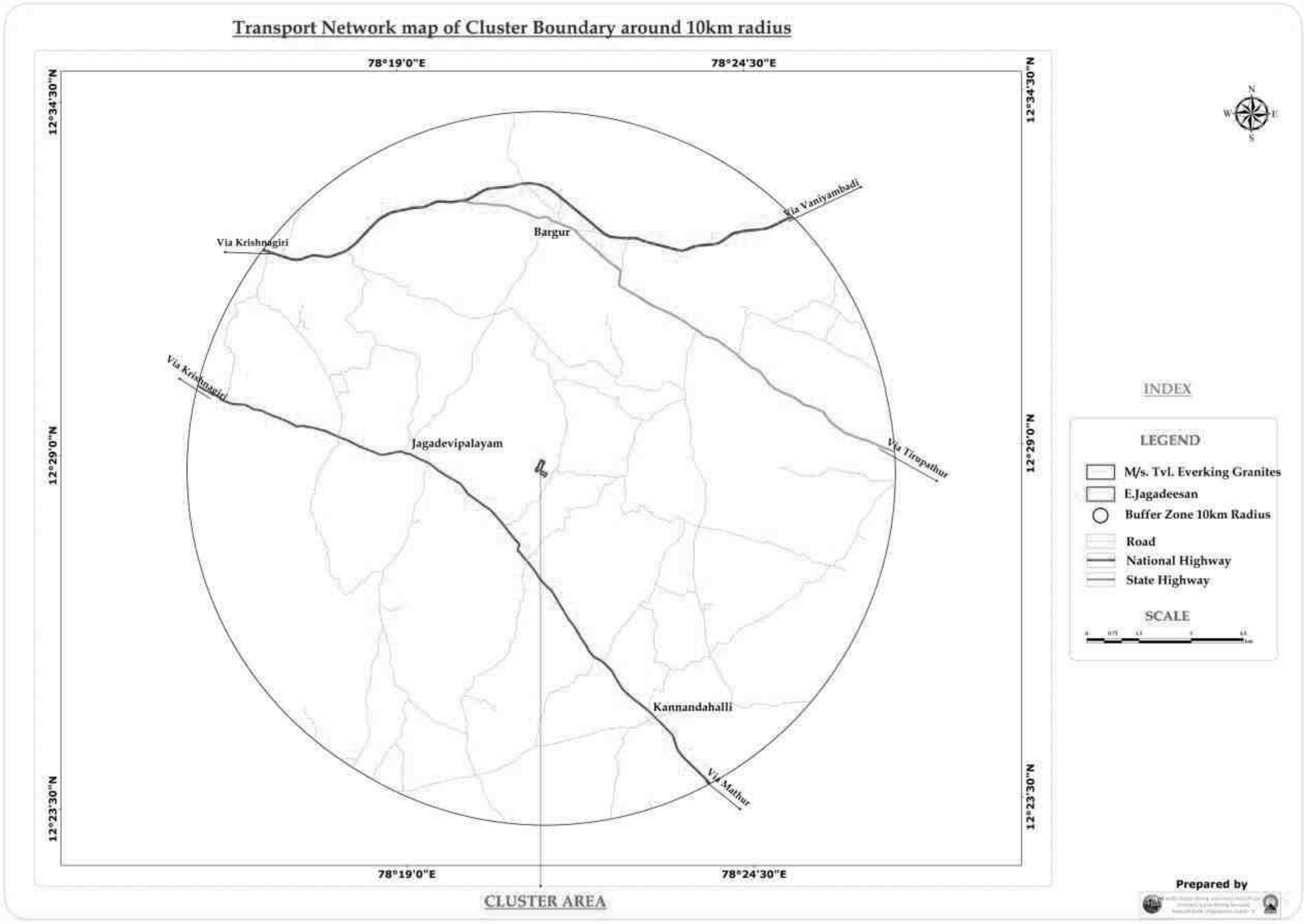


Fig No 2.7: Google Earth Image showing Transport Network of 10 km radius around two existing grey granite quarries

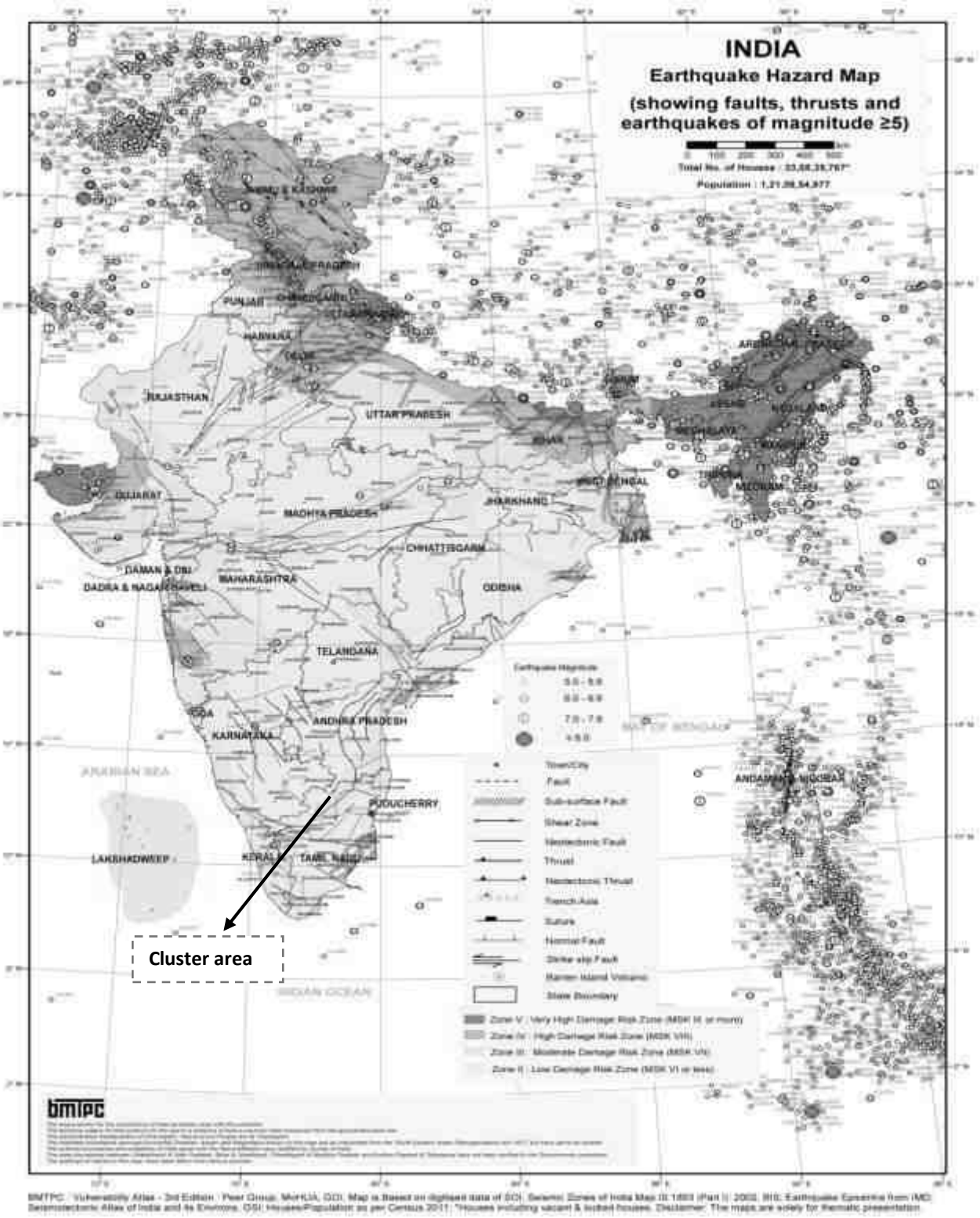


Fig No: 2.8 Earthquake Hazard Map

The cluster area falls under Zone-III, Moderate damage risk zone as per BMTPC, Vulnerability atlas Seismic zone of India IS: 1893-2002.

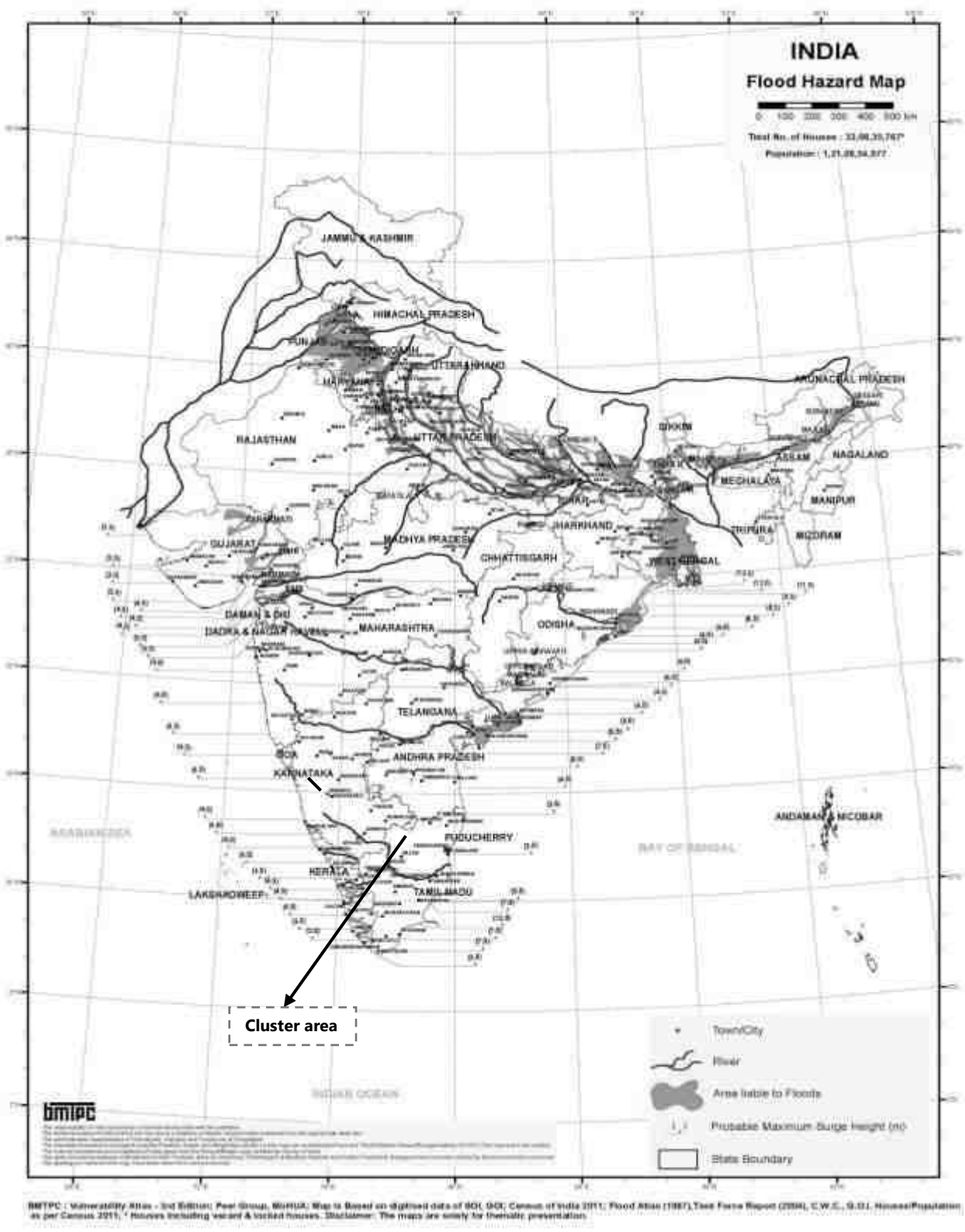


Fig No: 2.9 Flood Hazard Map

The cluster area falls under Probable Maximum Surge Height of 5m.

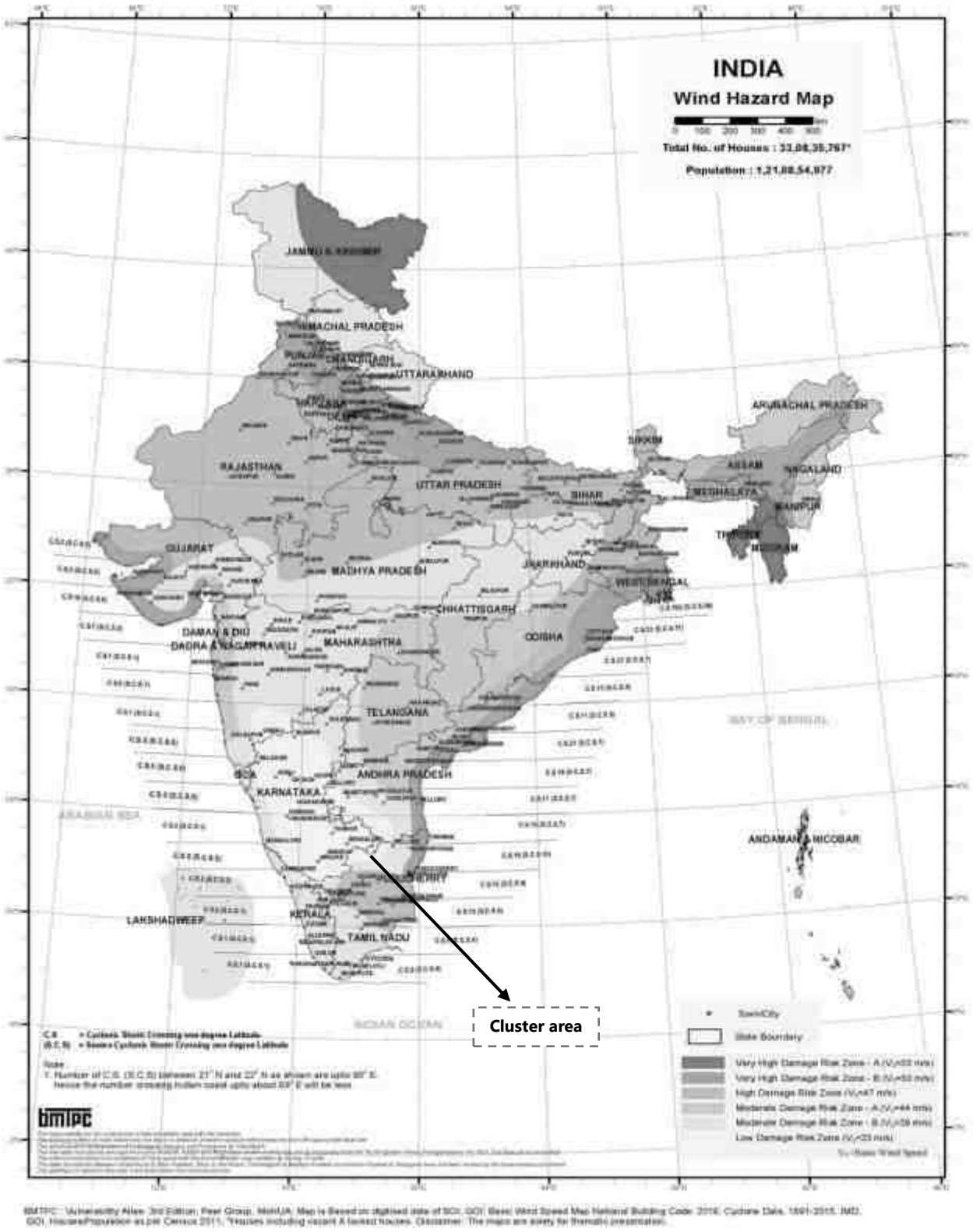


Fig No: 2.10 Winds and Cyclone Hazard Map

The cluster area falls under Low Damage Risk Zone-B (V_b = 33 m/s).

2.4 Size or Magnitude of Operation

Table 2.4: Mining Details

<table>
<tr><th colspan="2">Tvl. Everking Granites (3.19.5 Ha)</th></tr>
<tr><td>Method of Mining</td><td>Open cast Mechanized method of mining</td></tr>
<tr><td>Geological resources</td><td>3,94,694m^3</td></tr>
<tr><td>Mineable reserves</td><td>2,12,420m^3</td></tr>
<tr><td>Run of Mine(ROM)</td><td>100413m^3 for plan period (2023-24 to 2027-28)</td></tr>
<tr><td>Production (30%)</td><td>30,124m^3 for five years or 6025 m^3/annum(Avg)</td></tr>
<tr><td>Reject (70%)</td><td>70289 m^3</td></tr>
<tr><td>Top soil</td><td>1278m^3 for plan period (2023-24 to 2027-28)</td></tr>
<tr><td>Weathered Rock</td><td>9647m^3 for plan period (2023-24 to 2027-28)</td></tr>
<tr><td>Ore: Waste ratio</td><td>1: 2.69</td></tr>
<tr><td>Depth of Mining</td><td>30m bgl</td></tr>
<tr><td>Water Table</td><td>40 m bgl</td></tr>
<tr><td>Road design</td><td>1: 10 inside the pit and ramp
1:16 for transport</td></tr>
<tr><td>Overall Pit Slope</td><td>45°</td></tr>
<tr><td>Period of Lease</td><td>20 years (28.05.2018 to 27.05.2038)</td></tr>
<tr><td>Existing pit dimension</td><td><table><tr><th>Pit</th><th>L(m)</th><th>W(m)</th><th>Max.D(m)</th></tr><tr><td>I</td><td>125m</td><td>65m</td><td>12m (RL 452 – 440)</td></tr></table></td></tr>
<tr><td>Existing dump dimension</td><td><table><tr><th>S.No</th><th>L(m)</th><th>W(m)</th><th>Depth in (m)</th></tr><tr><td>I</td><td>73m</td><td>64m</td><td>8m (RL 456-448)</td></tr></table></td></tr>
<tr><td>Project Cost</td><td>Rs 84.0 Lakhs</td></tr>
<tr><td>EMP Cost</td><td>Rs 7.25 lakhs</td></tr>
<tr><td>CER Cost</td><td>Rs.1.68 lakhs</td></tr>
<tr><th colspan="2">Thiru.E.Jagadeesan (1.56.5 Ha)</th></tr>
<tr><td>Method of Mining</td><td>Open cast Mechanized method of mining</td></tr>
<tr><td>Geological resources</td><td>203274m^3</td></tr>
<tr><td>Mineable reserves</td><td>90994m^3</td></tr>
<tr><td>Run of Mine(ROM)</td><td>51764m^3 for plan period (2023-24 to 2027-28)</td></tr>
<tr><td>Production (30%)</td><td>15,529m^3 for five years or 3106 m^3/annum(Avg)</td></tr>
<tr><td>Reject (70%)</td><td>36235 m^3</td></tr>
<tr><td>Top soil</td><td>1131m^3 for plan period (2023-24 to 2027-28)</td></tr>
<tr><td>Weathered Rock</td><td>4484m^3 for plan period (2023-24 to 2027-28)</td></tr>
<tr><td>Ore: Waste ratio</td><td>1: 2.7</td></tr>
<tr><td>Depth of Mining</td><td>36m bgl.</td></tr>
<tr><td>Water Table</td><td>40 m bgl</td></tr>
</table>

Road design	1: 10 inside the pit and ramp 1:16 for transport
Overall Pit Slope	45°
Period of Lease	20 years (09.11.2018 to 08.11.2038)
Existing pit dimension	**Pit** | **L(m)** | **W(m)** | **Depth in (m)** I | 95m | 40m | 11m
Project Cost	Rs 78.0 Lakhs
EMP Cost	Rs 9.5 lakhs
CER Cost	Rs.1.56 lakhs

2.5 Proposed schedule for approval and implementation

The proposed activity will be commenced only after obtaining Environment Clearance from SEAC/SEIAA, Tamil Nadu and CTE/CTO from TNPCB and other necessary clearance from concerned departments.

2.6 Technology and process description

2.6.1 Regional Geology

Krishnagiri District is comprised of Archaen peninsular gneisses such as Charnockites, Hornblende gneisses, Biotite gneisses, and dolerites migmatites are intruded by younger formations like pegmatite and quartz veins. The dolerite dyke is intruded into the pre-existing country rock namely Biotitic Gneisses and Schist and trending 1-2kms from West to East direction and dipping almost vertical. The width of dyke is about 30m.

The order of superposition of geological sequence are given as under,

Description		**Age**
Top soil – Morum (2m Thick)	-	Recent age
Dolerite dyke	-	Recent age
Peninsular gneisses	-	Archaen age
Biotite gneisses	-	Archaen complex

The Biotite gneisses are oldest rock into which the younger dolerite dykes intruded later.

2.6.2 Exploration

The Systematic geological mapping and demarcation of the commercially viable granite deposit has been prepared with relevant structural features such as Contact of the country rock with commercial grey granite deposit. Different joint pattern and their pattern of repetition etc. have been marked. Based on the features, estimation of geological and mineable reserves has been arrived having considered the market potentiality. Three more bore holes in lease area of j 3.19.5 Ha and two bore hole in lease area of 1.56.5 Ha as per plate-III is proposed to be carried out during the next Scheme period.

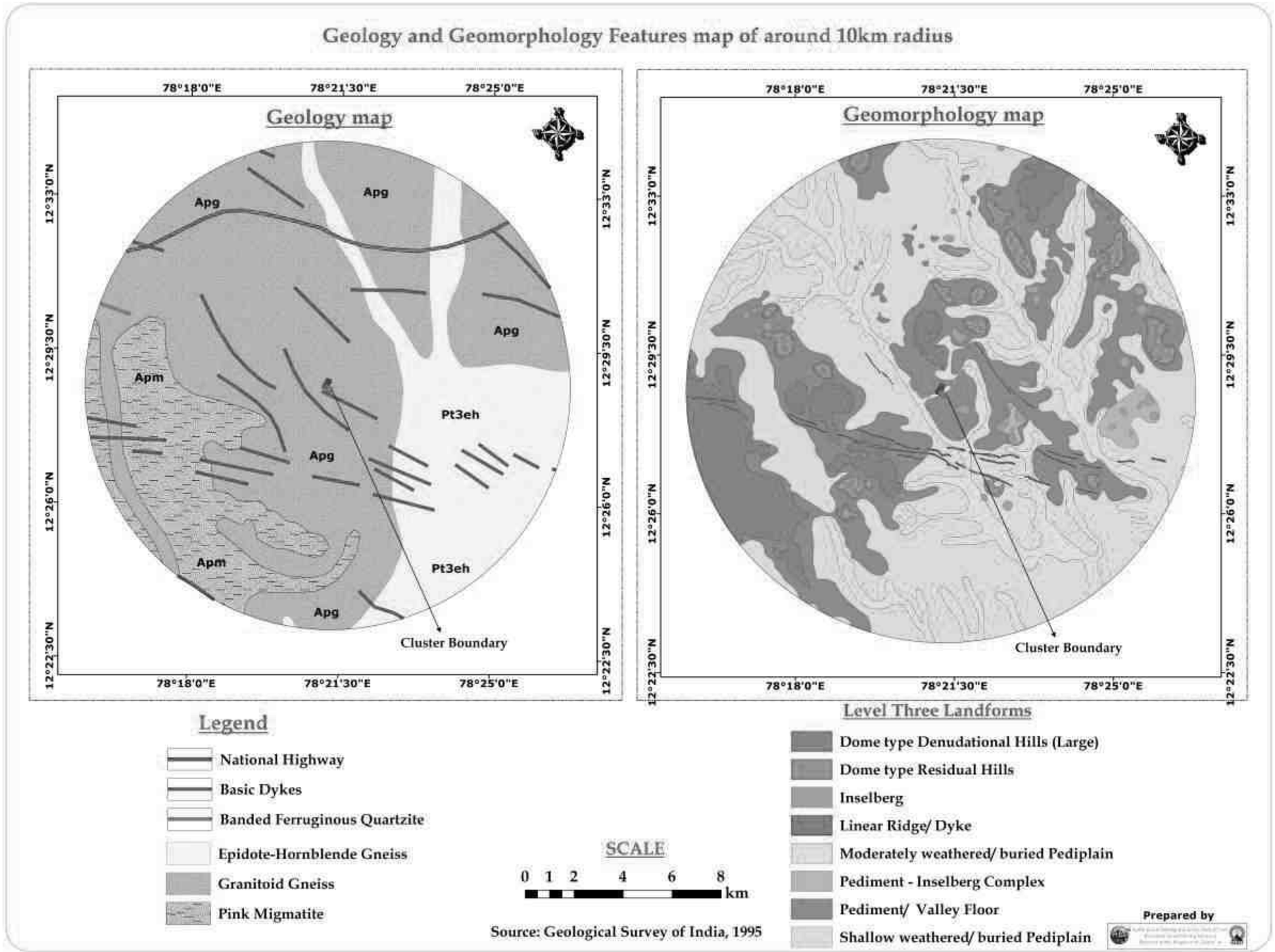


Fig. No: 2.11: Regional Geology & Geomorphology Map

2.6.3 Method of Mining

a) Open cast working:

The quarry operation will be carried out by open cast mechanized method of mining. Jack hammer drilling and blasting will be adopted to make perfect pre-determined crack to release the block from the parent rock. Hydraulic excavators will be engaged for loading the rejects, top soil and weathered rock and wire saw will be adopted for cutting the rocks. Wire saw cutting is adopted below second bench to recover more granite blocks to increase the rate of recovery. The top soil is found up to 1m depth from surface in the lease area of 3.19.5 Ha and 1.56.5 Ha. The recovery factor is taken as 30% and it may increase further at deeper levels.

Manpower will be engaged for drilling shot-holes, line drilling, smooth blasting, Jet burner operation, dressing of granite blocks, cutting and removal of small amount waste or rejects and support service labors for operation of machineries. The materials required for manual workings are listed as under,

1. Drill rods - 450mm, 800mm, 1650mm, 3900mm and up to 7200mm.
2. Steel alloy chains of sufficient lengths with dia. of 12 - 18mm with "D' shackles.
3. Rubber hose and clamps
4. Feather and wedges of 15 cm and 30 cm sizes utilized for splitting of blocks.
5. Crow bars of 1500 - 1800mm lengths.
6. Spades, Sludge hammers, Iron Pans and chisels.

2.6.4 Extent of Mechanization

The following machinery is proposed to be exclusively for the development and production work at this quarry.

i) Drilling equipment:

Drilling of shot-holes will be carried out using compressor and Jack hammer combination. Depth of holes shall be 2.5m for 3m bench height. The spacing shall be 30 - 40cms and burden from the preface depends upon the size of block. However, it is preferred to have 1 - 2m burden from the preface for effective pulling of blocks.

In case of burden in excess of 1.5m the spacing should be adjusted smaller, less than 30cms. To achieve a correct blasting geometry certain amount of trial blast is pre-requisite to affect a perfect pre-determined crack to release the block from the parent rock.

Table No 2.5: Details of drilling equipment

Tvl. Everking Granites (3.19.5 Ha)						
Type	**Nos**	**Dia.of hole**	**Bucket/ Capacity (m^3)**	**Make**	**Motive Power**	**H.P**
Jack Hammer	6	32mm	Hand held	Atlas copco	Diesel	-
Compressor	1	7.5 Kgs/cm^2	-	Atlas copco 2010	Diesel	115
DTH Drills	1	100mm	-	Kala	Diesel	30
Generator	1	-	-	TATA-125Kv	Diesel	-
Thiru.E.Jagadeesan (1.56.5 Ha)						
Type	**Nos**	**Dia.of hole**	**Bucket/ Capacity (m^3)**	**Make**	**Motive Power**	**H.P**
Jack Hammer	2	32mm	Hand held	Atlas copco	Diesel	60
Compressor	2	7.5 Kgs/ Kg	XAT 266	Atlas Copco P 600 (IR)	Diesel	120
Gen set	1	---	---	Powerica	--	CP125 D5P
DTH Bore Drill	1	100mm	----	Sandvik	Diesel	120

ii) Loading Equipment: Loading of waste and granite rejects shall be done by hydraulic excavator into tippers for clearing of waste and rejects from the working place periodically. One hydraulic excavator with 2.20m^3 bucket capacity and one hydraulic excavator with 1.7 m^3 bucket capacity are engaged for clearing of wastes in the lease area of Tvl. Everking Granites and Thiru.E.Jagadeesan respectively.

Table No-2.6: Details of loading equipment

Tvl. Everking Granites (3.19.5 Ha)					
Type	**Nos**	**Bucket Capacity (m^3)**	**Make**	**Motive Power**	**H.P**
Hydraulic Excavator	1	2.2 m^3	Tata Hitachi 370EX	Diesel	370
Thiru.E.Jagadeesan (1.56.5 Ha)					
Type	**Nos**	**Bucket Capacity (m^3)**	**Make**	**Motive Power**	**H.P**
Hydraulic excavator	1	1.70 m^3	TATA 370	Diesel	180

iii) Transportation:

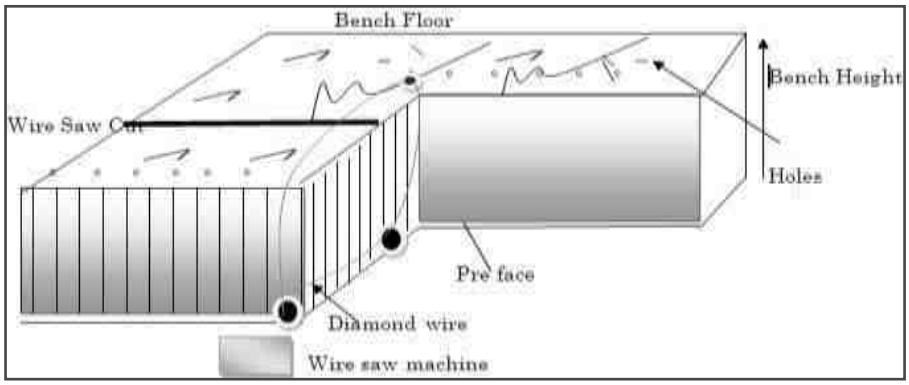
One tipper of 20MT capacity (3.19.5 Ha) and one tipper of 15MT (1.56.5 Ha) capacity are engaged for internal transport of rejects from the working face to the dumps. Details of transporting tippers are tabulated below,

Table No-2.7: Details of transportation vehicles

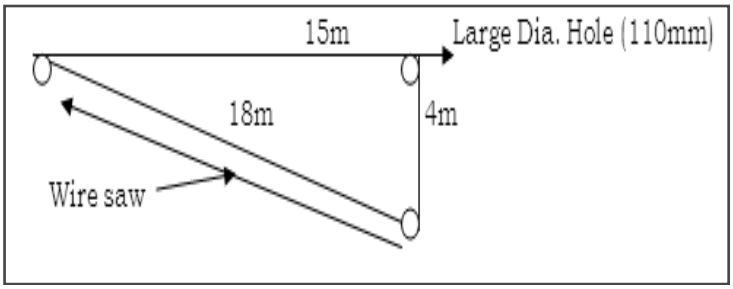
Tvl. Everking Granites (3.19.5 Ha)					
Type	**Nos**	**Size/Capacity**	**Make**	**Motive Power**	**H.P**
Tipper	1	20M.T	MAN	Diesel	180
Thiru.E.Jagadeesan (1.56.5 Ha)					
Type	**Nos**	**Size/Capacity**	**Make**	**Motive Power**	**H.P**
Tipper	1	15M.T	Bharat Benz	Diesel	110

iv) Diamond wire saw cutting

Diamond Wire saw cutting is an eco-friendly method of quarrying with high rate of recovery, thereby the conservation aspects of GCDR, 1999 is perfectly fulfilled.



PLAN VIEW FOR INITIAL WIRE –CUT:



Details of wire saw cutting machine is given as under

Table No 2.8 Details of wire saw cutting machine

Tvl. Everking Granites (3.19.5 Ha)					
Type	**Nos.**	**Capacity (m^3)**	**Make**	**Motive Power**	**H.P.**
Wire saw Machine	1	-	Optima	Diesel	60
Thiru.E.Jagadeesan (1.56.5 Ha)					
Type	**Nos.**	**Capacity (m^3)**	**Make**	**Motive Power**	**H.P.**
Wire saw Machine	2	Port Diamond wire	Stone Tech	Electric Power	60 each

v) Blasting Pattern

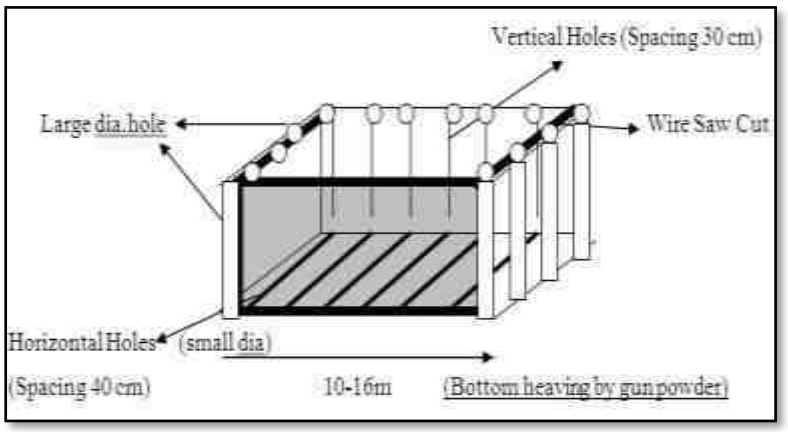
Blasting: A controlled Blasting technique is adopted to open a pre-determined crack of the block from the parent body. Shot-hole with 32-40mm dia which are drilled by line drilling and Jack hammers at a close spaced interval of 30-40cms will be initiated suitably with any one or more of the following methods,

a) Pre-splitting
b) Cushing blasting with low strength and very low dia Cartridges axial priming or standard dia cartridge with intermittent stemming materials.
c) Water impulsion with Detonating cords of sufficient power, preferably 10gms per meter to develop cracks along the line of drilling,

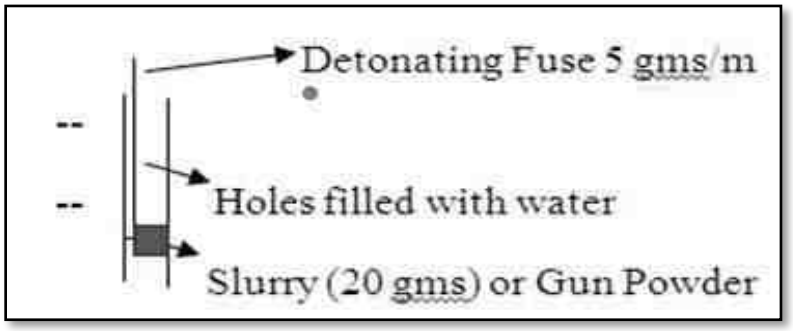
a)) BROAD BLASTING PARAMETER:

i. Dia. of the hole = 32 - 40 mm
ii. Spacing = 30cms
iii. Depth = 2.5 m
iv. Burden = Min =1m; Max = 2m
v. Charge per Hole = D.cord with water or 70gms of gun powder

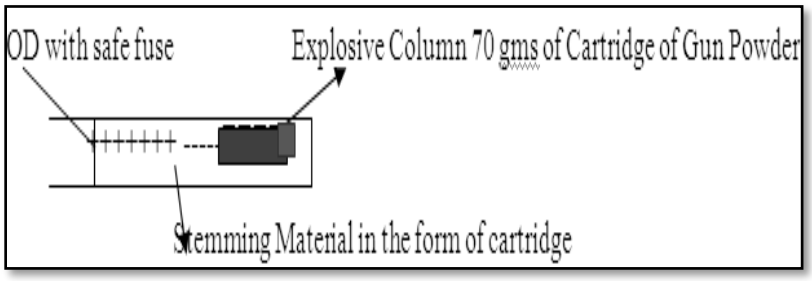
Wire Saw Cut and Drilling Pattern



Charging of Vertical Holes



Charging of Horizontal Holes



In watery holes, the detonating fuse is directly used and water act as a cushion to move the blocks and form a line of crack. In other cases, small vibration created by low explosives open the artificial shear plane \tensional crack formed by a line of drilling. Sometimes wedges are used to cut the major blocks into smaller sizes after drilling of holes to a depth of 30-40cms. Then the blocks are dressed to desire sizes.

b) TYPE OF EXPLOSIVES:

Common explosives used to develop a line of crack along the line of drilling are,

i) Detonating Fuse or Cord with 5-10gms of Explosives Per meter,
ii) Low explosives like Gun powder or 70gms of slurry cartridges,
iii) Ordinary Detonator, class- 6
iv) Safety fuse, class -6.

c) Powder factor: The Powder factor for waste rock development shall be $2m^3$ or 7 tonnes per Kg. of explosives.

d) STORAGE OF EXPLOSIVES

The applicant is advised to store the explosives as per the Indian Explosives Act, 1958. The explosives to be used in mines being a small quantity the District collector may be approached to keep the stocks not exceeding 5 kgs at time or any other quantity permitted by the concerned authorities in a portable magazine of S & B types.

2.7 Land Use Pattern of the Core Zone

Depth of mining is estimated as 30m bgl for Tvl.Everking Granites(3.19.5 Ha) and 35m for Thiru. Thiru.E.Jagadeesan(1.56.5 Ha) based on the working pits of the lease quarry. The Present and proposed land use pattern is given as under, at the time of closure of mine the pit will be backfilled.

Table No 2.9: Computation of existing and proposed land use pattern

Tvl. Everking Granites (3.19.5 Ha)					
S. No	**Head**	**Area put on use at start of plan (Ha) (Present)**	**% of use**	**Total Area used at the end of 5 years plan (Ha)**	**% of use**
i)	Area under mining	0.65.30	20%	0.88.50	28%
ii)	Road	0.37.75	12%	0.61.98	19%
iii)	Safety and Plantation area	0.02.10	1%	0.03.10	1%
iv)	Labour shed and office	1.23.10	38%	0.98.87	31%
v)	Waste dump	0.00.80	1%	0.00.80	1%
vi)	Virgin area	0.90.45	28%	0.66.25	20%
Total		**3.19.5**	**100**	**3.19.5**	**100**
Thiru.E.Jagadeesan(1.56.5 Ha)					
S. No	**Head**	**Area put on use at start of plan (Ha) (Present)**	**% of use**	**Total Area used at the end of 5 years plan (Ha)**	**% of use**
i)	Area under mining	0.34.91	22%	0.57.00	36%
ii)	Road	0.02.10	2%	0.02.10	2%
iii)	Safety and Plantation area	0.52.05	33%	0.52.05	33%
iv)	Labour shed and office	0.00.80	1%	0.00.80	1%
v)	Waste dump	---	---	0.10.98	7%
vi)	Virgin area	0.66.64	42%	0.33.57	21%
Total		**1.56.5**	**100**	**1.56.5**	**100**

2.8 ESTIMATION OF RESERVES

2.8.1 Tvl.Everking Granites (3.19.5 Ha)

a) Geological resources and reserves

The geological resources is estimated by cross sectional method is as **394694m^3** of granite up to a depth of 30m from the surface, having considered the depth of mining, recovery, safety barriers etc. A detail of estimation of geological resources and reserves is given in the Table no –2.10.

TABLE NO-2.10: Computation of Geological Resources and Reserves

SECTION		L (m)	W(m)	D(m)	Volume	Recovery @30%	Reject @70%
AB-X1Y1	UNDER SAFETY	78	57.5	18	80730	24219	56511
	MINEABLE	53	23	2	2438	731	1707
		84	32	4	10752	3226	7526
		78	20	6	9360	2808	6552
		72	8	6	3456	1037	2419
	UNDER BENCHES	6	9	6	324	97	227
		12	21	6	1512	454	1058
		18	33	6	3564	1069	2495
AB-X2Y2	UNDER SAFETY	72	17.5	24	30240	9072	21168
	MINEABLE	29	81	6	14094	4228	9866
		72	69	6	29808	8942	20866
		72	57	6	24624	7387	17237
		72	45	6	19440	5832	13608
	UNDER BENCHES	72	10	6	4320	1296	3024
		72	21	6	9072	2722	6350
		72	33	6	14256	4277	9979
		72	45	6	19440	5832	13608
AB-X3Y3	UNDER SAFETY	10	15	24	3600	1080	2520
	MINEABLE	68	86	6	35088	10526	24562
		62	74	6	27528	8258	19270
		56	62	6	20832	6250	14582
		50	50	6	15000	4500	10500
	UNDER BENCHES	8	14	6	672	202	470
		14	26	6	2184	655	1529
		20	38	6	4560	1368	3192
		26	50	6	7800	2340	5460
TOTAL					**394694**	**118408**	**276286**

Note:

Total volume of Geological resources up to a depth of 30m = 394694m^3

Recoverable Geological reserves @30% " = 118408m^3

Total Granite Reject @ 70% " = 276286m^3

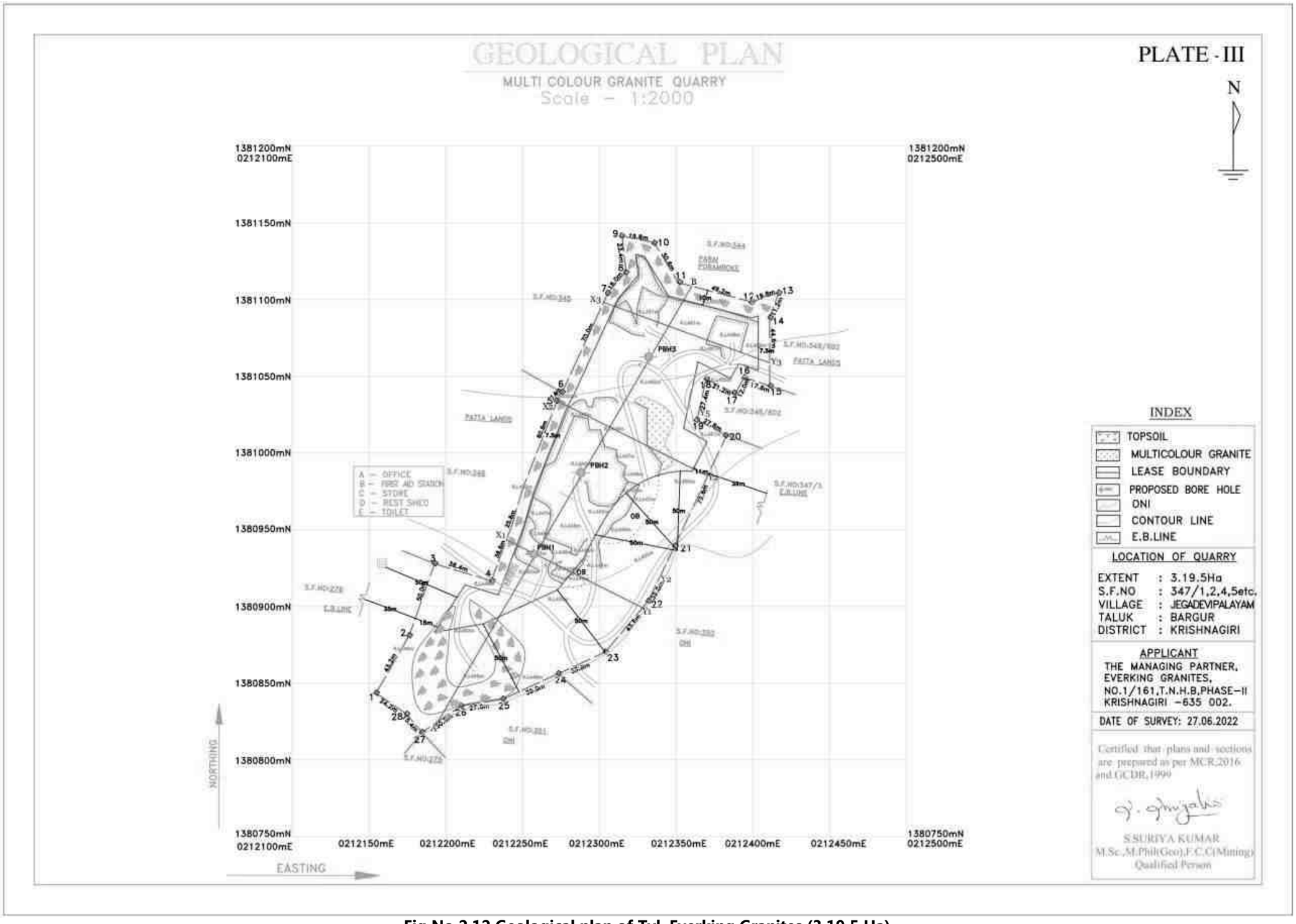


Fig No 2.12 Geological plan of Tvl. Everking Granites (3.19.5 Ha)

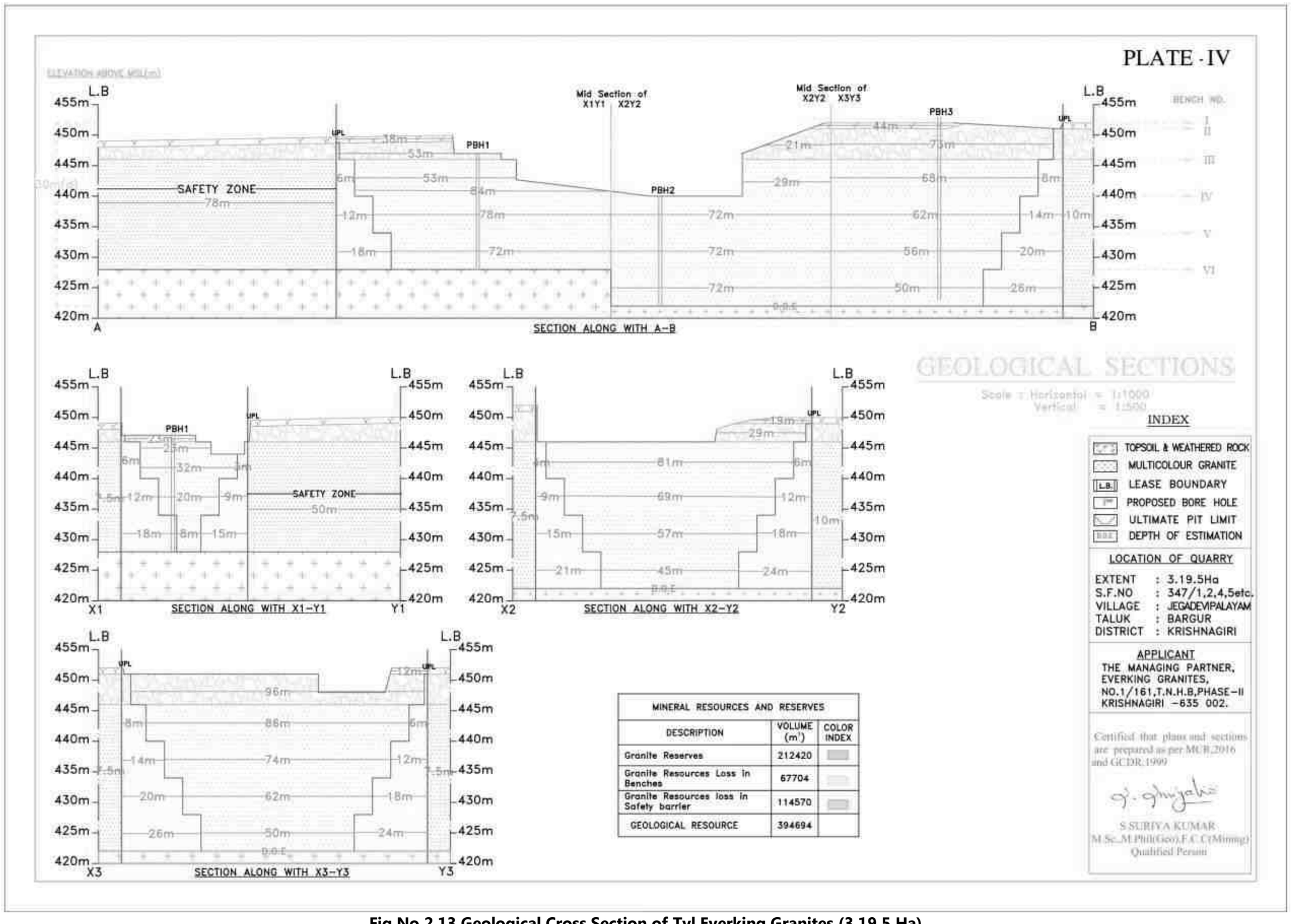


Fig No 2.13 Geological Cross Section of Tvl.Everking Granites (3.19.5 Ha)

b) MINEABLE/RECOVERABLE RESERVES:

The mineable reserves is estimated by cross-sectional method having considered the recovery factor, depth of mining, safety barriers etc., The mineable reserves is estimated as 212420m^3 recovery based on exploration results. Details of estimation of mineable reserve are given in Table no. 2.11.

TABLE NO-2.11: Computation of Mineable/Recoverable Reserves

SECTION	BENCH	L (m)	W(m)	D(m)	Volume(m^3)	RESERVE(m^3) @30%	Reject @70%
AB-X1Y1	III	53	23	2	2438	731	1707
		84	32	4	10752	3226	7526
	IV	78	20	6	9360	2808	6552
	V	72	8	6	3456	1037	2419
AB-X2Y2	III	29	81	6	14094	4228	9866
	IV	72	69	6	29808	8942	20866
	V	72	57	6	24624	7387	17237
	VI	72	45	6	19440	5832	13608
AB-X3Y3	III	68	86	6	35088	10526	24562
	IV	62	74	6	27528	8258	19270
	V	56	62	6	20832	6250	14582
	VI	50	50	6	15000	4500	10500
TOTAL					**212420**	**63726**	**148694**

DEVELOPMENT TOPSOIL

AB-X1Y1	I	38	30	1	1140		1140
AB-X2Y2	I	23	19	1	437		437
AB-X3Y3	I	44	12	1	528		528
TOTAL					**2105**		**2105**

WEATHERED ROCK

AB-X1Y1	II	53	23	2	2438		2438
AB-X2Y2	II	21	29	5	3045		3045
AB-X3Y3	II	73	96	5	35040		35040
TOTAL					**40523**		**40523**
GRAND TOTAL					**255048**	**63726**	**191322**

Note:

Total volume of ROM up to a depth of 30 m = 212420m^3
Total Mineable reserves @30% = 63726m^3
Reject of granite @70% = 148694m^3
Total Waste (Weathered rock) = 40523m^3

Total Topsoil = 2105m^3

Total Waste Ratio (2105m^3+40523m^3+148694m^3) = 191322/63726

= 1:3.0

2.8.2 Thiru.E.Jagadeesan (1.56.5 Ha)

a. Geological resources and reserves

The geological resources is estimated by cross sectional method is as **203274m^3** of granite up to a depth of 36m from the surface, having considered the depth of mining, recovery, safety barriers etc. A detail of estimation of geological resources and reserves is given in the Table no –2.12.

TABLE NO-2.12: Computation of Geological Resources and Reserves

SECTION		L (m)	W(m)	D(m)	Volume	Recovery @30%	Reject @70%
AB-X1Y1	Under safety	8	16	30	3600	1080	2520
	Mineable	49	63	6	18522	5557	12965
		43	51	6	13158	3947	9211
		37	39	6	8658	2597	6061
		31	27	6	5022	1507	3515
		25	15	6	2250	675	1575
	Under benches	1	6	2	12	4	8
		4	12	6	288	86	202
		10	24	6	1440	432	1008
		16	36	6	3456	1037	2419
		22	48	6	6336	1901	4435
		28	60	6	10080	3024	7056
AB-X2Y2	Under safety	40	19	30	22800	6840	15960
	Mineable	40	40	2	3200	960	2240
		40	36	6	8640	2592	6048
		40	24	6	5760	1728	4032
		40	12	6	2880	864	2016
	Under benches	40	20	2	1600	480	1120
		40	25	6	6000	1800	4200
		40	37	6	8880	2664	6216
		40	49	6	11760	3528	8232
AB-X3Y3	Under safety	34	20	30	20400	6120	14280
	Mineable	13	30	4	1560	468	1092
		34	55	2	3740	1122	2618

		36	43	6	9288	2786	6502
		30	31	6	5580	1674	3906
		24	19	6	2736	821	1915
	Under benches	34	6	1	204	61	143
		34	7	4	952	286	666
		34	16	6	3264	979	2285
		34	28	6	5712	1714	3998
		6	40	6	1440	432	1008
		13	52	6	4056	1217	2839
TOTAL					**203274**	**60982**	**142292**

Note:

Total volume of Geological resources up to a depth of 36m = 203274m^3

Recoverable Geological reserves @30% " = 60982m^3

Total Granite Reject @ 70% " = 142292m^3

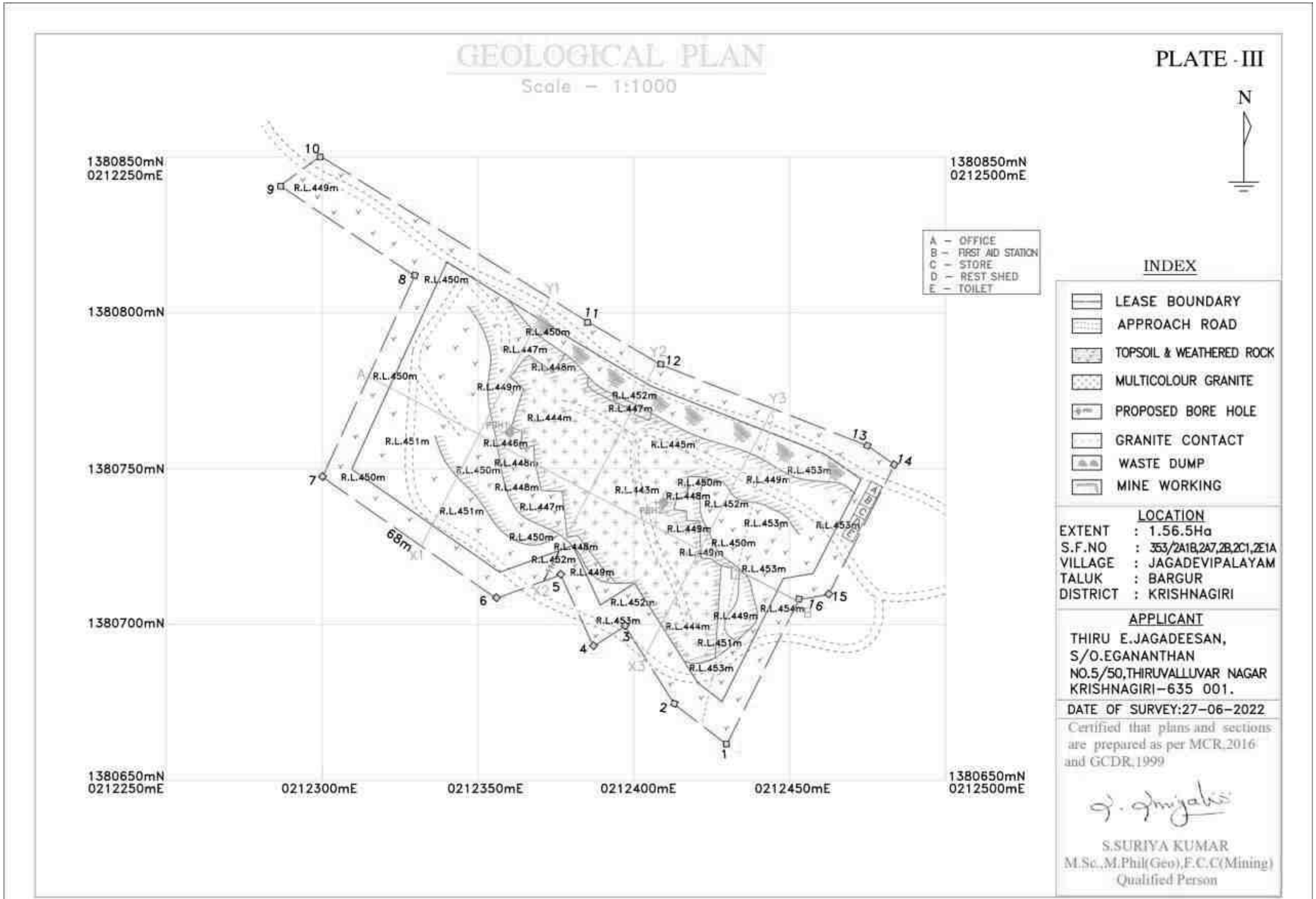
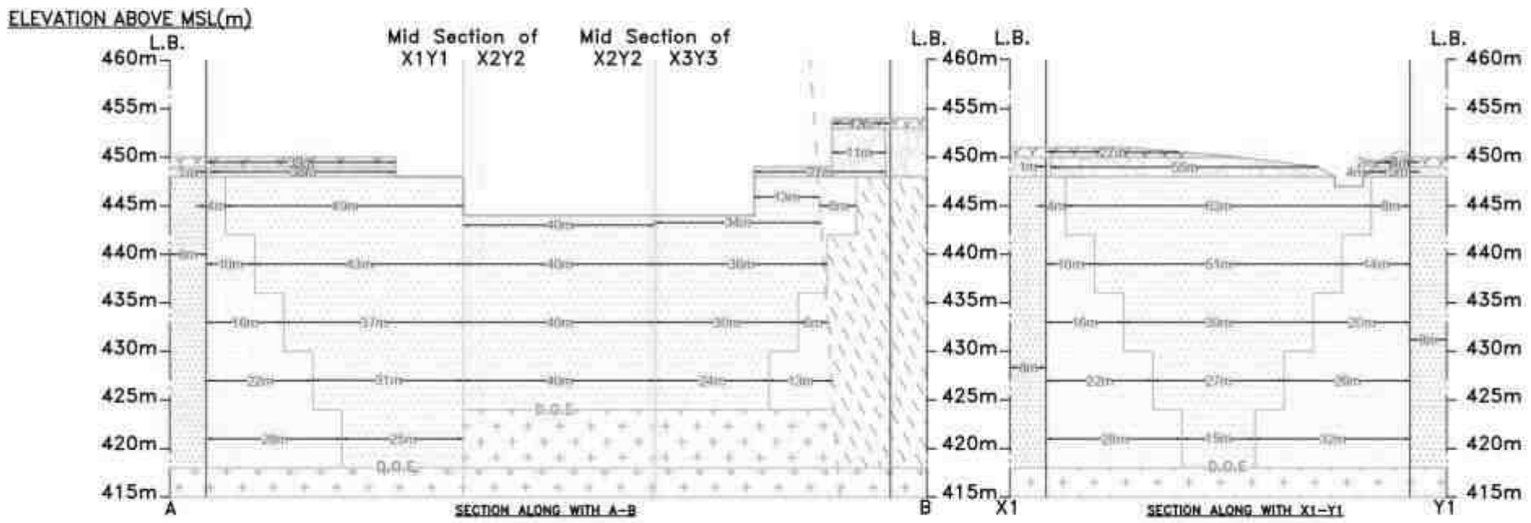


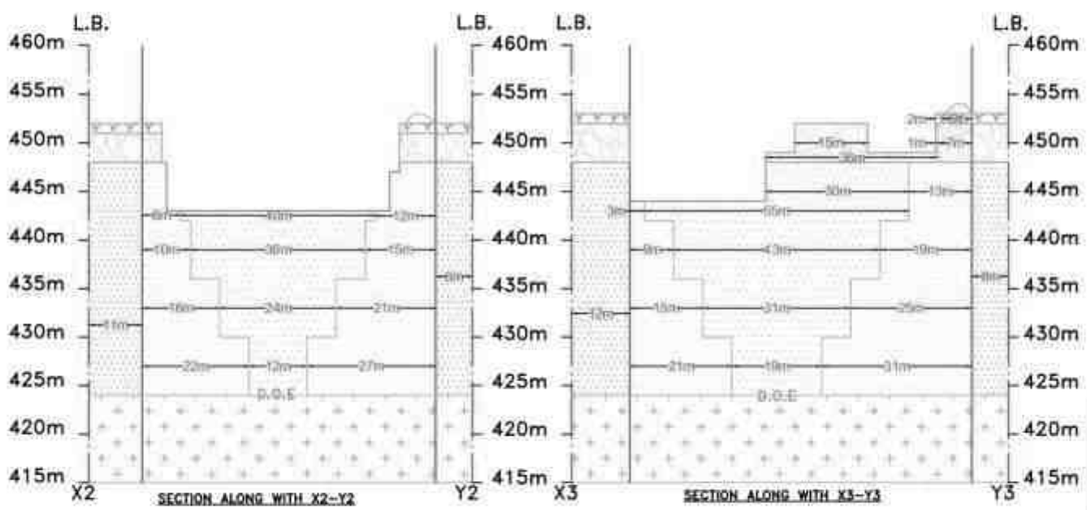
Fig No 2.14 Geological plan of Thiru.E.Jagadeesan (1.56.5 Ha)

GEOLOGICAL SECTIONS

PLATE - IV

Scale : Horizontal = 1:1000
Vertical = 1:500





INDEX

- LEASE BOUNDARY
- TOPSOIL & WEATHERED ROCK
- ULTIMATE PIT LIMIT
- MULTICOLOUR GRANITE
- GRANITE CONTACT
- DEPTH OF ESTIMATION

LOCATION

EXTENT : 1.56.5Ha
S.F.NO : 353/2A1B,2A7,2B,2C1,2E1A
VILLAGE : JAGADEVIPALAYAM
TALUK : BARGUR
DISTRICT : KRISHNAGIRI

APPLICANT

THIRU E.JAGADEESAN,
S/O.EGANANTHAN
NO.5/50,THIRUVALLUVAR NAGAR
KRISHNAGIRI–635 001.

DATE OF SURVEY:27–06–2022

Certified that plans and sections are prepared as per MCR,2016 and GCDR,1999

S.SURIYA KUMAR
M.Sc.,M.Phil(Geo),F.C.C(Mining)
Qualified Person

MINERAL RESOURCES AND RESERVES

DESCRIPTION	QUANTITY (m^3)	COLOR INDEX
Mineral Reserves	27298	
Mineral Resources Loss in Benches	19644	
Mineral Resources loss in 7.5m safety barrier	14040	
GEOLOGICAL RESOURCE	60982	

Fig No 2.15 Geological Cross Section of Thiru E.Jagadeesan (1.56.5 Ha) (Plate – IV)

b) MINEABLE/RECOVERABLE RESERVES:

The mineable\ recoverable reserves is estimated by cross-sectional method having considered the recovery factor, depth of mining, safety barriers etc., The mineable reserves is estimated as **90944m^3** of granite to a depth of mining 36m from the surface. Details of estimation of mineable reserves are given in Table no. 2.13

TABLE NO-2.13: Computation of Mineable/Recoverable Reserves

SECTION	L (m)	W (m)	D (m)	Volume (m^3)	Recovery @30%	Reject @70%
AB-X1Y1	49	63	6	18522	5557	12965
	43	51	6	13158	3947	9211
	37	39	6	8658	2597	6061
	31	27	6	5022	1507	3515
	25	15	6	2250	675	1575
AB-X2Y2	40	40	2	3200	960	2240
	40	36	6	8640	2592	6048
	40	24	6	5760	1728	4032
	40	12	6	2880	864	2016
AB-X3Y3	13	30	4	1560	468	1092
	34	55	2	3740	1122	2618
	36	43	6	9288	2786	6502
	30	31	6	5580	1674	3906
	24	19	6	2736	821	1915
TOTAL				**90994**	**27298**	**63696**
SIDE BURDEN (Waste)						
AB-X3Y3	8	62	6	2976		2976
TOTAL				**2976**		**2976**
DEVELOPMENT TOPSOIL						
AB-X1Y1	39	29	1	1131		1131
AB-X3Y3	12	2	1	24		24
TOTAL				**1155**		**1155**
WEATHERED ROCK						
AB-X1Y1	38	59	2	4484		4484
AB-X3Y3	11	16	4	704		704
	27	36	1	972		972
TOTAL				**6160**	**27298**	**6160**

Total volume of ROM up to a depth of 36m	=	90994m^3
Total Mineable reserves @30%	=	27298m^3
Reject of granite @70%	=	63696m^3
Side Burden	=	2976m^3
Top soil	=	1155m^3
Weathered Rock	=	6160 m^3
Total Waste (Reject+Side burden+ Weathered + Top soil)		
(63696m^3+2976m^3+1155m^3+6160m^3)	=	73987/27298
	=	1:2.71

2.9 Year Wise Production and Development

2.9.1 Tvl. Everking Granites (3.19.5 Ha)

The five years production is designed upto a depth of 30m. The waste ratio with reference to the production of granite would be 1:2.69.

Table No: 2.14. Computation of year wise production

Year	Top Soil	Boulders + Waste Rock	Rom (m^3)	Production @ 25% (m^3)	Rejects @ 75% (m^3)	Ore to Waste ratio
2023-24	138	3947	20019	6006	14014	1:3.01
2024-25	1140	5700	20130	6039	14091	1:3.48
2025-26	-	-	20130	6039	14091	1:2.3
2026-27	-	-	20100	6030	14070	1:2.3
2027-28	-	-	20033	6010	14023	1:2.3
TOTAL	**1278**	**9647**	**100413**	**30124**	**70289**	**1:2.69**

Total Volume of Granite for 5 years	=	100413m^3
Average Granite Recovery @30%/Annum	=	30124m^3
Granite Rejects @70%	=	70289m^3
Total Waste (Weathered)	=	9647m^3
Total Topsoil	=	1278m^3
Granite to Waste ratio (Top Soil+ Weathered + Reject)		
(1278m^3+9647m^3 +70289m^3)	=	81214/30124
	=	1: 2.69

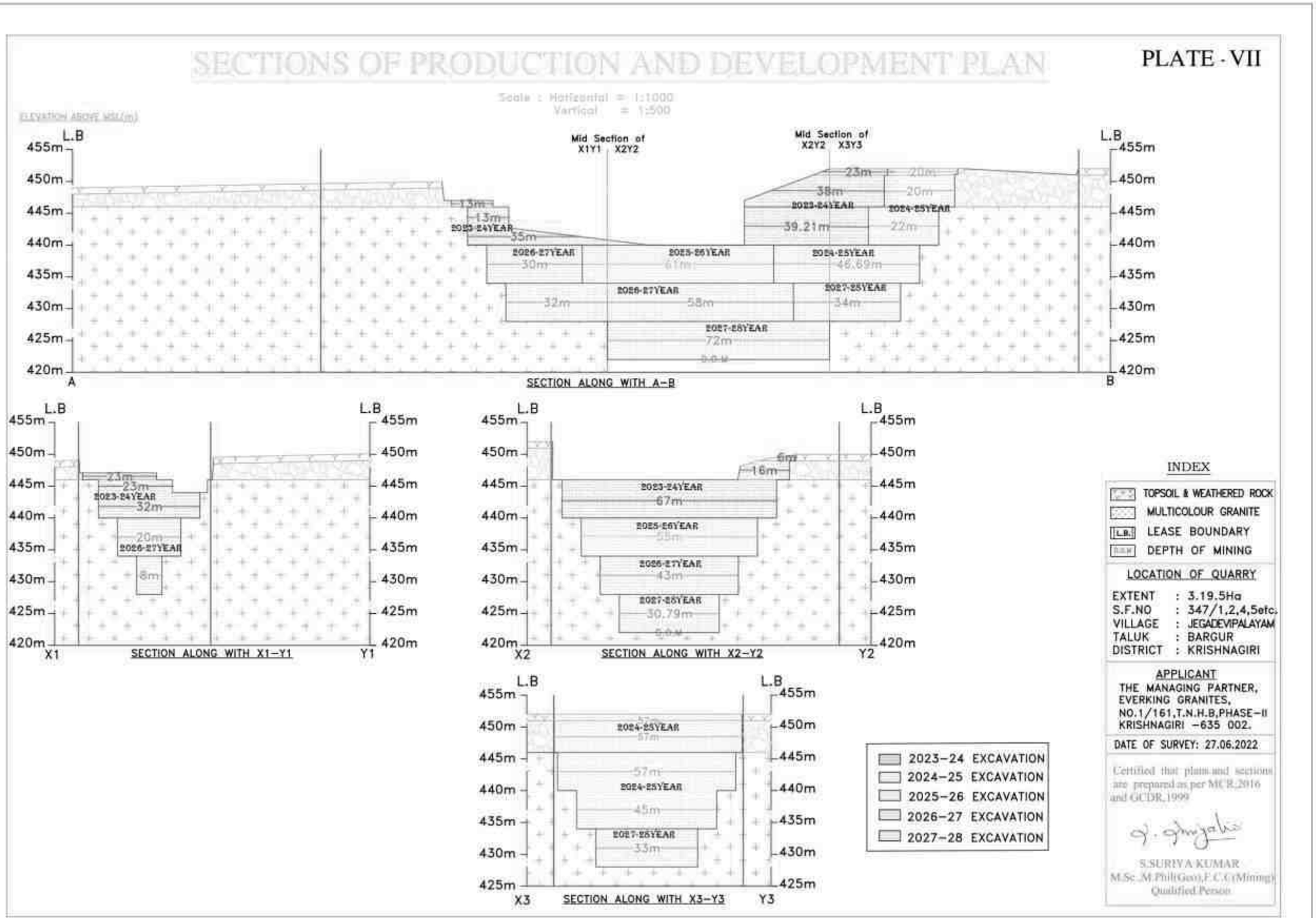


Fig. 2.16: Section of Production and Development Plan of Tvl.Everking Granites (3.19.5 Ha)

2.9.2 Thiru.E.Jagadeesan (1.56.5 Ha)

The five years production is designed upto a depth of 21m bgl. The waste ratio with reference to the production of Granite would be 1:2.7.

Table No: 2.15. Computation of year wise production

Year	Top Soil	Weathered + Waste rock	Rom (m^3)	Production @ 30% (m^3)	Rejects @ 70% (m^3)	Ore to over burden ratio
2020-21	1131	4484	10206	3062	7144	1:4.16
2021-22	-	-	10556	3167	7389	1:2.33
2022-23	-	-	10980	3294	7686	1:2.33
2023-24	-	-	10098	3029	7069	1:2.33
2024-25	-	-	9924	2977	6947	1:2.33
TOTAL	**1131**	**4484**	**51764**	**15529**	**36235**	**1:2.69**

Total Volume of granite for five years = 51764m^3

Granite Recovery @30% = 15529 m^3

Granite Rejects @70% = 36235 m^3

Total Waste (Top soil (1131m^3) + Weathered Rock (4484m^3) + Reject (36235m^3)) = 41850m^3

Total Waste ratio to granite = 41850/15529

= 1:2.7

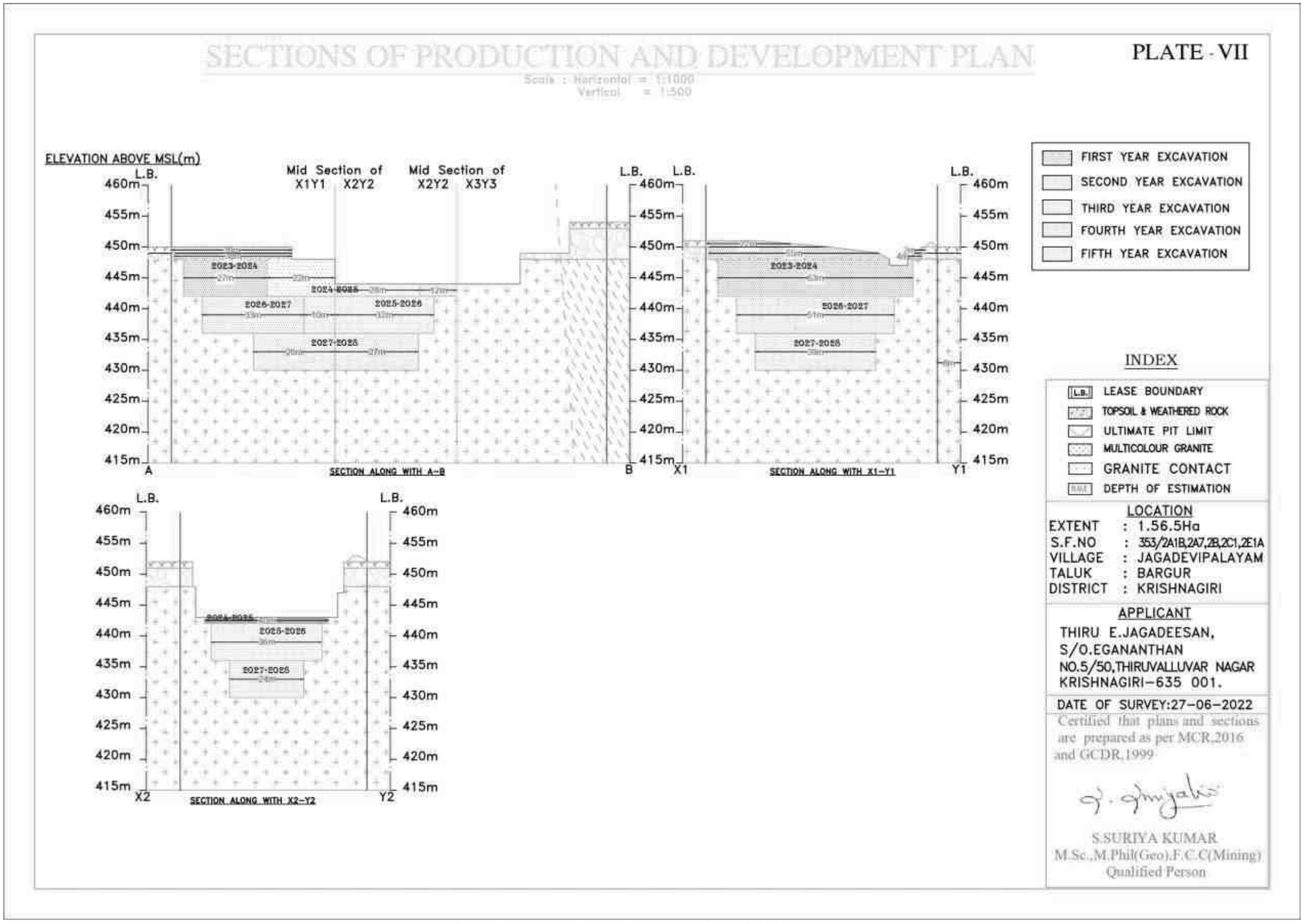


Fig. 2.17: Section of Production and Development Plan of Thiru E.Jagadeesan (1.56.5 Ha)

2.10 Stacking of Mineral Rejects and Disposal of Waste for plan period.

2.10.1 Tvl. Everking Granites (3.19.5 Ha)

The waste rocks to be generated from the mine will be fragmented gneisses and rejects of Granite with patches, cracks and small size blocks. The site selected for dumping waste and Granite rejects on the barren area and stable, therefore no chance for instability of dumps and washouts. Total generation of Granite rejects and waste for the plan period will be **81,214m^3** and for the whole life of mine will be **1,91,322m^3**.

Table No 2.16: Computation of waste and rejects materials

Year	Top Soil	Weathered rock	Granite Rejects @ 70 % (m^3)	Total
2023-24	138	3947	14014	18099
2024-25	1140	5700	14091	20931
2025-26	-	-	14091	14091
2026-27	-	-	14070	14070
2027-28	-	-	14023	14023
Total	**1278**	**9647**	**70289**	**81214**

For the next five years, all the rejects and weathered rock will be dumped over existing dump in South west side and on virgin barren land in east side as per approved scheme of mining. Top soil will be used for afforestation purposes.

Table No 2.17: Reject and waste dump quantity at the end of 5th year

Description	End of 5th Year
Topsoil	1278m^3
Reject dump (90m x 35m x 22.313m)	70,289m^3
Weathered Rock (74m x 64m x 2.036m)	9647m^3
Total	**81214 m^3**

2.10.2 Thiru.E.Jagadeesan (1.56.5 Ha)

The waste rocks to be generated from the mine will be fragmented gneisses and rejects of Granite with patches, cracks and small size blocks. The site selected for dumping waste and Granite rejects on the barren area and stable, therefore no

chance for instability of dumps and washouts. Total generation of Granite rejects and waste for the plan period will be **41,850m^3** and for the whole life of mine will be **73,987m^3**.

Table No-2.18: Computation of rejects materials

Year	Topsoil (m^3)	Weathered rock/ Waste (m^3)	Granite Rejects @ 70 % (m^3)	Total
2023-24	1131	4484	7144	12759
2024-25	--	--	7389	7389
2025-26	--	--	7686	7686
2026-27	--	--	7069	7069
2027-28	---	--	6947	6947
Total	**1131**	**4484**	**36235**	**41850**

For the next five years, all the rejects and weathered rock will be dumped in virgin barren land in north, northeast and east side as per approved scheme of mining. Top soil will be used for afforestation purposes.

Table No2.19 Reject Dump Dimensions at the end of 5th year

Description	End of 5th Year
Reject & Weathered Rock-Dump 1	23040m^3 (32m x 24m x 30m)
Dump 2	7680m^3 (16m x 16m x 30m)
Reject Back filling	9999m^3
Top soil	1131m^3
Total	**41850m^3**

2.11 Conceptual Mining Plan/ Final Mine Closure Plan

2.11.1 Tvl. Everking Granites (3.19.5 Ha)

Conceptual Mining Plan is prepared with an object of long-term systematic development of bench lay - outs, selection of dump site, setting roads, to determine ultimate pit limit, depth of mining and ultimate pit slope, selection of sites for construction of infrastructures, lying of roads etc. Kindly refer Table no-2.20 & Plate No-VIII in Fig 2.18

The ultimate pit size is so designed based on certain practical factors such as the economical depth of mining, safety zones followed, available area for mining. The Ultimate pit size of the mine in bench-wise arrived and calculated as hereunder.

Table No 2.20: Computation of ultimate pit dimension

Bench	Topsoil/Mineral	L(m)	W(m)	Height(m)
I	Top soil	237m	90m	1m
II	Weathered rock	234m	88m	5m
III	Granite	224m	81m	6m
IV	Granite	212m	69m	6m
V	Granite	200m	57m	6m
VI	Granite	122m	45m	6m
TOTAL				**30m**

Details of ultimate pit and dump dimensions are given in plate No-VIII. Ultimate or over all pit slope shall be 45° and each bench height shall be 6m height and vertical.

Table 2.21 Ultimate Dump Dimensions (M)

Description	End of Life of Mine
Topsoil	2105m^3
Reject dump	40523m^3 (85m x 60mx 29.155m)
Weathered Rock	148694m^3 (95m x 38m x 11.225m)
Total	**191322m^3**

At the end of mining, all rejects and weathered rock will be dumped in same place in South west and east side as per approved scheme of mining and plantation will be done on slopes of dump. Top soil will be used for afforestation purposes.

2.11.1.1 Restoration, Reclamation of already mined out area.

The quarried out pit will be used as water storage pond which improves the agricultural activity in the buffer zone.

The quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.

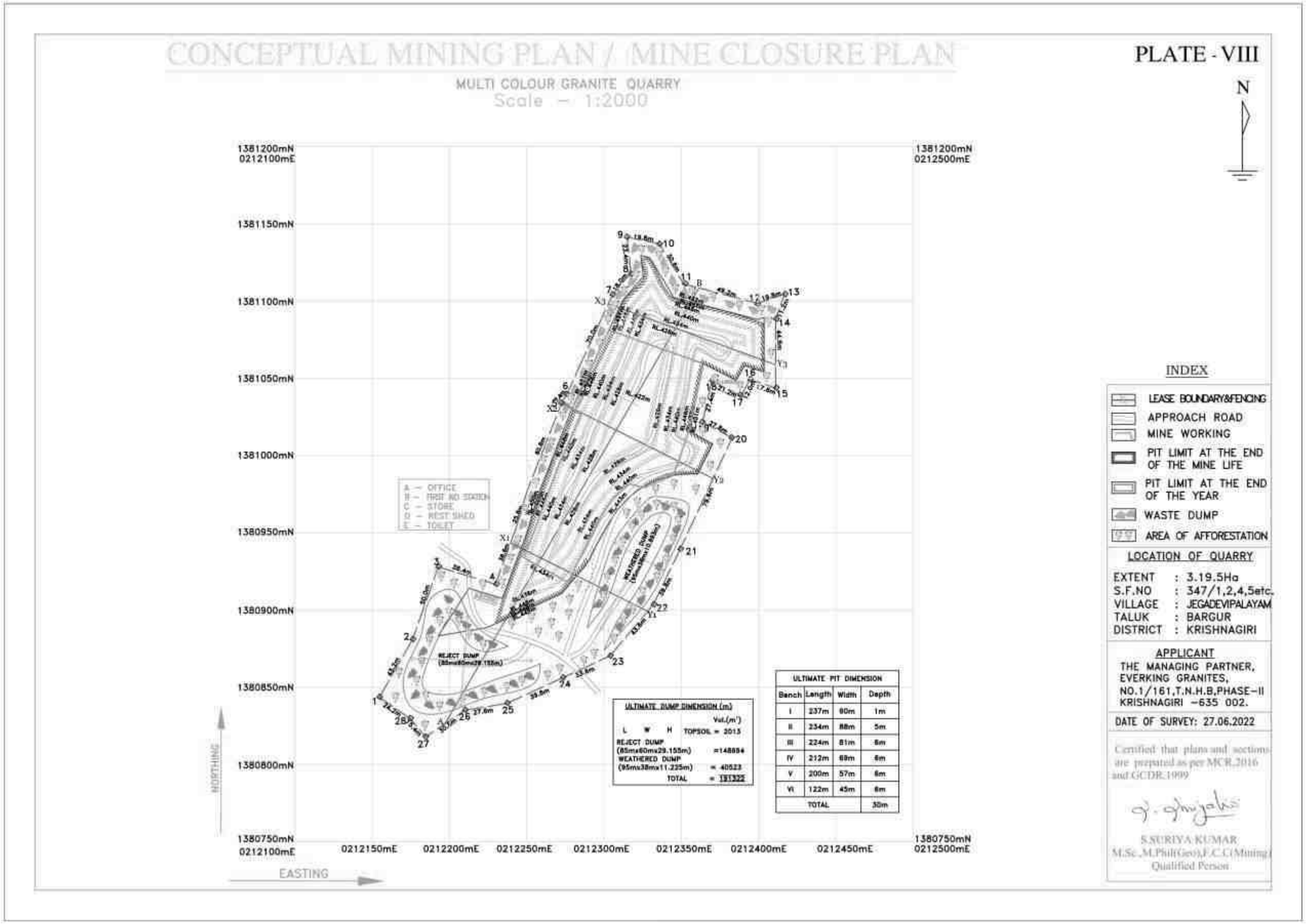


Fig. 2.18: Conceptual plan of Tvl.Everking Granites (3.19.5 Ha)

2.11.2 Thiru.E.Jagadeesan (1.56.5 Ha)

Conceptual Mining Plan is prepared with an object of long-term systematic development of bench lay - outs, selection of dump site, setting roads, to determine ultimate pit limit, depth of mining and ultimate pit slope, selection of sites for construction of infrastructures, lying of roads etc. Kindly refer Table no-2.22 & Plate No-VIII in Fig 2.19.

The ultimate pit size is so designed based on certain practical factors such as the economical depth of mining, safety zones followed, available area for mining. The Ultimate pit size of the mine in bench-wise arrived and calculated as hereunder.

Table No 2.22 Computation of ultimate pit dimension

PIT	Bench	Topsoil/Mineral	L(m)	W(m)	D(m)
I	I	Top soil	12m	2m	1m
	II	Weathered	11m	16m	4m
			27m	36m	1m
	III	Granite	13m	30m	4m
			34m	55m	2m
	IV	Granite	36m	43m	6m
	V	Granite	30m	31m	6m
	VI	Granite	24m	19m	6m
TOTAL =					**36m**

Details of ultimate pit and dump dimensions are given in plate No-VIII. Ultimate or over all pit slope shall be 45° and each bench height shall be 6m height and vertical.

Table 2.23 Ultimate Dump Dimensions (M)

Description	End of mine life
Reject, Weathered & Waste Mineable (Backfilling)	$72832m^3$ (82m x 30m x 29.0606m)
Top soil	$1155m^3$
Total	**$73987m^3$**

All rejects and waste materials dumped will be backfilled at the end of mine life.

2.11.2.1 Restoration, Reclamation of already mined out area.

The quarried out pit will be used as water storage pond which improves the agricultural activity in the buffer zone.The quarried pit will be fenced by using Barbed wire fencing to prevent inherent entry of public and cattle.

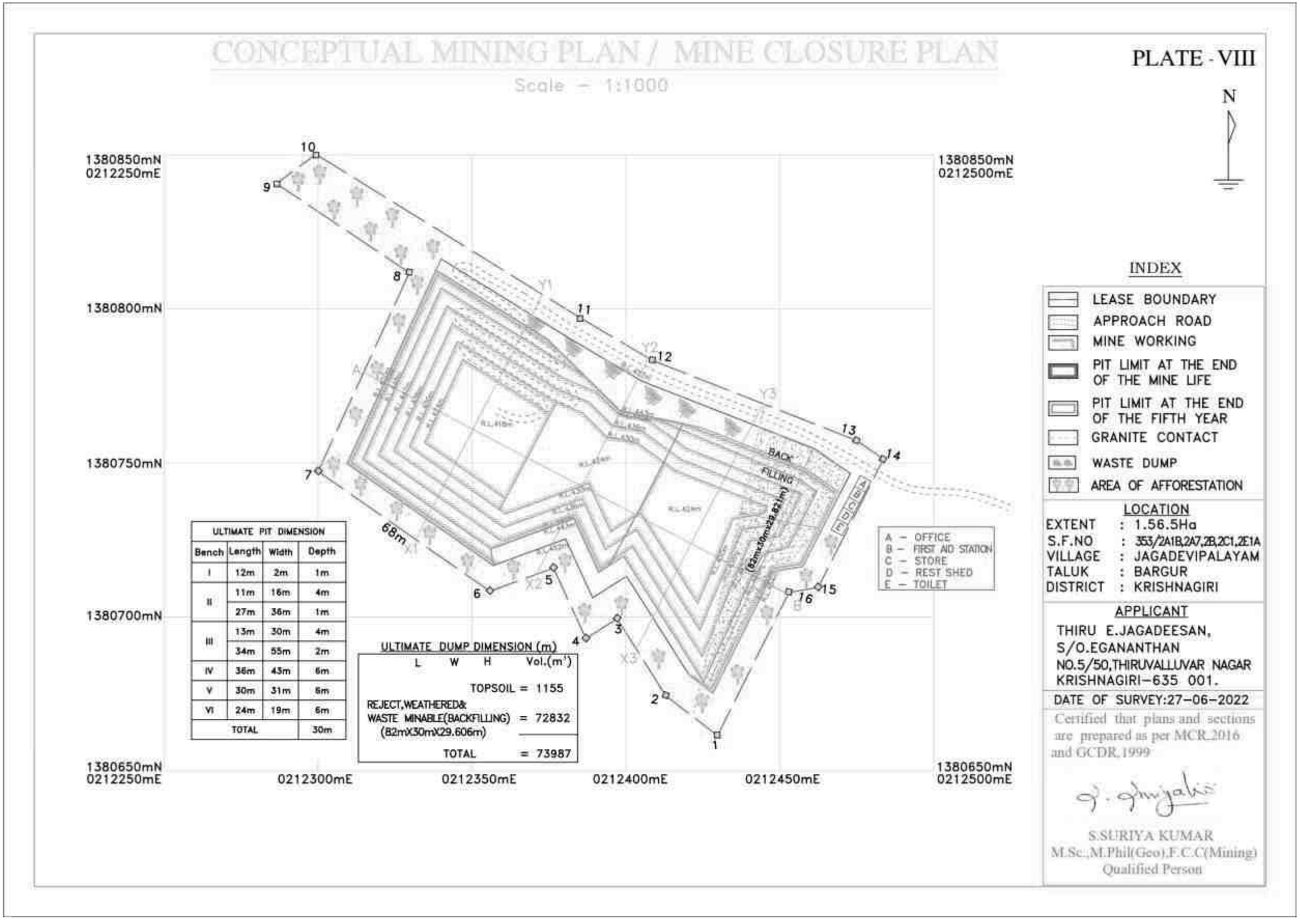


Fig. 2.19: Conceptual plan of Thiru E.Jagadeesan (1.56.5 Ha)

2.12 Employment Potential (Management & Supervisory personal)

Table No 2.24: Employment Potential of Tvl. Everking Granites (3.19.5 Ha)

Management and supervisory personal		Mines manager	1 No
		Mining Mate	1 No
		Mines Foreman	1 No
		Register Keeper	1 No
Workers	**Skilled**	Operator	1 No
	Semi-skilled	Driver	4 No
	Unskilled	Musdoors/Labours	12 No
		Cleaners	2 No
		Register Keeper	1 No
	Total		**24 nos**

Table No 2.25: Water Requirements (3.0 KLD) - Tvl. Everking Granites (3.19.5 Ha)

Drinking and Domestic purposes	1.0 KLD
Dust suppression & Green Belt	2.0 KLD
Source	Drinking - Mineral water supply Domestic, Dust suppression and Greenbelt – Water vendors through water tank

Table 2.26: Employment Potential of Thiru.E.Jagadeesan (1.56.5 Ha)

Management and supervisory personal		Mines manager	1 No
		Mining Mate	1 No
		Mines Foreman	1 No
		Register Keeper	1 No
Workers	**Skilled**	Operator	1 No
	Semi-skilled	Driver	3 No
	Unskilled	Musdoors/Labours	10 No
		Cleaners	2 No
		Watchman	1 No
	Total		**21 nos**

Table No 2.27 Water Requirements (3 KLD) - Thiru.E.Jagadeesan (1.56.5 Ha)

Drinking and Domestic purposes	1.0 KLD
Dust suppression & Green Belt	2.0 KLD
Source	Drinking - Mineral water supply Domestic, Dust suppression and Greenbelt – Water vendors through water tank

2.13 Amenities of two existing quarries

As both quarries are existing quarries good approach road is already available. All site services such as first-aid room, office, rest room, canteen and toilets will be renovate before commencing the project. The workers are supplied with helmets, safety boots, ear plugs, masks, gloves, etc., as personal protective devices.

2.13.1 Sanitary facilities

Semi-permanent latrines & urinals shall be maintained at convenient places for use of labours as per the provisions of Rule (33) of the main rules, 1955 separately for males and Females. Washing facilities shall also be arranged as per rule (36) of the mines Rules, 1955.

2.13.2 First Aid facility

First Aid station as per provisions under Rule (44) of the Mines Rules, 1955 will be provided and First aid kits kept in mines office room, the qualified first aid personnel should be appointed or nominated to attend emergency first aid treatment.

In case of eventuality, the victim will be given first aid immediately at the site and the injured person will be taken to the hospital located in Jagadevi. The competent and statutory of Foreman / Mate / Permit Manager will be incharge of the First aid.

2.13.3 Labour Health

Periodic medical examination has to be made for occupational health once in a year in addition to attending medical treatment of occupational injuries under Rule 45 (A).

2.13.4 Precautionary safety measures to the Labourers

Safety provisions like helmet, goggles, safety belt, safety shoes etc have to be provided as per the circulars and amendments made for Mine labours under guidance of DGMS.

Necessary training will be conducted once in a year to all the employees with the help of qualified and experienced officers to train about the safe and systematic quarrying operation

2.13.5 The Child labor Employment

As per the Mines Act, 1952, no child labors below 18 years of old were engaged for any work in the quarry.

2.14 Project Cost

2.14.1 Tvl. Everking Granites (3.19.5 Ha)

a) Project cost / investment

i) Land Cost	=	Rs. 21,00,000
ii) Machinery to be used (hire)	=	Rs. 60,00,000*
iii) Building & Welfare amenities	=	Rs 3,00,000
Total	**=**	**Rs. 84,00,000**

(* Part of machineries shall be hired)

b) EMP Cost

i) Personal protective equipment	=	Rs 2,00,000
ii) Environmental Monitoring	=	Rs 2,25,000
iii) Occupation Health	=	Rs 2,00,000
iv) Green Belt & Dust suppression	=	Rs 1,00,000
Total	**=**	**Rs 7.25 Lakhs**

2.14.2 Thiru.E.Jagadeesan (1.56.5 Ha)

a) Project cost / investment

i) Land Cost	=	Rs. 13,00,000
ii) Machinery to be used (hire)	=	Rs. 62,00,000*
iii) Building & Welfare amenities	=	Rs 3,00,000
Total	**=**	**Rs. 78,00,000**

b) EMP Cost

i)	Personal protective equipment	=	Rs 1,00,000
ii)	Environmental Monitoring	=	Rs 2,25,000
iii)	Occupation Health	=	Rs 1,00,000
iv)	Green Belt & Dust suppression	=	Rs 4,00,000
v)	Tyre/Wheel washing station	=	Rs 1,00,000
vi)	Sign Boards	=	Rs 25,000
	Total	**=**	**Rs 9.50 Lakhs**

2.15 End Use

The applicant does not have the facilities to cut and polish the rough blocks of granite. He proposes to export the rough blocks directly to the potential buyers of the domestic and world market.

CHAPTER – 3: DESCRIPTION OF THE ENVIRONMENT

3.0 BASELINE ENVIRONMENTAL STATUS

3.1 INTRODUCTION

The chapter describes the existing environmental settings in the study area and is based upon the secondary information collected from the published sources, reconnaissance survey, primary socio-economic and environmental monitoring of air, noise, soil, ground and surface water in the study area.

For the purpose of EIA studies, mine lease area was considered as the core zone and area outside the mine lease boundary up to 10km radius from the lease boundary was considered as buffer zone. Collection of base line data is an integral part of the preparation of environmental impact assessment reports. The baseline monitoring study has been carried out during March 1st, 2023 – May 31th, 2023 to assess the existing environmental scenario in this area.

The Various environmental components studied as a part of the baseline study are discussed in the following project activities are:

- Air Environment
- Noise Environment
- Soil Environment
- Water Environment
- Flora and Fauna
- Socio-economic
- Land Environment

3.2 METHODOLOGY

The guiding factors of the present baseline study are the requirements laid down by the Central Pollution Control Board (CPCB) and guidelines as per the Environmental Impact Assessment Notification.

- In order to assess the Ambient Air Quality (AAQ), samples of ambient air were collected by installation of Respirable Dust Sampler and Fine Particulate Matter Sample at different locations within the study area and analyzed to find out the existing status of air quality.

- Ground water samples were collected from the existing tube wells, while samples for surface water were collected from river & small ponds. The samples were analyzed for parameters necessary to determine water quality (based on IS: 10500 criteria) and those, which are relevant from environmental impact point of view of the proposed river bed mining project.
- Soil samples were collected and analyzed for relevant physical and chemical characteristics in order to assess the impact of the proposed mining on soil.
- Inventory of flora and fauna species present in the area was made through field visits and survey by ecologists.
- Socio-economic data was collected from primary sources through village – level surveys and household visits.
- The land use patterns of the study area were assessed through latest satellite imaging and topographical sheets of Survey of India.

Appropriate methodologies have been followed in preparing the EIA-EMP report. The methodology adopted for the study is outlined below. The sampling locations were selected on the basis of the following:

- Predominant wind directions recorded by the India Meteorological Department (IMD), Hosur observatory, Krishnagiri district;
- Existing topography;
- Drainage pattern and location of existing surface water bodies like lakes/ponds, rivers and streams;
- Location of villages/towns/sensitive areas, and;
- Areas, which represent baseline conditions;

3.3 METEOROLOGICAL DATA RECORDED AT IMD STATION, HOSUR OBSERVATORY, KRISHNAGIRI DISTRICT

The meteorology of the project area plays very important role in dispersion of pollutants and build-up of pollution within the air atmosphere. In the present study, in the month of March 1st, 2023 – May 31th, 2023 meteorological data for site specific has been taken to find the dispersion of pollutant concentration. The mixing height, which is an important parameter to express the dispersive potential of atmosphere, has been taken from the atlas of hourly mixing height and assimilative capacity of atmosphere in India.

Table 3.1 Summary of the Meteorological data for the study period

S.No	Parameters	Months	March 2023	April 2023	May 2023
1	Temperature (°C)	Max	35	38	36
		Min	20	23	24
		Average	26	30	29
2	Rainfall (mm)	Total Average Rainfall	10.8	32.5	130
		No. of rainy days	1	4	12
3	Humidity (%)	Average	20	43	72
4	Wind speed (mps)	Average	2.2	2.3	2.3
5	Cloud (%)	Average	58	46	28

3.3.1 Wind Rose

Wind speed and wind direction data is useful in identifying the influence of meteorology on the air quality of the area. The observed wind pattern during the study period is described below. In the present study, in the month of March 1st, 2023 – May 31th, 2023 meteorological data has been taken to find the dispersion of pollutant concentration. Wind-rose diagram for the study period is shown given below in Fig No. 3.1.

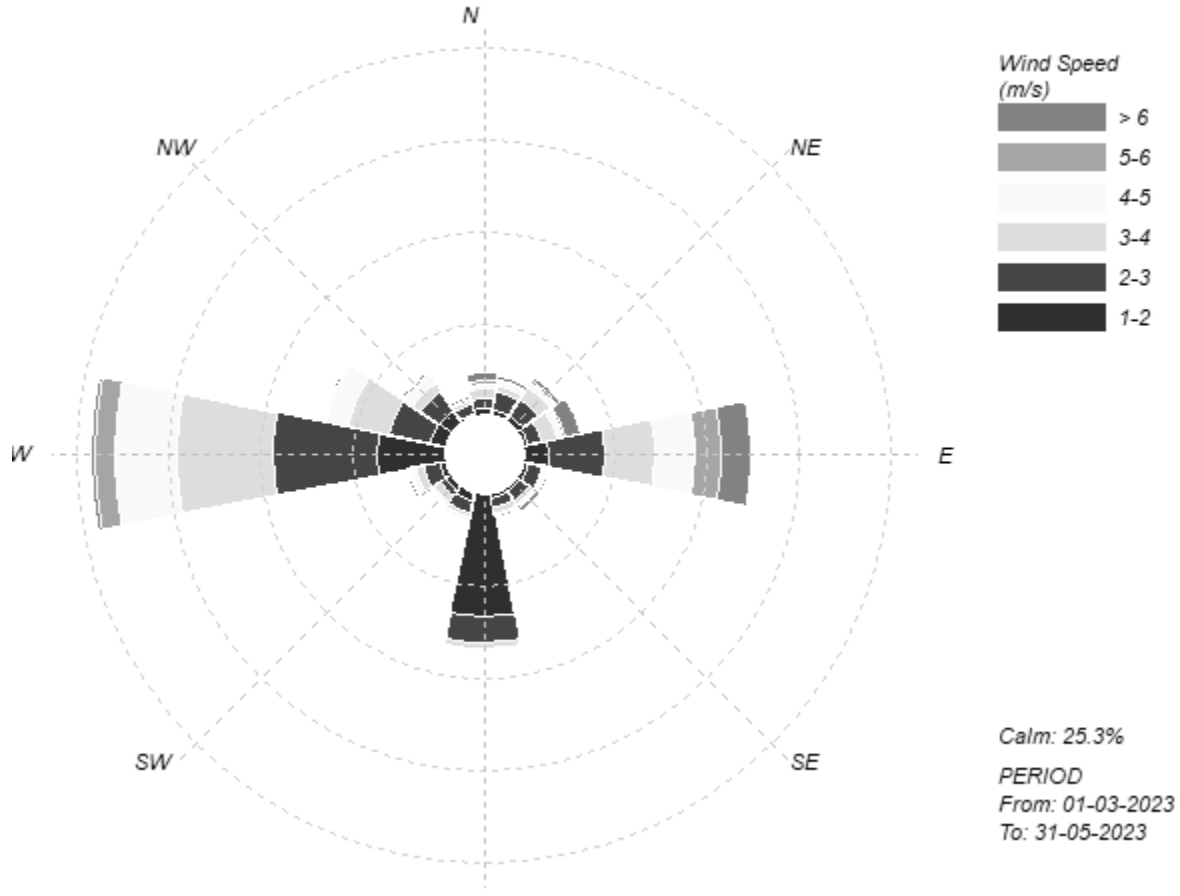


Fig No 3.1 Wind Rose Pattern for the Study period

3.4 AIR ENVIRONMENT

Prevailing air environment i.e. baseline conditions in an area is primarily governed by many factors activities going on in that area. The pollutant level in atmosphere is also governed by the meteorology, topography, natural settings in terms of plantation, forest cover, vegetation etc as these factors in combination with each other are responsible for dispersion, diffusion, transportation and assimilation of pollutants in the local air shed.

3.4.1 Ambient Air Monitoring

The prime objective of baseline air quality study (10km radius) is to assess the existing air quality of the area to form base line information. The study area represents mostly rural environment. Ambient air monitoring was carried out at 5

locations. The locations were identified keeping in view of predominant wind directions prevailing during study period, sensitive receptors, human settlements and mining activities around. The details about sampling locations are mentioned below in Fig No. 3.2, 3.3 and presented in Table 3.1(a).

The existing Ambient Air Quality status (AAQ) has been monitored for parameters PM_{10}, $PM_{2.5}$, SO_2 and NO_X. Ambient air quality monitoring was carried out at a frequency of two days per week at each location for three months at 8 hour continuously. Respirable dust samplers have been used for monitoring the existing PM_{10} status and fine dust samplers are used for monitoring $PM_{2.5}$ status in the study area. Methodologies adopted for sampling and analysis were carried out, as per the approved methods of Central Pollution Control Board (CPCB).

Table 3.1 (a) Ambient Air Quality Monitoring Locations

S. No	Sample Location	Station Code	Direction/ Distance (w.r.t. mine)	Core Zone/ Buffer Zone	Latitude	Longitude
1	Core Zone	AAQ-1	--	Core- Tvl.Everking Granites	12°28'42.59"N	78°21'9.61"E
		AAQ-2	--	Core- Thiru.E.Jagadeesan	12°28'36.29"N	78°21'14.55"E
2	Jagadevipalayam	AAQ-3	3.5 km (W)	Buffer	12°29'3.70"N	78°19'12.15"E
3	Sekilnatham	AAQ-4	4.2 km (E)	Buffer	12°29'45.11"N	78°23'24.69"E
4	Gandhinagar	AAQ-5	2.6 km (S)	Buffer	12°27'12.75"N	78°20'55.38"E
5	MGR Nagar (Bargur)	AAQ-6	5.6 km (N)	Buffer	12°31'55.08"N	78°20'58.31"E

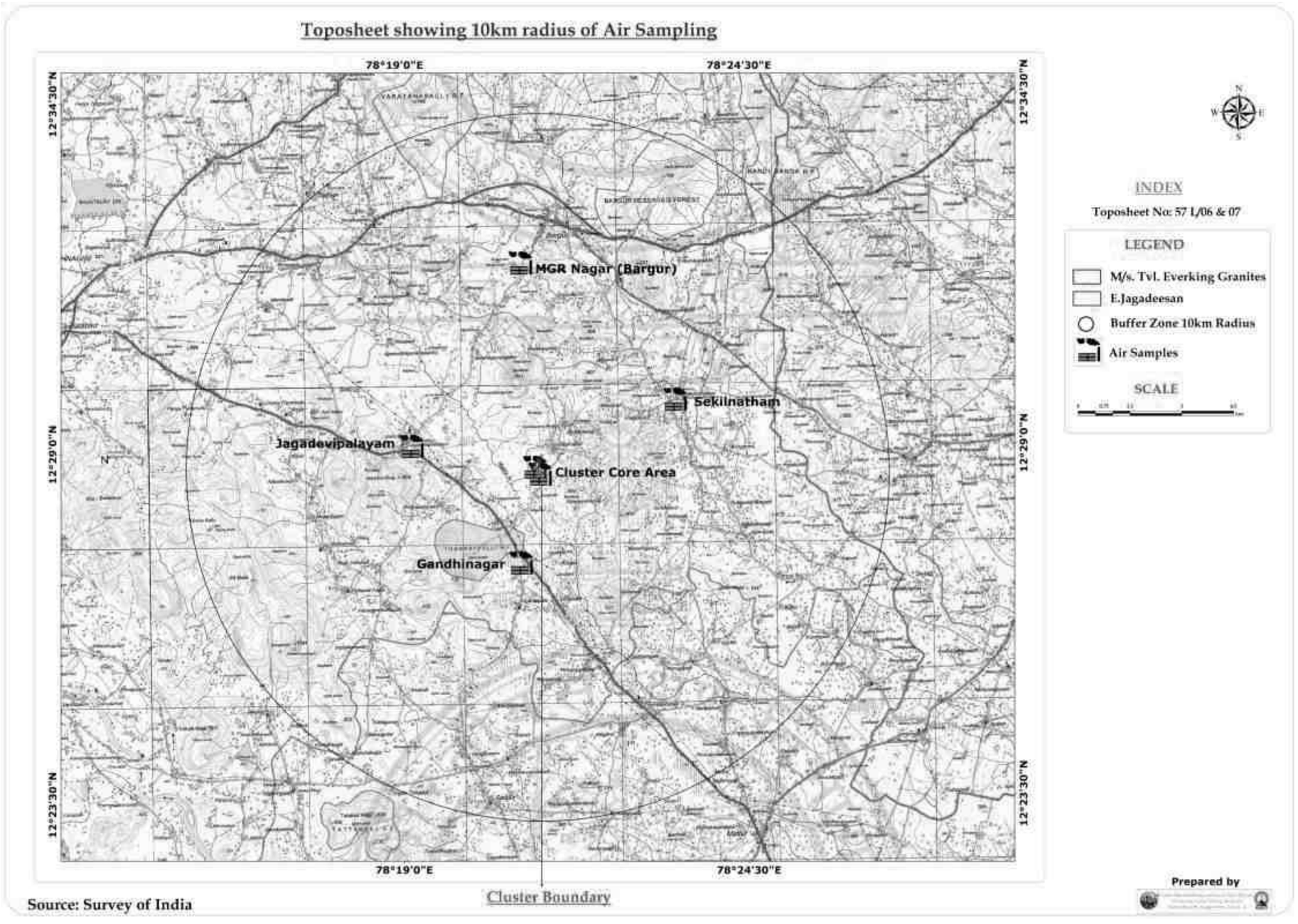


Fig No 3.2 Geo Referenced Toposheet showing Air Sampling station around 10km radius


(a) Air monitoring locations at Core Zone




(b) Air monitoring locations at Buffer Zone

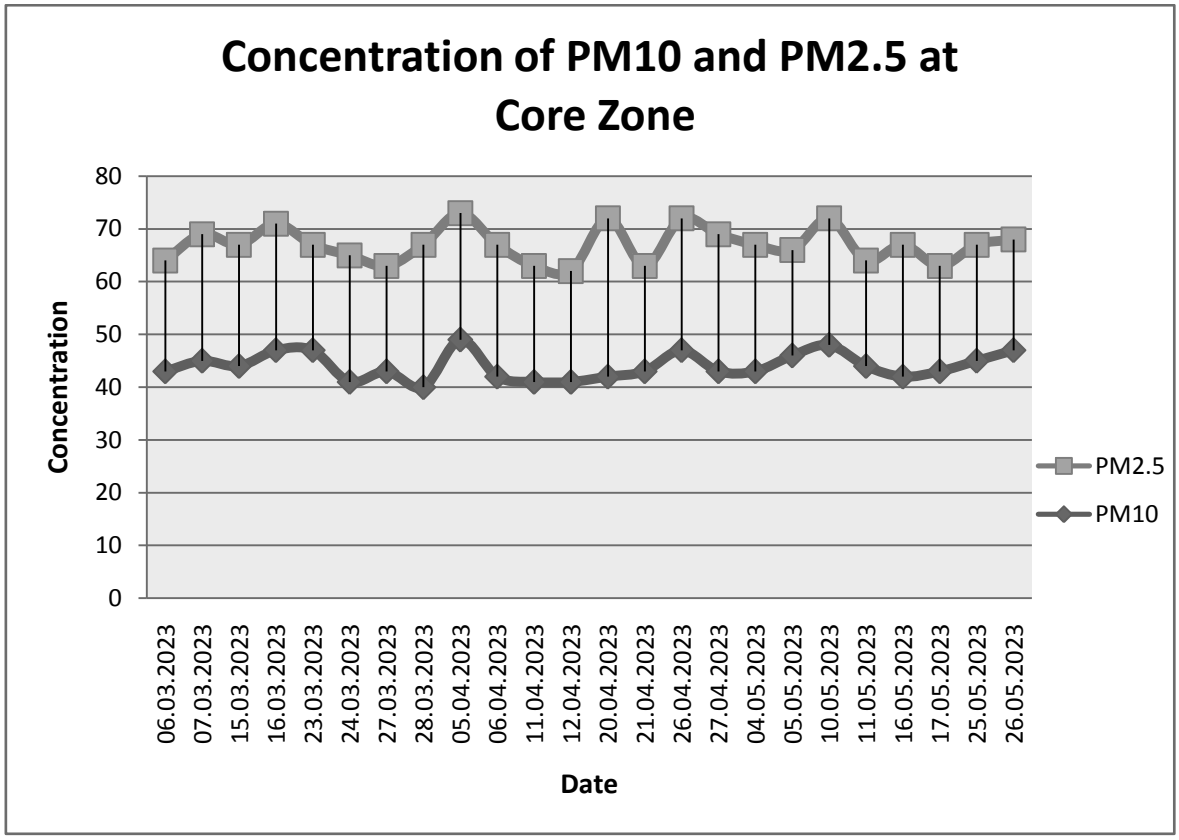
Fig No 3.3 Air Monitoring locations at Core and Buffer Zone

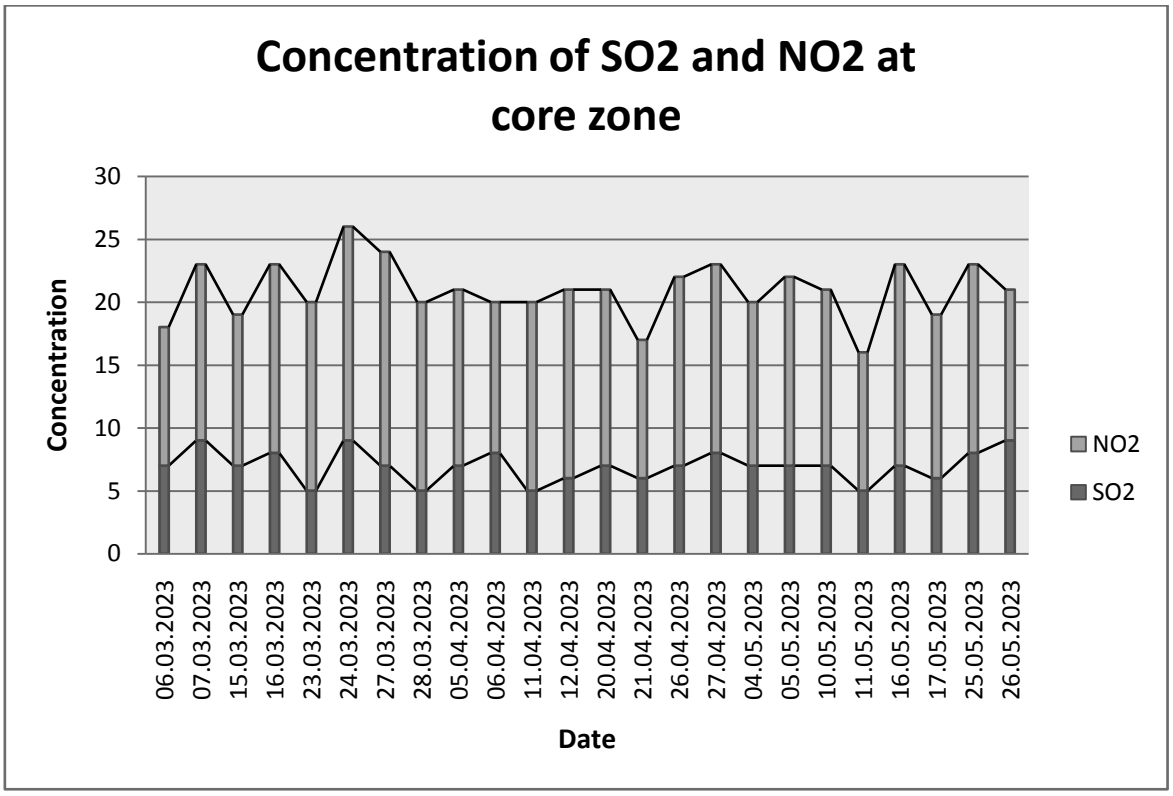
3.4.2 Monitoring Result

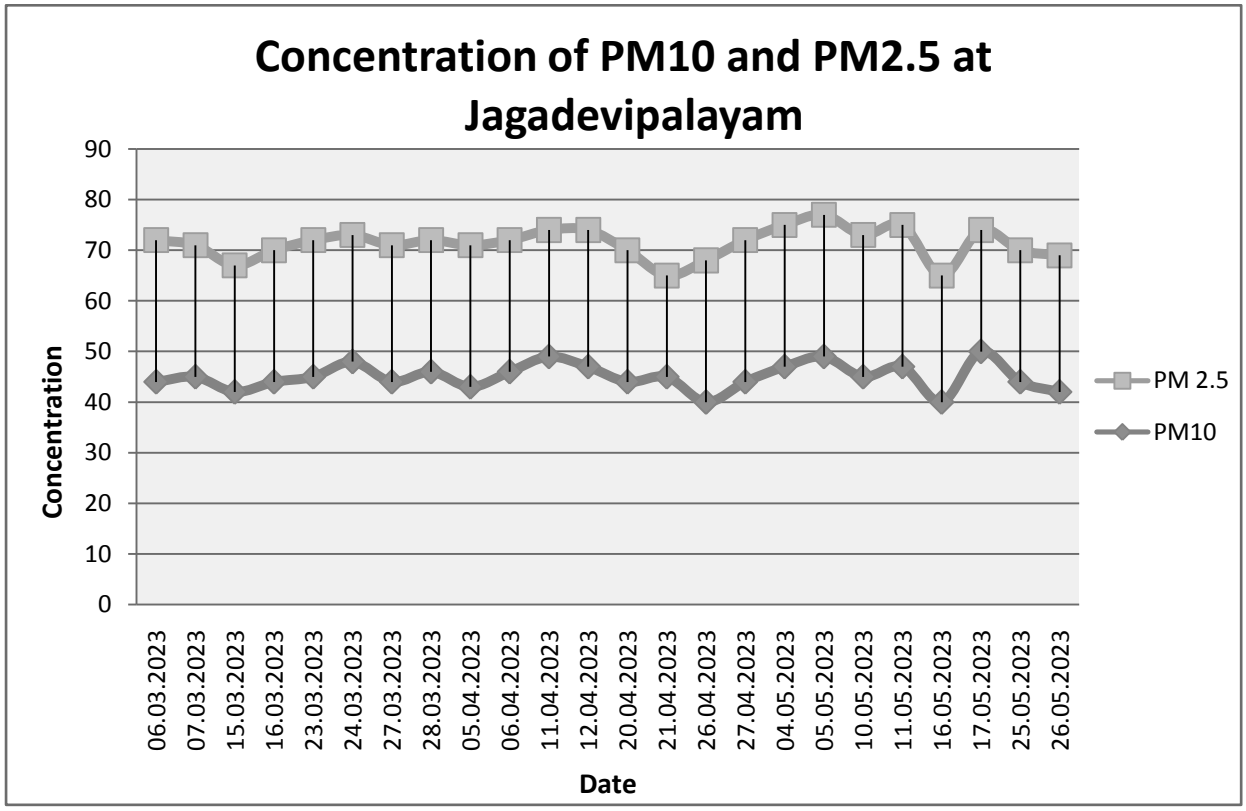
Monitoring station-wise minimum and statistical analysis (minimum, maximum, arithmetic mean) for measured levels of PM_{10}, $PM_{2.5}$, SO_2, NO_x in study area for the monitoring period are shown parameter wise in Table 3.2 and graphical representation of concentration pollutants are showing in Fig No 3.4.

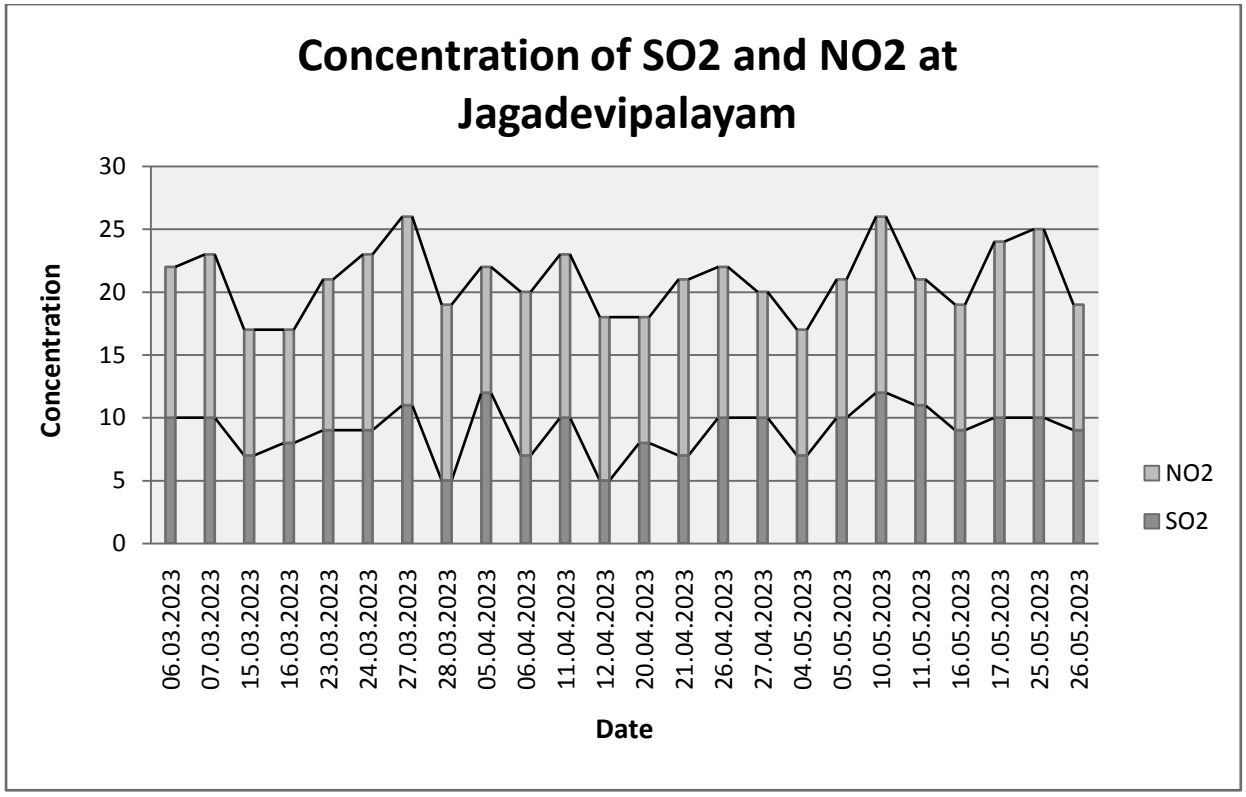
Table 3.2 Summaries of Ambient Air Quality Results

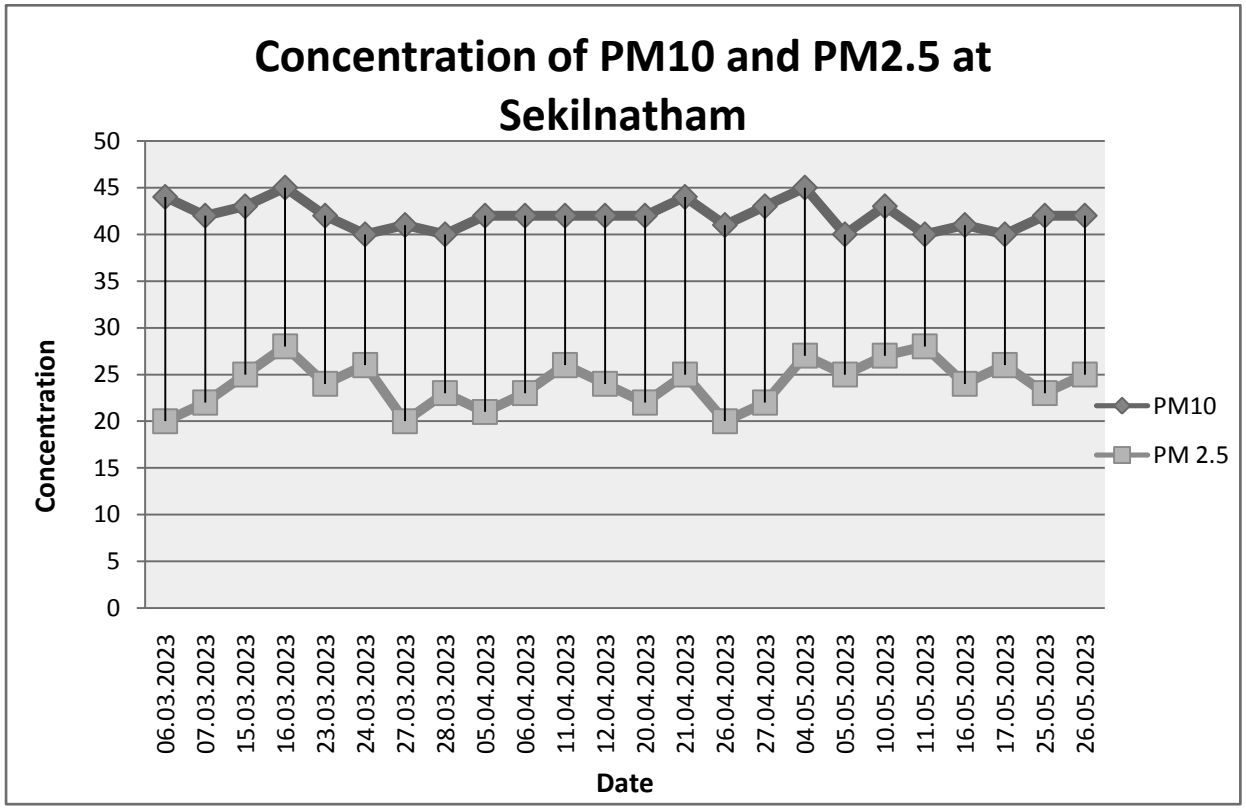
Location		Code	PM_{10} (µg/m^3)				$PM_{2.5}$ (µg/m^3)				SO_2 (µg/m^3)				NO_x (µg/m^3)			
			Max	**Min**	**Avg**	**98%**	**Max**	**Min**	**Avg**	**98%**	**Max**	**Min**	**Avg**	**98%**	**Max**	**Min**	**Avg**	**98%**
Core Zone		A_1	52	40	44	48.5	30	18	23	28.6	11	4	7	9	18	11	14	17
Buffer zone	Jagadevipalayam	A_2	50	39	45	50	28	18	26	28	12	5	9	12	18	7	12	15
	Sekilnatham	A_3	52	38	42	45	29	17	24	28	13	5	7	12	15	7	9	13
	Gandhinagar	A_4	51	42	46	50	29	19	26	29	13	6	10	12.5	16	9	13	16
	MGR Nagar, Bargur	A_5	49	41	44	49	28	20	25	27	10	3	7	10	14	7	10	14
NAAQS			**100**				**60**				**80**				**80**			

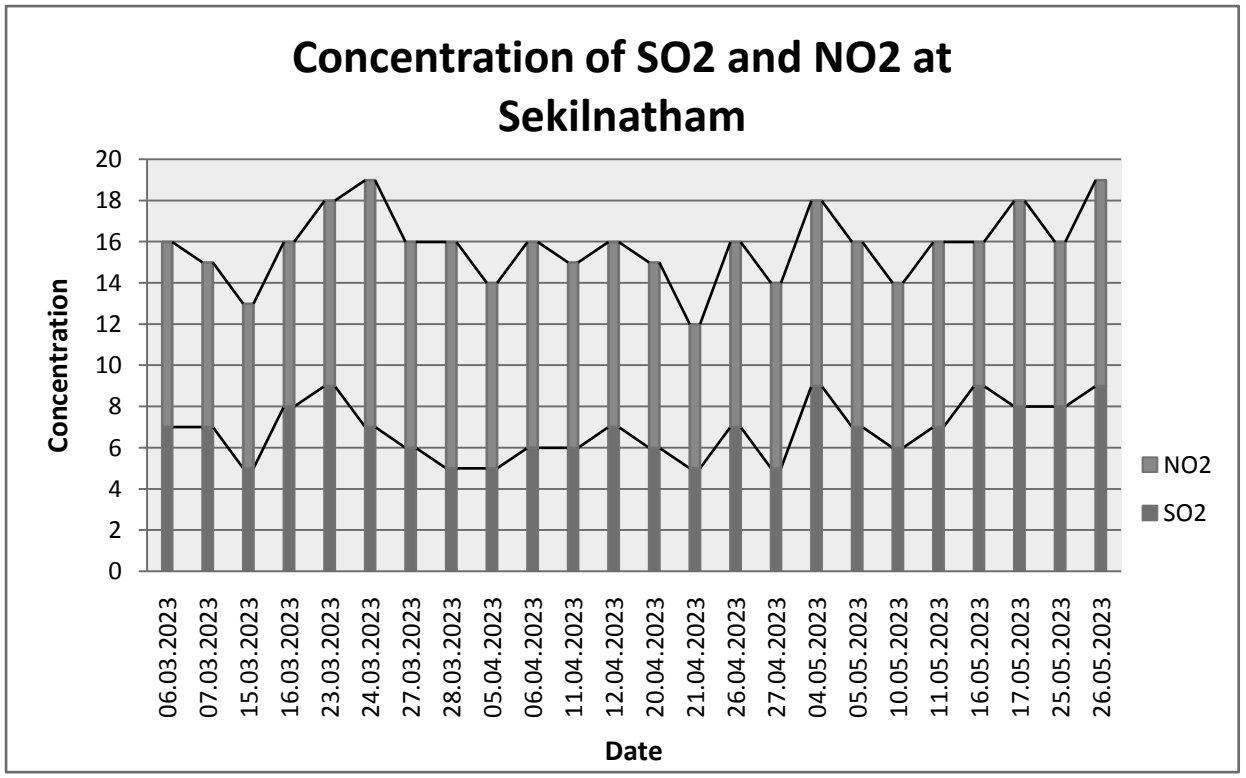

Concentration of PM10 and PM2.5 at Core Zone
Concentration
80
70
60
50
40
30
20
10
0
06.03.2023
07.03.2023
15.03.2023
16.03.2023
23.03.2023
24.03.2023
27.03.2023
28.03.2023
05.04.2023
06.04.2023
11.04.2023
12.04.2023
20.04.2023
21.04.2023
26.04.2023
27.04.2023
04.05.2023
05.05.2023
10.05.2023
11.05.2023
16.05.2023
17.05.2023
25.05.2023
26.05.2023
Date
PM2.5
PM10

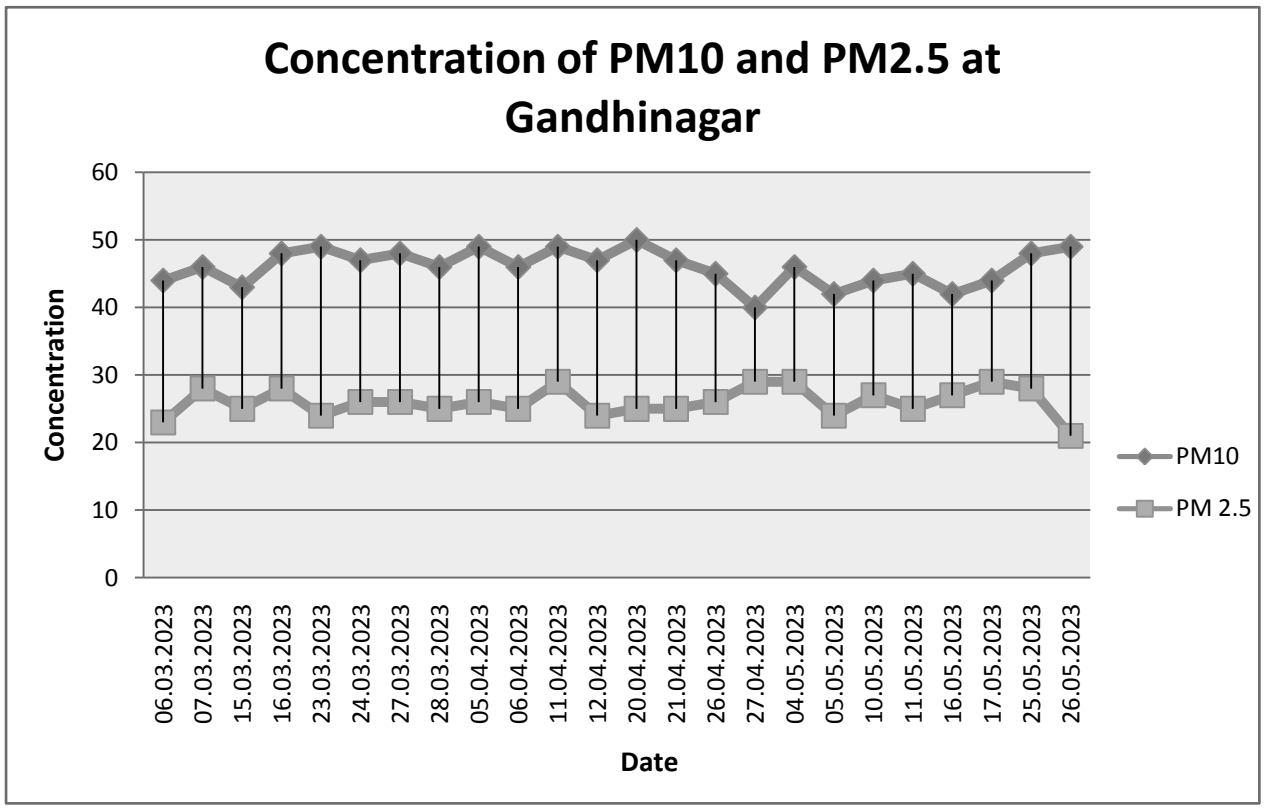

Concentration of SO2 and NO2 at core zone
Concentration
30
25
20
15
10
5
0
06.03.2023
07.03.2023
15.03.2023
16.03.2023
23.03.2023
24.03.2023
27.03.2023
28.03.2023
05.04.2023
06.04.2023
11.04.2023
12.04.2023
20.04.2023
21.04.2023
26.04.2023
27.04.2023
04.05.2023
05.05.2023
10.05.2023
11.05.2023
16.05.2023
17.05.2023
25.05.2023
26.05.2023
Date
NO2
SO2

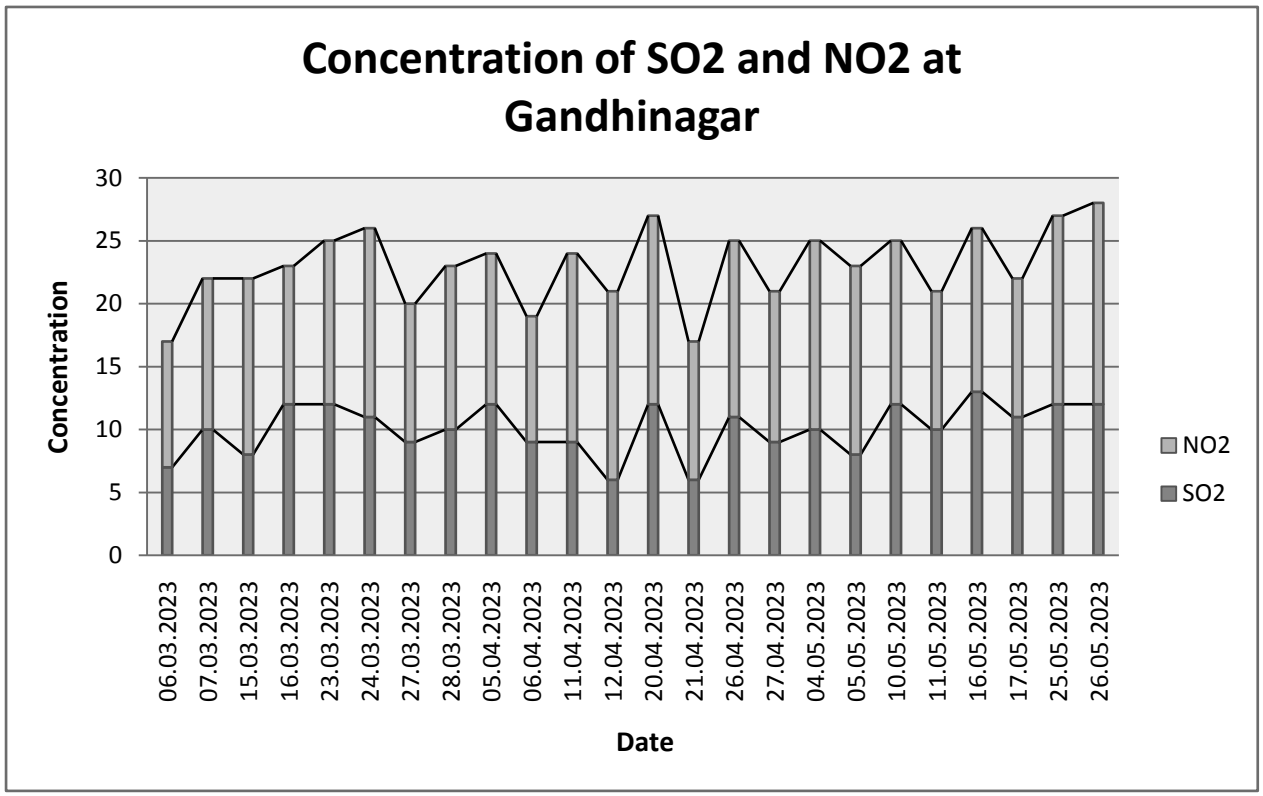

Concentration of PM10 and PM2.5 at Jagadevipalayam
Concentration
90
80
70
60
50
40
30
20
10
0
06.03.2023
07.03.2023
15.03.2023
16.03.2023
23.03.2023
24.03.2023
27.03.2023
28.03.2023
05.04.2023
06.04.2023
11.04.2023
12.04.2023
20.04.2023
21.04.2023
26.04.2023
27.04.2023
04.05.2023
05.05.2023
10.05.2023
11.05.2023
16.05.2023
17.05.2023
25.05.2023
26.05.2023
Date
PM 2.5
PM10

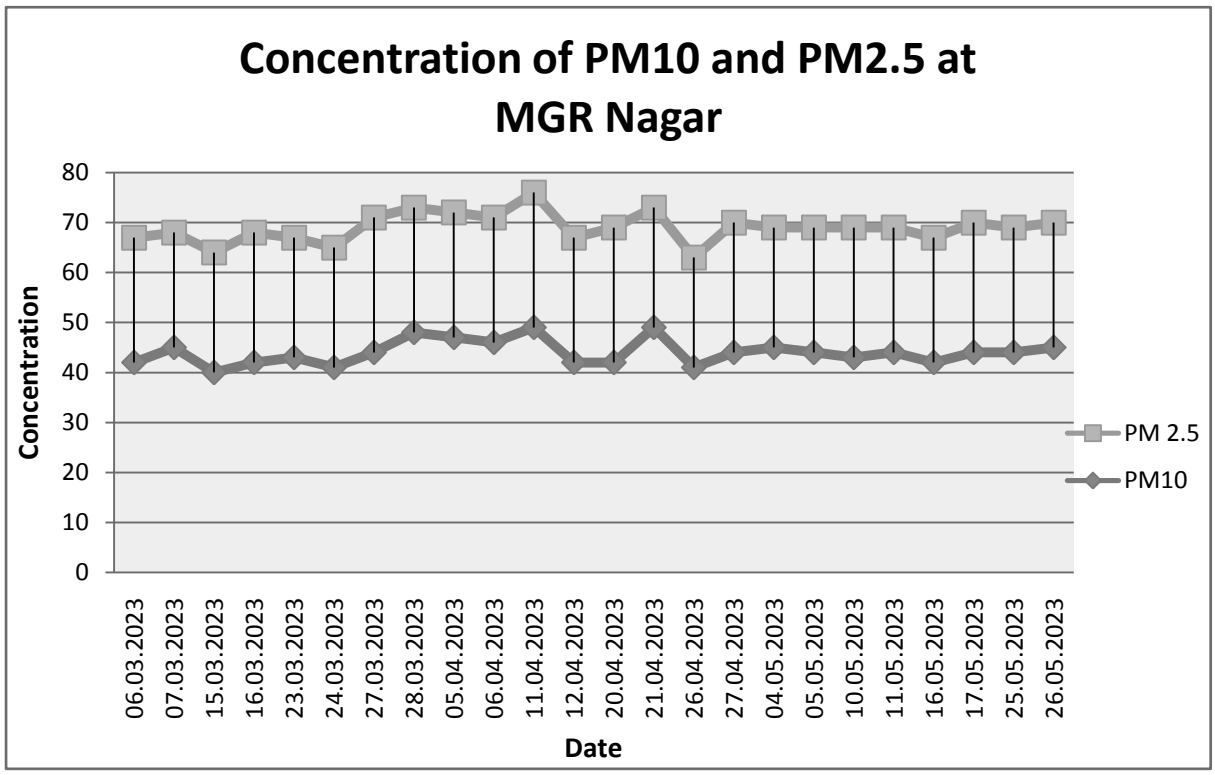

Concentration of SO2 and NO2 at Jagadevipalayam
Concentration
30
25
20
15
10
5
0
06.03.2023
07.03.2023
15.03.2023
16.03.2023
23.03.2023
24.03.2023
27.03.2023
28.03.2023
05.04.2023
06.04.2023
11.04.2023
12.04.2023
20.04.2023
21.04.2023
26.04.2023
27.04.2023
04.05.2023
05.05.2023
10.05.2023
11.05.2023
16.05.2023
17.05.2023
25.05.2023
26.05.2023
Date
NO2
SO2


Concentration of PM10 and PM2.5 at Sekilnatham
Concentration
50
45
40
35
30
25
20
15
10
5
0
06.03.2023
07.03.2023
15.03.2023
16.03.2023
23.03.2023
24.03.2023
27.03.2023
28.03.2023
05.04.2023
06.04.2023
11.04.2023
12.04.2023
20.04.2023
21.04.2023
26.04.2023
27.04.2023
04.05.2023
05.05.2023
10.05.2023
11.05.2023
16.05.2023
17.05.2023
25.05.2023
26.05.2023
Date
PM10
PM 2.5


Concentration of SO2 and NO2 at Sekilnatham
Concentration
20
18
16
14
12
10
8
6
4
2
0
06.03.2023
07.03.2023
15.03.2023
16.03.2023
23.03.2023
24.03.2023
27.03.2023
28.03.2023
05.04.2023
06.04.2023
11.04.2023
12.04.2023
20.04.2023
21.04.2023
26.04.2023
27.04.2023
04.05.2023
05.05.2023
10.05.2023
11.05.2023
16.05.2023
17.05.2023
25.05.2023
26.05.2023
Date
NO2
SO2


Concentration of PM10 and PM2.5 at Gandhinagar
Concentration
60
50
40
30
20
10
0
06.03.2023
07.03.2023
15.03.2023
16.03.2023
23.03.2023
24.03.2023
27.03.2023
28.03.2023
05.04.2023
06.04.2023
11.04.2023
12.04.2023
20.04.2023
21.04.2023
26.04.2023
27.04.2023
04.05.2023
05.05.2023
10.05.2023
11.05.2023
16.05.2023
17.05.2023
25.05.2023
26.05.2023
Date
PM10
PM 2.5


Concentration of SO2 and NO2 at Gandhinagar
Concentration
30
25
20
15
10
5
0
06.03.2023
07.03.2023
15.03.2023
16.03.2023
23.03.2023
24.03.2023
27.03.2023
28.03.2023
05.04.2023
06.04.2023
11.04.2023
12.04.2023
20.04.2023
21.04.2023
26.04.2023
27.04.2023
04.05.2023
05.05.2023
10.05.2023
11.05.2023
16.05.2023
17.05.2023
25.05.2023
26.05.2023
Date
NO2
SO2



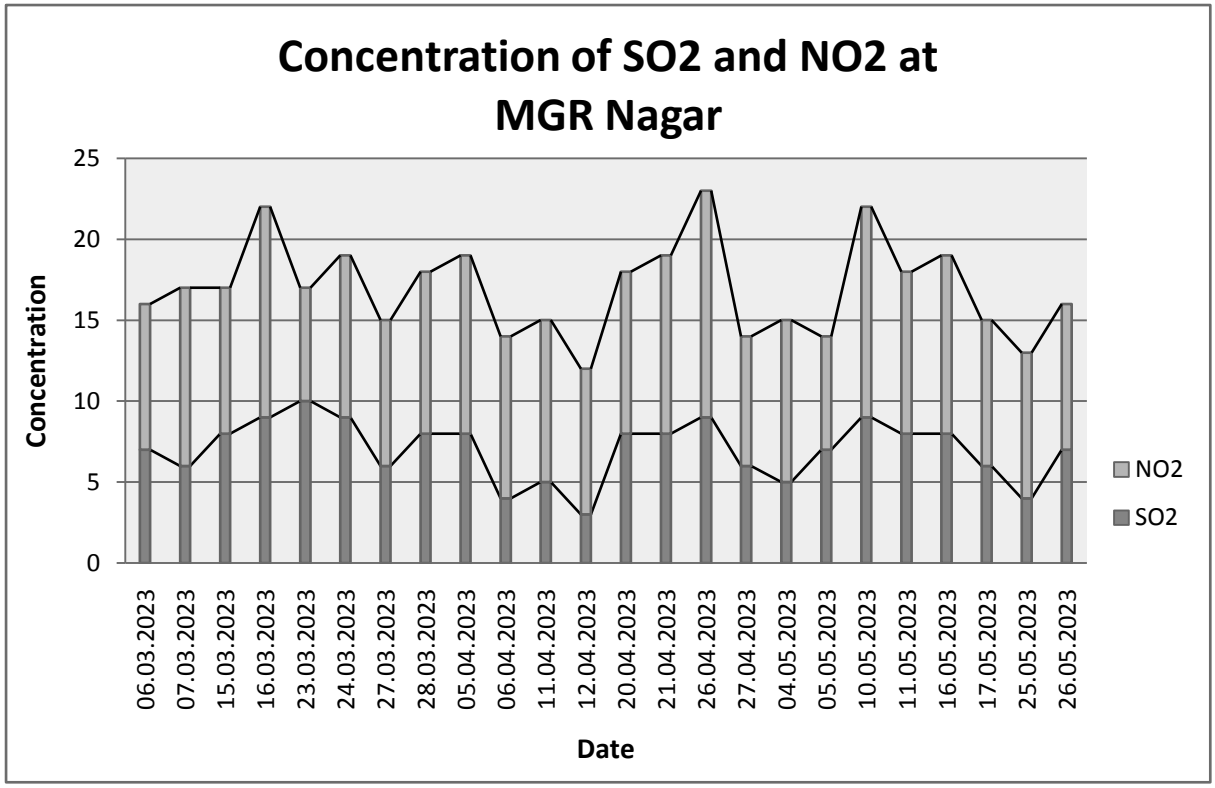


Fig No 3.4 Variation in Concentration of air pollutants

3.4.3 Observations of Primary Data

The area generally has low levels of pollutants in ambient air, which is well within the National Ambient Air Quality Standards for industrial or rural areas. This is due to the absence of any major pollution generating source in the vicinity.

- Ambient Air Quality Monitoring (AAQM) reveals that the minimum concentration of PM_{10} for all the 5 stations was found to be 38µg/m^3 at Jagadevipalayam village. The maximum concentration was observed in Core area and Sekilnatham as 52µg/m^3. The average PM_{10} level at all stations varies from 42µg/m^3 to 46µg/m^3

- The average $PM_{2.5}$ level at all stations varies from 23µg/m^3 to 26µg/m^3. The minimum concentrations of $PM_{2.5}$ for all the 5 stations were found to be 17µg/m^3 at Sekilnatham and Core, Jagadevipalayam village as 18µg/m^3. The maximum concentration was found to be 30µg/m^3 at Core Zone.

- The maximum concentrations of SO_2 were found to be 13µg/m^3 at Sekilnatham & Gandhi nagar villages. The minimum concentration was found to be 3µg/m^3 at MGR Nagar village. The average SO_2 level at all stations varies from 7µg/m^3 to 10µg/m^3

- The minimum NOx concentrations were recorded as 7µg/m^3 at three villages such as Jagadevipalayam, Sekilnatham, Gandhinagar village and MGR Nagar, Bargur. The maximum concentration was found to be 18µg/m^3 at Core & Jagadevipalayam Zone. The average NOx level at all stations varies from 10µg/m^3 to 14µg/m^3. The concentration levels of the above pollutants were observed to be well within the limits of AAQS prescribed by CPCB.

3.5 NOISE ENVIRONMENT

A preliminary reconnaissance was undertaken to identify the major noise generating sources in the area. Nine locations (Core Zone & Buffer Zone) were identified based on the activities in the study area, traffic and sensitive areas like hospitals and schools. The noise monitoring locations are shown in Fig No. 3.5 & 3.6. The sampling locations are shown in Table No. 3.3.

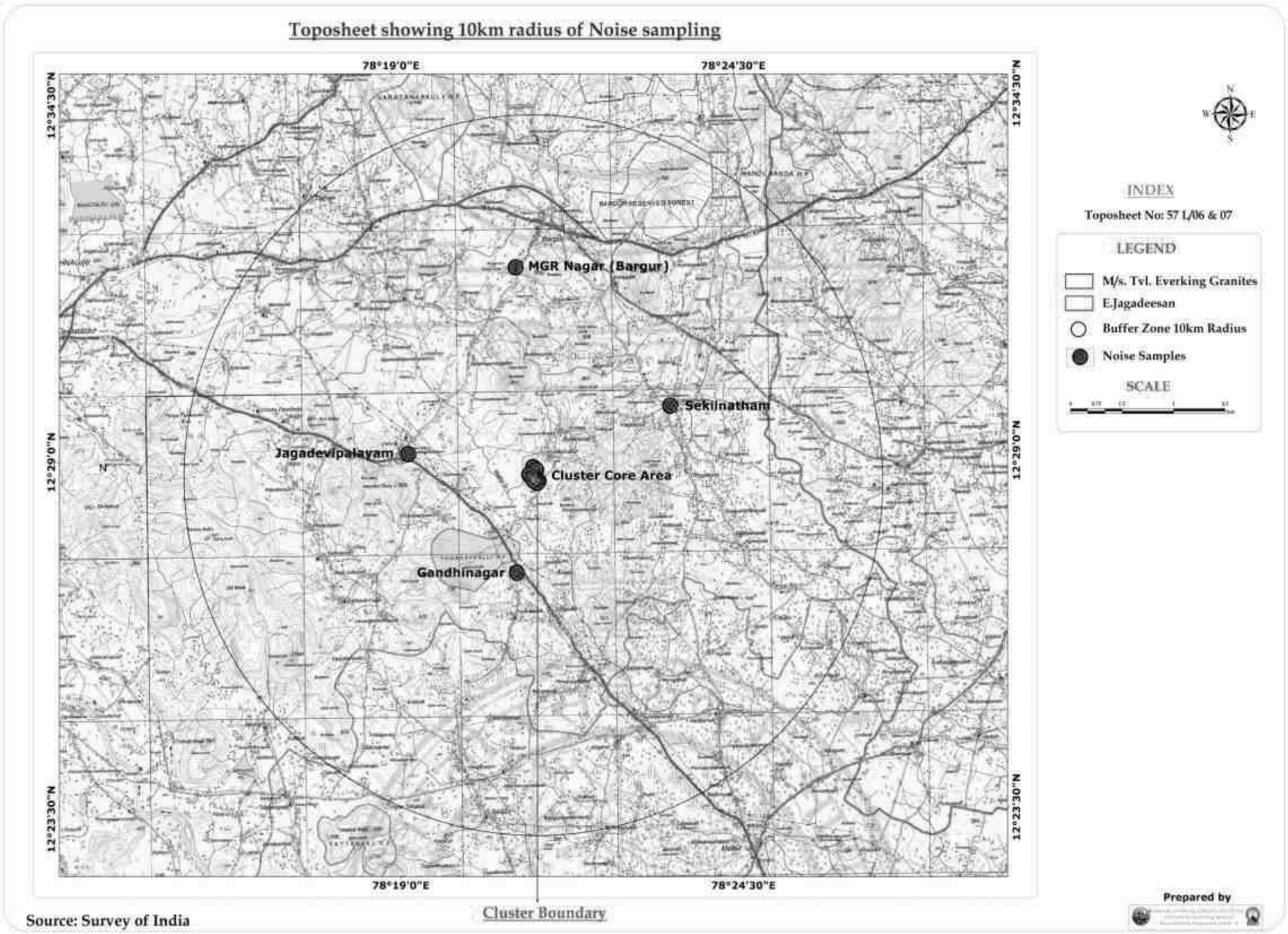


Fig No 3.5 Geo Referenced Toposheet showing Noise sampling stations around 10km radius

Table 3.3 Noise Sampling Locations

Sl. No	Location	Station code	Distance (km)	Direction
1	Core area - **Tvl. Everking Granites**	NQ1	--	--
	Lease boundary pillar (North)	NQ2	0.1	N
	Lease boundary pillar (South)	NQ3	0.1	S
	Lease boundary pillar (East)	NQ4	0.1	E
	Lease boundary pillar (West)	NQ5	0.1	W
2	Core area- **Thiru.E.Jagadeesan**	NQ6	0.1	--
	Lease boundary pillar (North)	NQ7	0.1	N
	Lease boundary pillar (South)	NQ8	0.1	S
	Lease boundary pillar (East)	NQ9	0.1	E
	Lease boundary pillar (West)	NQ10	0.1	W
3	Jagadevipalayam	NQ11	3.5	W
4	Sekilnatham	NQ12	4.2	E
5	Gandhinagar	NQ13	2.6	S
6	MGR Nagar (Bargur)	NQ14	5.6	N

3.5.1 Method of Monitoring

One reading per hour was taken for 24 hours. The day time noise levels were monitored during 6 am to 10 pm and night time levels during 10 pm to 6 am at all the monitoring locations within the study area (Table 3.4).

Table 3.4 Noise Monitoring Results in Core and Buffer Zone

Sample code	Location	Decibel dB (A)		TNPCB Standards
		Day Time	Night Time	
NQ1	Core area - **Tvl. Everking Granites**	36.7	36.1	Industrial Day Time- 75 dB(A) Night Time – 70 dB(A)
NQ2	Lease boundary pillar (North)	37.8	37.5	
NQ3	Lease boundary pillar (South)	36.2	35.5	
NQ4	Lease boundary pillar (East)	39.5	39.4	

NQ5	Lease boundary pillar (West)	41.3	40.9	Residential Day Time - 55 dB(A) Night Time - 45 dB (A)
NQ6	Core area- **Thiru.E.Jagadeesan**	27.8	27.1	
NQ7	Lease boundary pillar (North)	29.6	28.2	
NQ8	Lease boundary pillar (South)	40.7	35.6	
NQ9	Lease boundary pillar (East)	28.0	27.1	
NQ10	Lease boundary pillar (West)	32.5	30.6	
NQ11	Jagadevipalayam	44.5	34.5	
NQ12	Sekilnatham	41.9	37.2	
NQ13	Gandhinagar	42.6	39.1	
NQ14	MGR Nagar (Bargur)	47.4	40.2	
Remarks	Day Time	Leq (6.00 AM to 10.00 PM)		
	Night Time	Leq (10.00 PM to 6.00 AM)		

(a) Noise monitoring locations at Core Zone

(b) Noise monitoring locations at Buffer Zone

Fig No 3.6 Noise Monitoring at Lease and Buffer

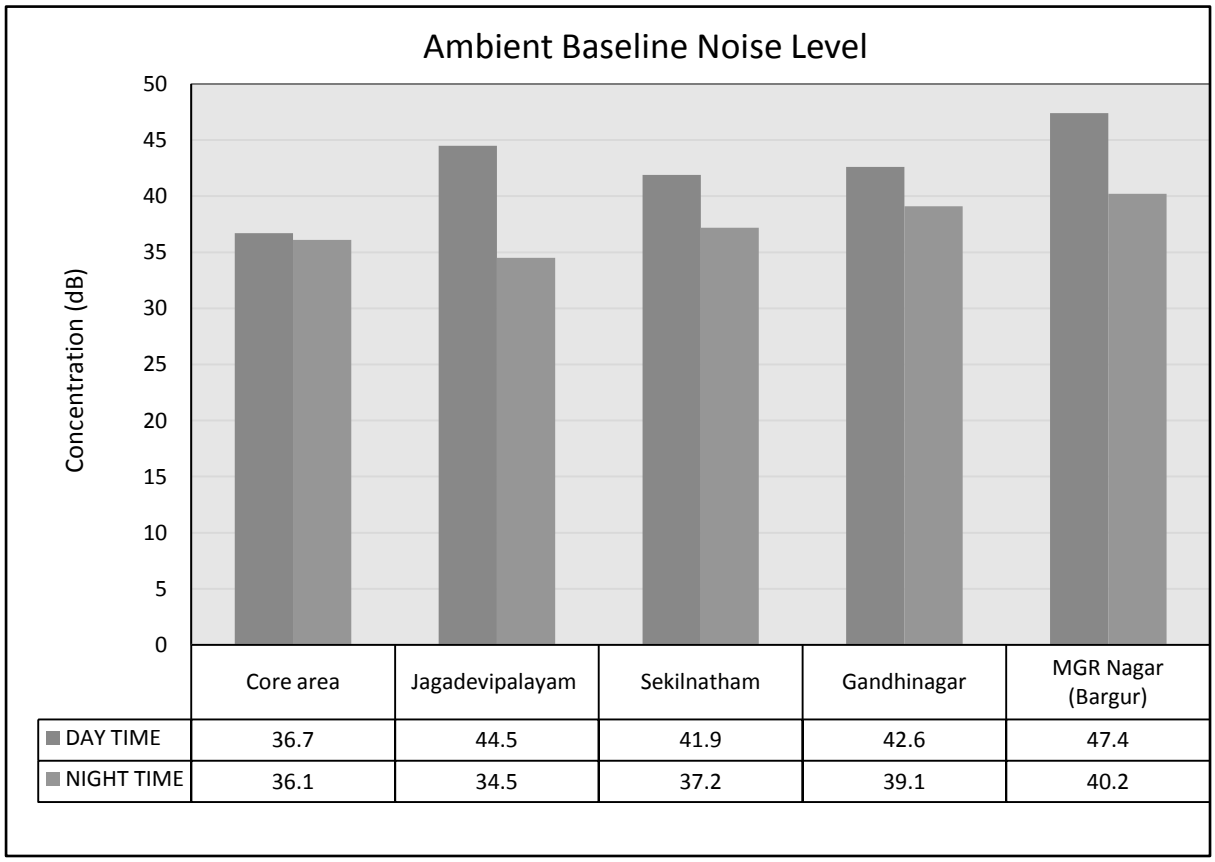
3.5.2 Observations

3.5.2.1 Day Time Noise Levels

Noise Monitoring reveals that the maximum & minimum noise levels at day time were recorded as 47.4 dB (A) at MGR Nagar (Bargur) (NQ-14) & 41.9 dB (A) at Sekilnatham (NQ-12) respectively in buffer zone. The minimum and maximum noise level at core area - **Tvl. Everking Granites** is 36.2 dB (A) and 41.3 dB (A) and in Core area - **Thiru.E.Jagadeesan** is 27.8 dB (A) and 40.7 dB (A) respectively. The Noise level measured is found within the permissible limits during day time as specified by CPCB Standard.

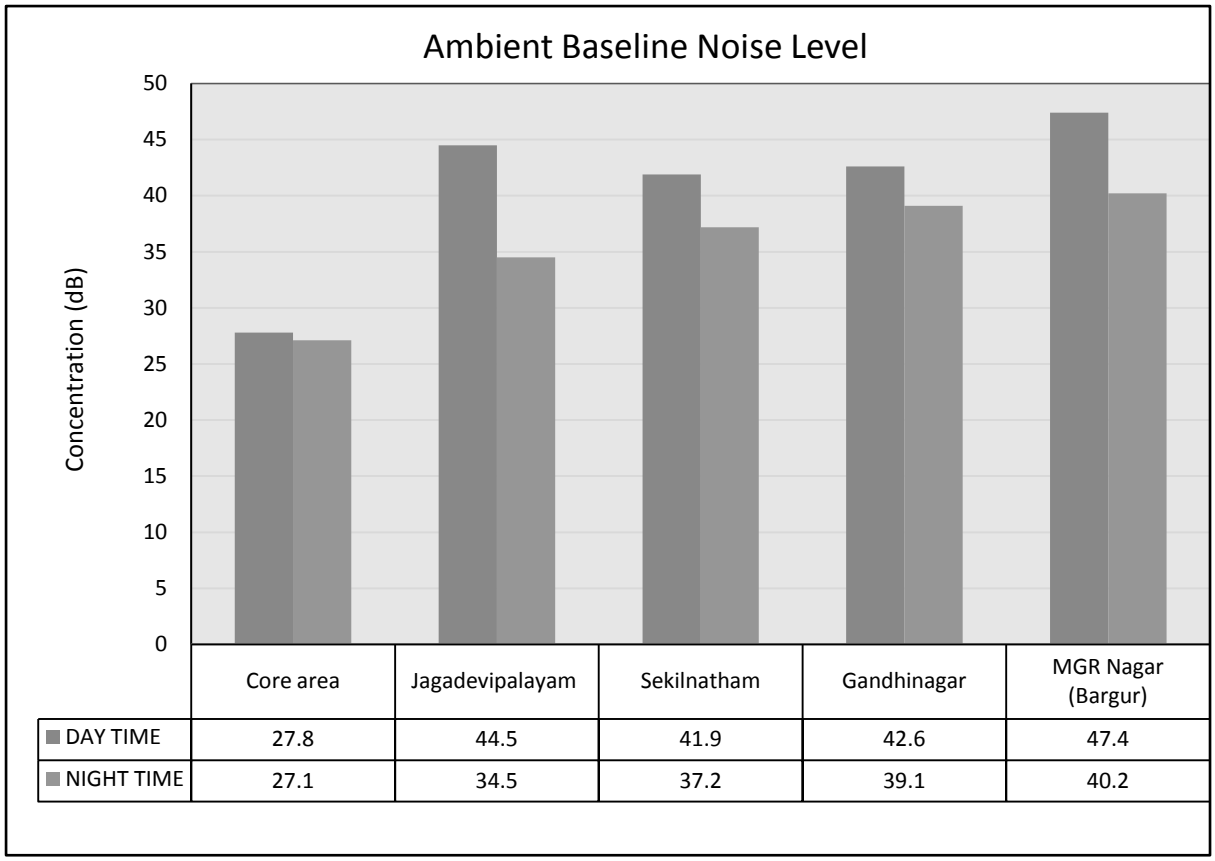
3.5.2.2 Night Time Noise Levels

The night time noise levels, the maximum & minimum noise levels at Night time were recorded as 40.2 dB (A) at MGR Nagar (Bargur) (NQ-14) & 34.5 dB (A) at Jagadevipalayam (NQ-11) respectively in buffer zone. The minimum and maximum noise level at core area - **Tvl. Everking Granites** is 35.5 dB (A) and 40.9 dB (A) and in Core area - **Thiru.E.Jagadeesan** is 27.1 dB (A) and 35.6 dB (A) respectively. The Noise level measured is found within the permissible limits during night time as specified by CPCB Standard.



	Core area	Jagadevipalayam	Sekilnatham	Gandhinagar	MGR Nagar (Bargur)
DAY TIME	36.7	44.5	41.9	42.6	47.4
NIGHT TIME	36.1	34.5	37.2	39.1	40.2

Fig No 3.7 Noise Level of the Study Area - Tvl. Everking Granites



	Core area	Jagadevipalayam	Sekilnatham	Gandhinagar	MGR Nagar (Bargur)
DAY TIME	27.8	44.5	41.9	42.6	47.4
NIGHT TIME	27.1	34.5	37.2	39.1	40.2

Fig No 3.7(a) Noise Level of the Study Area - Thiru.E.Jagadeesan

3.6 Water Environment

Assessment of baseline data on Water environment includes:
a) Identification of surface and ground water sources
b) Collection of water samples
c) Analyzing water samples collected for Physico–chemical and biological parameters

3.6.1 Selection of Sampling Stations

The samplings were taken from the identified monitoring locations within the 10km radius of the study area. Water samples were collected to study the water quality of the study area.

3.6.2 Water Quality

Water samples from various locations in and around the project site within 10 km radius were collected for assessment of the physic-chemical and bacteriological quality to know the baseline status of water quality. Parameters for analysis of water quality were selected based on the utility of the particular source of water as per

MoEF & CC guidance. Methodologies adopted for sampling and analysis of water in according to the Bureau of Indian Standards. The parameters thus analyzed were compared with IS10500:2012. Details of water sampling locations are present in Table 3.5. In addition, water quality details are given in the Table 3.6. The following image of Geo referenced Topomap showing locations of water samples are given in the Figure No. 3.8. Locations of Core and Buffer Zone water samples are given in the Figure No. 3.9.

Table 3.5 Water Sampling Locations

Sampling Code	Location	Surface/ Ground water	Latitude	Longitude	Distance (km)	Direction
WQ1	Core Zone	Ground Water	12°28'32.74"N	78°21'11.89"E	_	_
WQ2	Jagadevipalayam	Ground Water	12°29'14.32"N	78°19'8.09"E	3.7	W
WQ3	Sekilnatham	Ground Water	12°29'42.63"N	78°23'36.53"E	4.6	E
WQ4	Gandhinagar	Ground Water	12°27'10.92"N	78°21'7.10"E	2.7	S
WQ5	MGR Nagar (Bargur)	Ground Water	12°31'39.36"N	78°20'44.86"E	5.2	N

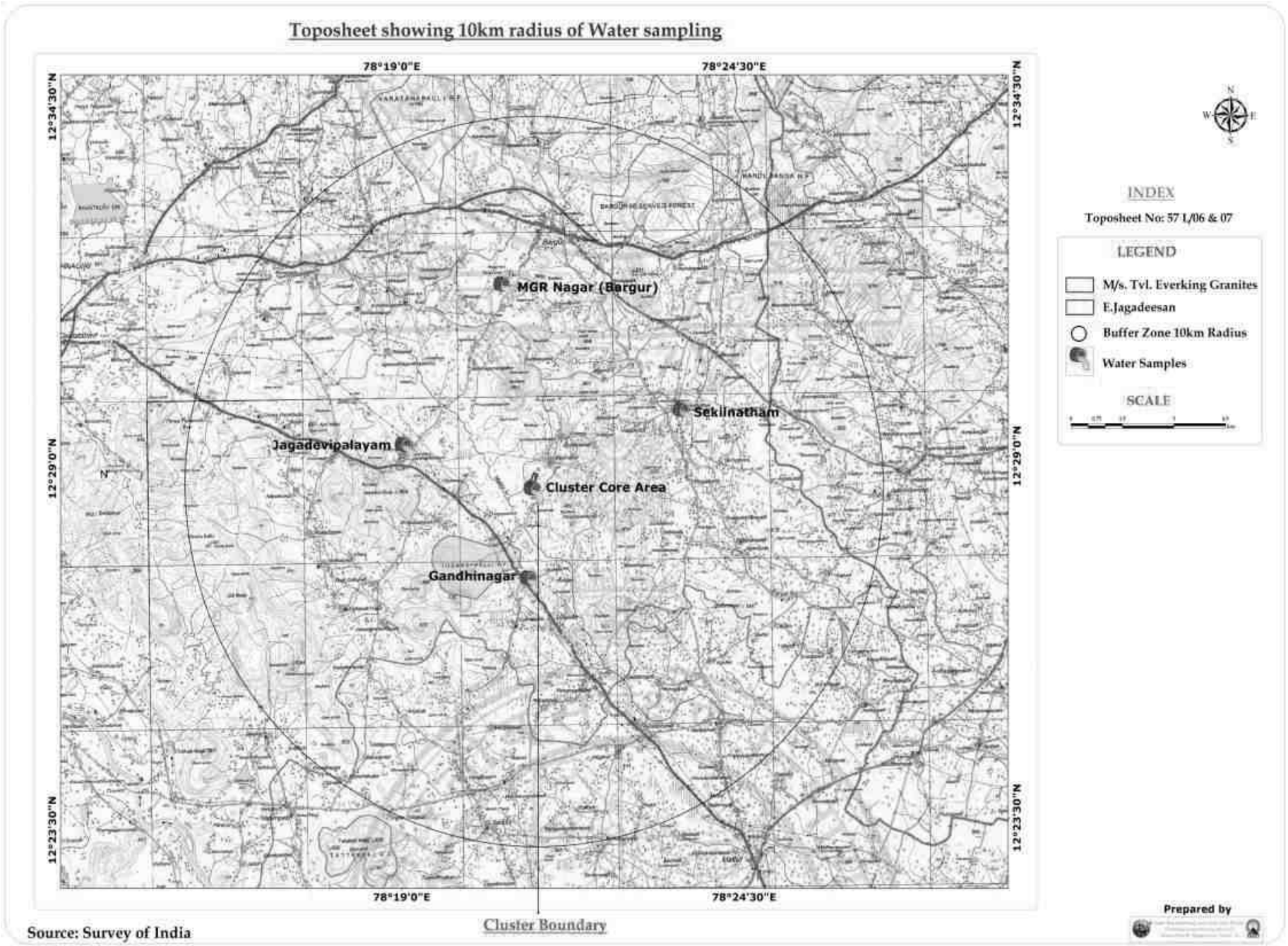


Fig No 3.8 Geo Referenced Toposheet showing water sampling station around 10km radius

Fig No 3.9 Water Sample Collection at Core and Buffer Zone

Table 3.6 Result of Water Quality Analysis

Parameters	Units	As per IS 10500:2012		PROTOCOL: IS Methods	Core Zone	Buffer Zone			
		Requirement (Acceptable limit)	Permissible limit in the absence of alternate source			Jagadevi-palayam	Sekilna-tham	Gandhi-nagar	MGR Nagar
pH value at 25°C	-	6.5 – 8.5	6.5 – 8.5	IS 3025:P.11: 1983:R.2019	7.10	7.08	7.20	7.59	7.10
Electrical conductivity at 25°C	Micro mhos/ cm	-	-	IS 3025:P.14: 1984:R.2019	1226	991	1235	1661	1412
Turbidity	NTU	1	5	IS 3025:P.10: 1984:R.2017	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)
Temperature	^{0}C	-	-	IS 3025:P.09: 1984:R.2017	25	25	25	25	25
Total Suspended Solids (TSS)	mg/l	-	-	IS 3025:P.17: 1984:R.2017	2	2	2	2	1
Total Dissolved Solids (TDS)	mg/l	500	2000	IS 3025:P.16: 1984:R.2012	686	600	704	1020	819
Total Hardness as $CaCO_3$	mg/l	200	600	IS 3025:P.21: 2009:R.2019	228	333	389	500	488
Calcium as Ca	mg/l	75	200	IS 3025:P.40: 1991:R.2019	67	142	142	214	160
Magnesium as Mg	mg/l	30	100	IS 3025:P.46: 1994:R.2019	14	3	3	8	21

Chloride as Cl^-	mg/l	250	1000	IS 3025:P.32: 1988:R.2019	57	210	267	505	248
Total Alkalinity as $CaCO_3$	mg/l	200	600	IS 3025:P.23: 1986:R.2019	525	100	150	200	150
Carbonate	mg/l	-	-	IS 3025:P.51: 1986:R.2017	BDL (DL:0.1)	BDL (DL:1)	BDL (DL:1)	BDL (DL:1)	BDL (DL:1)
Bicarbonate	mg/l	-	-	IS 3025:P.51: 1986:R.2017	525	100	150	200	150
Sulphate	mg/l	200	400	IS 3025:P.24: 1986:R.2019	20	12	16	24	19
Iron	mg/l	0.3	0.3	IS 3025:P.53: 1984:R.2017	0.08	0.06	0.07	0.08	0.08
Total Coliforms	MPN / 100ml	Shall not be detectable in any100 ml		IS:1622-1981 Amd.4 RA 2012	17	13	17	26	21
E.coli	MPN / 100ml	Shall not be detectable in any100 ml		IS:1622-1981 Amd.4 RA 2012	<2	<2	<2	<2	<2

3.6.3 Interpretation of Water Quality Data

Water Quality results were compared with acceptable limits for Drinking Water as per the Standard IS 10500:2012. All the parameters of Water samples meet the acceptable limits of IS 10500: 2012 and found to be within the limits.

- pH of the water samples ranged from 7.10-7.59. pH in water samples collected from the locations are within the permissible limit between 6.5-8.5.
- EC of the water samples ranged from 991 to 1661 Micro mhos/cm in the samples collected.
- Turbidity from the water samples collected from both core and buffer area was observed to be in below detectable limit BDL (DL: 0.1).
- Total suspended solids are observed as 1-2 mg/l in all the water samples collected from both core and buffer area.
- Total Dissolved Solids found in the range of 600-1020 mg/l. In all the samples TDS was found beyond the acceptable limit of 500mg/l and maximum value of 1020 mg/l was recorded at Gandhi nagar Village.
- Total Hardness of water sample of all the locations including core and buffer zone was found exceeding the acceptable limit of 500 mg/l. The maximum value of 500 mg/l was found in Gandhi Nagar village and minimum value of 228 mg/l was observed in core zone.
- Calcium value observed in entire buffer locations were in the range of 142-214 mg/l, exceeds the acceptable limit of 75 mg/l as per Drinking water standards. Whereas in core zone the value was observed to be 67 which is well within the limit of 75 mg/l.
- Magnesium value recorded in all the locations including the core zone was within the limit of 3-21 mg/l and found to be within the acceptable limit of 30 mg/l.
- Chlorides in all the water samples were recorded and highest chloride concentration found in Gandhi Nagar Village and was found above the acceptable limit. In other villages the values observed were within limits. The observed value was within the range of 57-505 mg/l.
- Iron & Sulfates in water samples collected from both core and buffer location were observed to be well within the limits.
- On Microbiological parameters, the water sample from both the villages has few counts of Total Coliform as the count is observed as 17-26 MPN/100ml. E.coli was found to be absent in all the villages. In account of the microbial quality the water without disinfection is not advised for drinking purposes.

3.7 Hydro Geology

3.7.1 Hydrogeological details of Bargur Taluk

Hydrogeology of the Bargur Taluk consists weathered and fractured Archaean crystalline rocks construct the major aquifer systems. Generally, the groundwater occurs under phreatic conditions in the weathered formation and under semi-confined conditions in the fractured zones at deeper levels. The occurrence and movement of ground water are controlled by various factors such as physiography, Rainfall, climate, geology and structural features. The normal annual rainfall over the district varies from about 750 to about 900 mm.

3.7.2 Scope of the study

- To understand the aquifer characteristics by pumping test
- To delineate the fresh groundwater potential zone and sub surface lithology using electrical resistivity method

3.7.3 Geophysical Investigation Method

Geophysical methods are the irreplaceable tools to explore subsurface with an economical expense of energy, money and man power. A variety of methods are available to assist in the assessment of ground water table, aquifer geometry and sub-surface geological conditions. The main emphasis of the fieldwork undertaken was to determine the thickness and composition of the sub-surface formations and to identify water-bearing zones. This information was principally obtained in the field using vertical electrical soundings (VES), this method is described below.

If a material having a resistant of R, cross-sectional area of A, and length of L, then resistivity is given

$$R = \frac{V}{I}$$

In resistivity method three quantities are to be measured at each observation point. One is mutual separation between the electrodes that is “geometric configuration”. The other two are the current (I) passed into the ground through the current electrodes and potential difference (V) developed between the potential electrodes. Thus two pairs of electrodes are used, one pair for sending the current and the other

for recording the voltage. Thus we need to have a current source and a potentiometer.

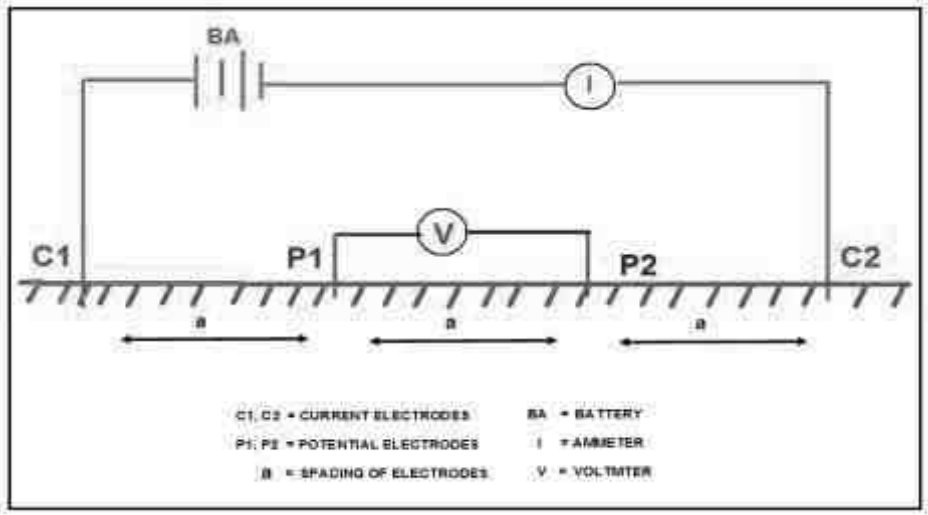


Fig No 3.10 Geometrical pattern of Electrodes

A geometrical pattern of electrodes used in vertical electrical sounding, constant separation traversing, and induced polarization surveys. During a resistivity sounding, the separation between the two current electrodes is step-wise increased (in what is known as a Schlumberger Array), thus causing the flow of current to penetrate greater depths. When plotting the observed resistivity values against depth on a graph sheet, a resistivity graph is formed, which shows the variation of resistivity with depth. This graph can be interpreted with the aid of a computer and the actual resistivity layering of the subsoil is obtained. The depths and resistivity values provide the hydro geologist with information on the geological layering and thus the occurrence of groundwater.

3.7.4 Geophysical Survey of Tvl. Everking Granites and Thiru.E.Jagadeesan - Site Investigations

In general the groundwater prospects are less in hard rock areas, especially in granitic terrains. The deeper aquifers in hard rock terrains have potential only when they are fed by fractures and thick weathered layer. Data collection is another important factor for the success of resistivity method. The interpretation of resistivity data four layer master curve matching technique has been used.

The geological and hydrogeological setting of the area is relatively favorable for groundwater accumulation at deeper strata with respect of 1D resistivity investigations and their results shown in Fig No.3.10. The interpreted of the VES data

Thickness of top soil and weathered rock 4.9 meters with respective resistivity value of 140.5 Ωm and the resistivity value of 12352 Ωm represent a massive granite extended below at depth of 4.9m. Where the low resistivity 42.12 Ωm observed third layer the curve shown is gradually down trend at the depth of 80m shows the favorable Groundwater potential zone has been delineated with respect to the recommendable resistivity of 50 Ωm to 150 Ωm.

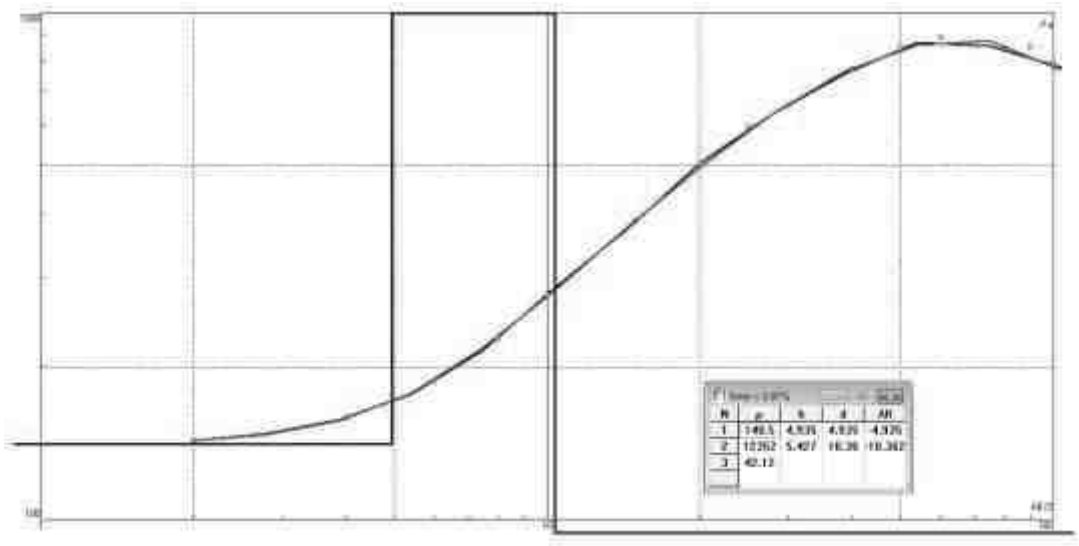


Fig No.3.11 1D VES Data of Jagadevipalayam

Layer	Depth (m)	Nature of formation	Resistivity Value
h1	0–4.9	Top soil & Weathered formation	140
h2	4.9-79.5	Massive granitic formation	12352
h3	79.5 - 80	Fractured zone	42.12

3.7.5 Aquifer Performance Test

Aquifer performance tested (APT) to assess the groundwater potential of the hard rock terrain. There are few bore wells in the 10 km radius buffer zone. One of the bore well is located is reported to be 320.0 meter depth and gives moderate yield. The bore well is fitted with 10 HP submergible pumps and water is pumped using for Agriculture purpose.

Aquifer Performance Test (APT) is a pumping test which is a field experiment in which a well is pumped at a constant discharge and water level response (Drawdown) is

measured in one or more observation wells as well as in the pumped well. These data of pumping test are used to estimate the hydraulic properties like drawdown transmissivity was determined using Jacob's straight-line method, while the recovery transmissivity was determined by the Theis recovery method.

Aquifer Performance Test was conducted in pumping well with constant discharge of 4.37 lps for 100 minutes pumping duration. The depth to water level was 40.31 m bmp. The recuperation data was collected for duration of 100 minutes. The data plot showing Time V/s Drawdown and Residual Drawdown V/s t/t'- shown in Fig No.3.10. The pumping test is conducted in the bore well on 24th April 2023 and the drawdown and recovery data are given in Table 3.7.

Parameter	:	Observations
Date	:	24.04.2023
Static Water Level (m)	:	40.31
Duration of the test(Time in min)	:	100
Discharge (Q) m^3 /day	:	374.9
Total Drawn down (m)	:	11.01
Specific capacity (lpm/m)	:	34.05
Transmissivity (Jacob method) m^2/day	:	19.61
Transmissivity (Theis recovery method) m^2 /day	:	13.73

Table 3.7 Drawdown and Recovery data

Village Name			Jagadevipalayam				
Depth of the well			320.0 m				
Static water level			40.30m				
Discharge lps			4.34 lps				
Discharge (Q m^3/day)			374.9 m^3/day				
Time since pump started (min)	**Depth to water (m)**	**Drawdown (m)**	**Time (t)**	**Time since pump stopped (min) (t')**	**Depth to water (m bgl)**	**Residual Drawdown (m bgl)**	**t/t'**
0	40.30	0	100	0	51.32	11.01	0

1	41.81	1.5	101	1	50.67	10.36	101.00
2	43.3	2.99	102	2	49.96	9.65	51.00
3	44.81	4.5	103	3	49.78	9.47	34.33
4	46.3	5.99	104	4	48.59	8.28	26.00
5	46.8	6.49	105	5	47.88	7.57	21.00
6	47.32	7.01	106	6	47.27	6.96	17.67
7	47.93	7.62	107	7	46.69	6.38	15.29
8	48.13	7.82	108	8	46.09	5.78	13.50
9	48.31	8	109	9	45.58	5.27	12.11
10	48.5	8.19	110	10	45.06	4.75	11.00
12	48.72	8.41	112	12	44.57	4.26	9.33
14	48.97	8.66	114	14	44.16	3.85	8.14
16	49.12	8.81	116	16	43.77	3.46	7.25
18	49.33	9.02	118	18	43.38	3.07	6.56
20	49.51	9.2	120	20	43.07	2.76	6.00
25	49.66	9.35	125	25	42.78	2.47	5.00
30	49.8	9.49	130	30	42.49	2.18	4.33
35	49.92	9.61	135	35	42.18	1.87	3.86
40	50.06	9.75	140	40	41.88	1.57	3.50
45	50.22	9.91	145	45	41.67	1.36	3.22
50	50.36	10.05	150	50	41.45	1.14	3.00
55	50.51	10.2	155	55	41.23	0.92	2.82
60	50.66	10.35	160	60	41.02	0.71	2.67
70	50.82	10.51	170	70	40.81	0.5	2.43
80	50.96	10.65	180	80	40.65	0.34	2.25
90	51.17	10.86	190	90	40.5	0.19	2.11
100	51.32	11.01	200	100	40.4	0.09	2.00

Estimation of the hydraulic parameters is very essential to optimal management of this resource. The hydraulic parameters are estimated from pumping test carried out on Jagadevipalayam village which showed that the transmissivity T values ranged from Jacob method 19.61 m^2/day and Theis recovery method 13.73 m^2 /day. The result of the pumping test data shows that there are limited groundwater prospects in the region which certainly needs careful planning and management of the available water resource.

3.7.6 Computation of Transmissivity of Pumping Well

By Jacobs Method

Transmissivity calculated from Drawdown vs time data plots.

.

$T = 2.3\ Q/4\pi\Delta s$

$Q = 374.9\ m^3/day$

$\Delta s = 3.5\ m$

$$T = \frac{2.3 \times 374.9}{4 \times 3.14 \times 3.5}$$

$T = 19.61\ m^2/day$

By Theis Method

Transmissivity calculated from Residual Drawdown vs t/t' data plots.

$T = 2.3\ Q/4\pi\Delta s$

$Q = 374.9\ m^3/day$

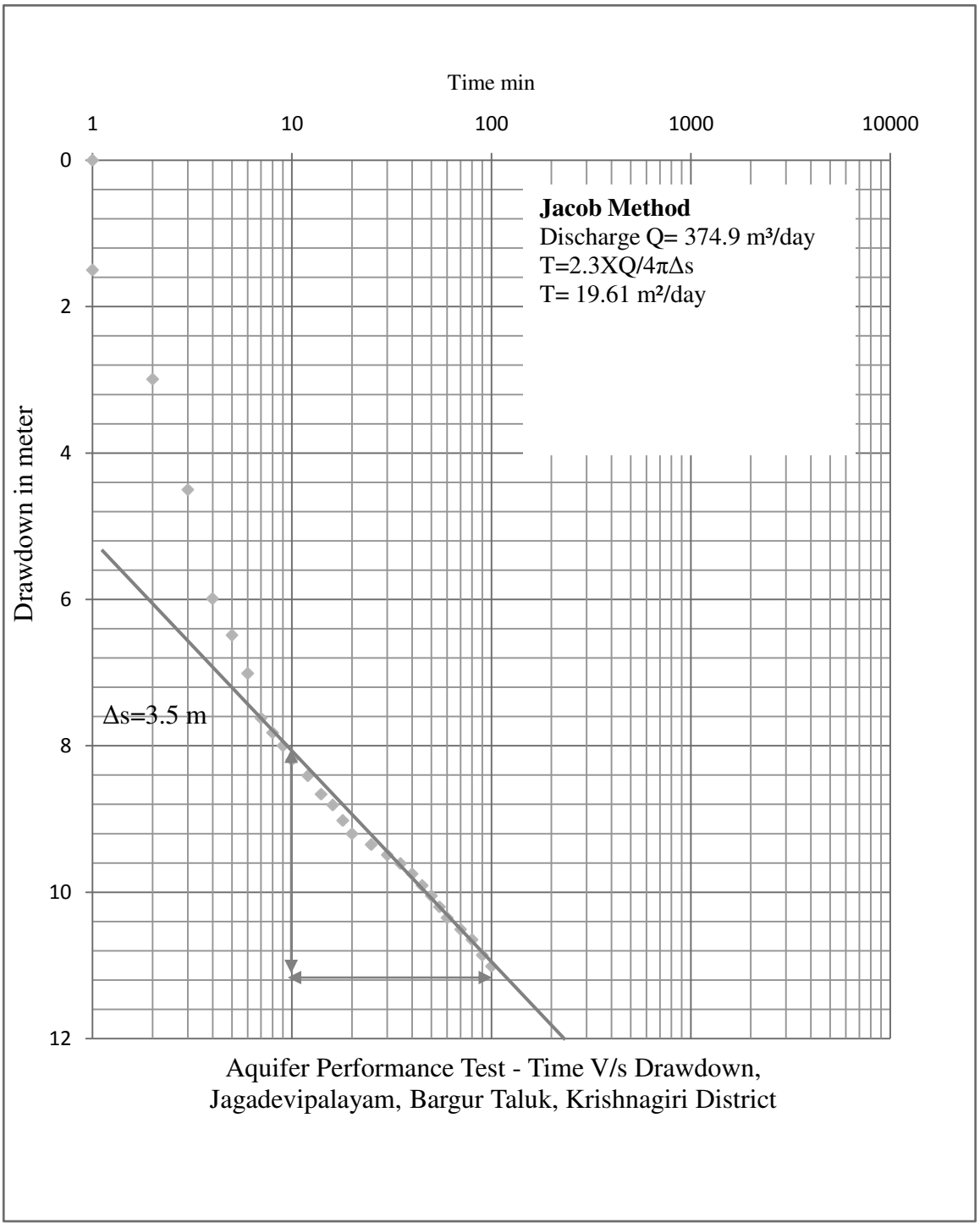
$\Delta s = 5.0\ m$

$$T = \frac{2.3 \times 374.9}{4 \times 3.14 \times 5.0}$$

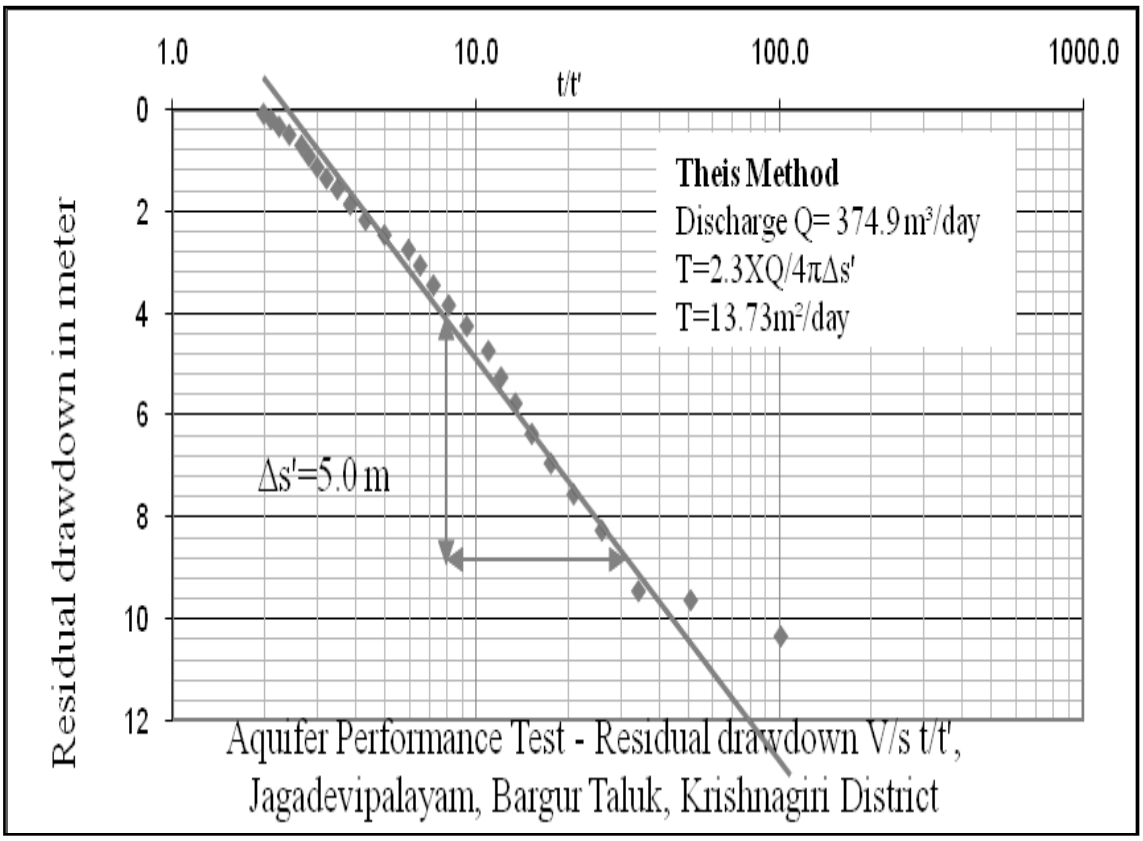
$T = 13.73\ m^2/day$

3.7.7 Conclusion

An integrated approach of pumping test and Vertical electrical resistivity survey (VES) method is helped to understand the groundwater potential zones, ground water table, aquifer geometry and direction of groundwater movement and subsurface lithology variations. Present scenario is first aquifers Zone identified 80m bgl and the hydrological condition 10 km radius of buffer zone depth to the static water levels of the aquifer ranges from 40.31 to 65.60 m bgl. The approved mining plan pit limit depth is 36.0m bgl which will have no impact on direct or indirect effect of mining Activity on groundwater resource.



Aquifer Performance Test data plot- Time V/s Drawdown of Jagadevipalayam



Aquifer Performance Test data plot - Residual Drawdown V/s t/t' of Jagadevipalayam

Fig No.3.12 Aquifer Performance Test (APT) of Jagadevipalayam Pumping Well

3.8 Soil Environment

The type of soil is an important factor for the growth of plants and crops in any area. The soil system has various criteria to classify the soils of a region such as geology, humidity, rainfall pattern, soil texture, soil salinity etc.

Soil quality study has been carried out at the site and in the study area of 10 km radius around the project site to understand the physical-chemical nature of the soil. Soil sampling was carried out at 3 selected locations.

The frequency and methodology of soil quality sampling process is given in Table No.3.8. Moreover, Georeferenced soil Map of around 10 km radius is given in Fig No.3.13. Table 3.8(a) presents the soil quality monitoring locations of the study area. The sampling was carried out once in the study period.

Table 3.8 Frequency and Methodology for Soil sampling & monitoring

S.No	Particulars	Details
1	Frequency	One sample from each station— once during the Study Period
2	Methodology	Soil Sample has been collected as per the CPCB standard

3.8.1 Methodology of Soil Environment

Soil samples were collected from different depth below the surface. The samples were filled in polythene bags, labeled in the field with number and site name and sent to laboratory for analysis. The samples were homogenized and the quality was reduced using the coning and quartering method to provide a respective sample for analysis. The samples were analyzed as per Indian Standards IS: 2720 (Revised Parts).

- To determine the baseline soil characteristics of the study area
- To determine the impact of the project on soil characteristics and
- To determine the impact on soils more importantly loss of fertility from agricultural productivity point of view.

Table 3.8 (a) Soil Sampling Locations

CODE	Place	Latitude (N)	Longitude (E)	Distance w.r.t Mine Site	Direction w.r.t Mine Site
SQ1	Core Zone - Tvl.Everking Granites	12°28'41.43"N	78°21'10.70"E	–	–
SQ2	Core Zone - Thiru.E.Jagadeesan	12°28'36.61"N	78°21'13.76"E	–	–
SQ3	Jagadevipalayam	12°29'27.53"N	78°19'33.76"E	3.15	W
SQ4	Sekilnatham	12°29'50.20"N	78°23'34.45"E	4.59	E
SQ5	Gandhinagar	12°27'15.94"N	78°21'12.54"E	2.57	S
SQ6	MGR Nagar (Bargur)	12°31'44.90"N	78°20'53.93"E	5.39	N

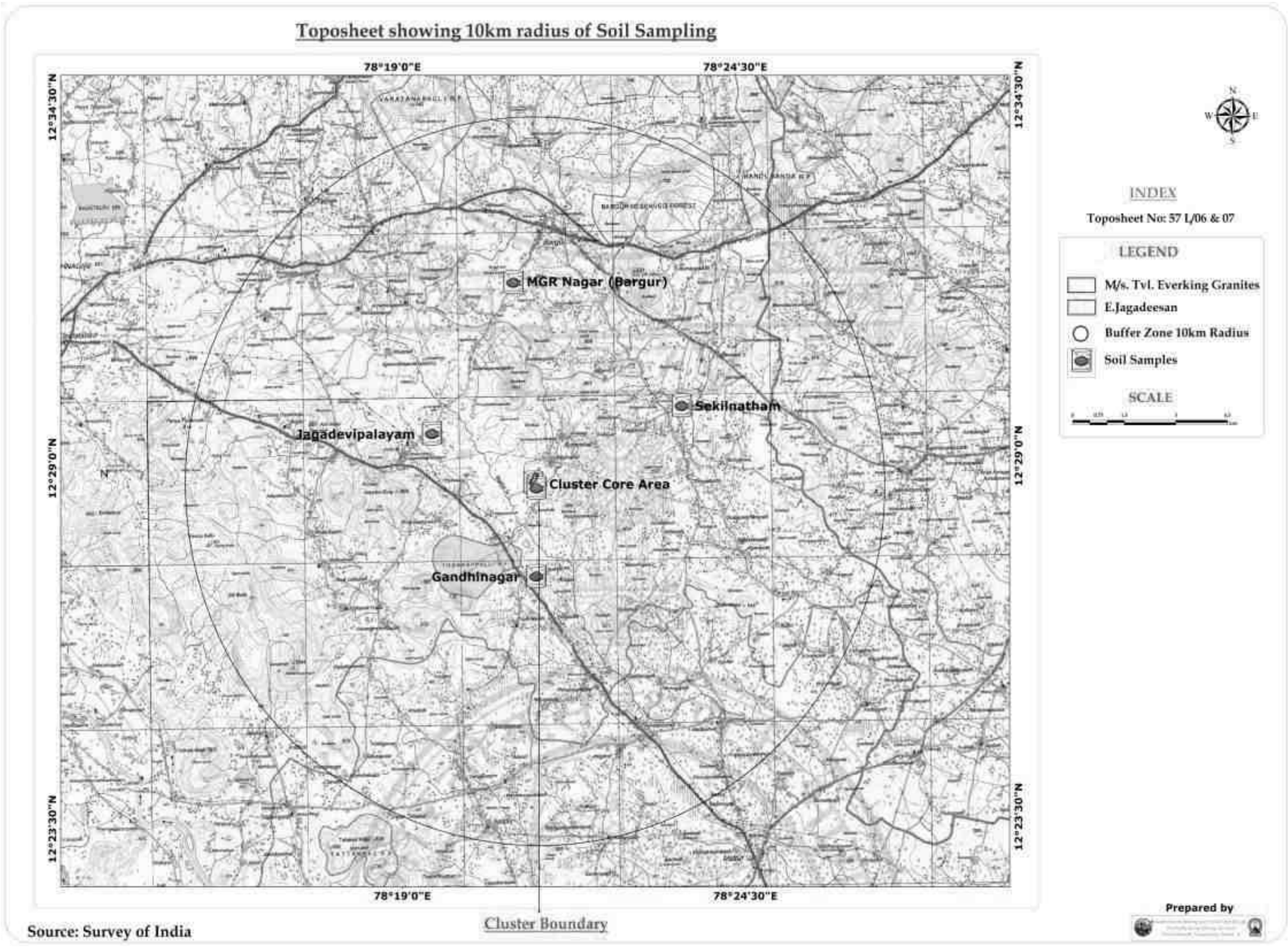


Fig No 3.13 Geo referenced Toposheet showing Soil sampling Locations around 10km radius




Fig No 3.14 Soil Sampling at Core and Buffer Zone

Table 3.9 Result of Soil Sample Analysis

S.No	Parameters		Core Zone		Buffer Zone			
			Tvl.Everking Granites	Thiru. E. Jagadeesan	Jagadevi-palayam	Sekilna-tham	Gandhi-nagar	MGR Nagar
	Physical Parameters							
1	pH Value		8.82	8.53	6.78	8.63	7.68	8.91
2	EC@25C (Micromhos/cm)		80	158	75	64	73	180
3	Moisture %		1.56	2.82	2.3	2.5	2.3	1.9
4	Bulk density g/cc		1.4	1.08	1.14	1.09	1.11	1.03
5	Texture %	Sand	54	48	60	40	36	36.66
		Silt	26	32	32	56	60	33.34
		Clay	20 (Sandy clay loam)	20 (Loam)	8 (Sandy loam)	4 (Silt loam)	4 (Silt loam)	30 (Clay loam)
	Chemical Parameters							
6	Calcium %		0.001	0.001	0.0003	0.0002	0.0002	0.0002
7	Organic Matter %		1.65	0.63	1.1	0.3	0.14	1.28
8	Magnesium %		BDL(DL:1)	BDL(DL:1)	BDL(DL:1)	BDL(DL:1)	BDL(DL:1)	BDL(DL:1)
9	Chlorides %		0.001	0.002	0.001	0.001	0.001	0.001
10	Water Holding capacity %		48	44	60	68	64	74
	BDL = Below Detectable Limit: DL = Detection Limit							

3.8.2 Observations

Soil characteristics were delineated through specific parameters viz. moisture, bulk density, texture, water holding capacity, organic matter and other parameters as depicted in Table 3.9.

pH is an important parameter indicative of alkaline or acidic nature of soil. It greatly affects the microbial population as well as solubility of metal ions and regulates nutrient availability. The pH varies from 6.78 to 8.91 in the soil samples. In MGR Nagar, Core area of Tvl. Everking Granites & Thiru. E. Jagadeesan the pH (8.91, 8.82 & 8.53 respectively) value of soil was slightly basic.

Electrical conductivity (EC), a measure of soluble salts in the soil was in the range of 64 µS/cm to 180 µS/cm.

Regular cultivation practices increase the **bulk density** of soils thus inducing compaction. This results in reduction in water percolation rate and penetration of roots through soils. The soils with low bulk density have favorable physical conditions whereas those with high bulk density exhibit poor physical conditions for agriculture crops. The bulk density of the soil samples are in the range of 1.03g/cc to 1.4g/cc respectively, which indicate favorable physical condition for plant growth.

Water holding capacity was found to be in the range of 44% to 74% in all the soil samples collected from core and buffer villages.

Organic matter present in soil influences its physical and chemical properties and is responsible for stability of soil aggregates. Organic matter was found to be in the range of 0.3- 1.65%. This shows that soil was deficient in organic matter content.

Available Chlorides content range of between 0.001-0.002 mg/kg in both core and buffer villages. **Magnesium** level of soil sample in the core zone and buffer zone was found to be BDL (DL:1) in all the soil samples collected.

Calcium content in these soils ranges between 0.0002–0.001 mg/kg thereby indicating that the soils are with low levels of available Calcium content.

3.9 ECOLOGY AND BIOLOGICAL ENVIRONMENT

3.9.1 Description of Krishnagiri District Environment

Krishnagiri district is bounded by Vellore and Thiruvannamalai districts in the East, Karnataka state in the west, Andhra Pradesh in the North, Dharmapuri District in the south. Its area is 5143 Sq. Km. This district is elevated from 300m to 1400m above the mean sea level. It is located between 11º 12'N to 12º 49'N Latitude, 77º 27'E to 78º 38'E Longitude.

Eastern part of the district experiences hot climate and Western part has a contrasting cold climate. The average rainfall is 830 mm per annum. March – June is summer season. July – November is Rainy Season and between December – February winter prevails.

3.9.2 Agriculture activities in Krishnagiri District

Krishnagiri district is one of the potential districts for cultivation of agricultural and horticultural crops. The total normal area cultivated under all crops is 224767 Hectares out of which 73046 Ha is under irrigated and 151720 ha area under rain fed crops. The important crops of Krishnagiri District are Paddy, Maize, Ragi, Banana, Sugarcane, Cotton, Tamarind, Coconut, Mango, Groundnut, Vegetables and Flowers.

Krishnagiri District is more suitable for cultivation of Horticulture crops. Other Plantation crops, medicinal plants, Fruits, Vegetables, Spices and flowers are grown well by way of its moderate climate, high altitude and fertility of the soil.

Table 3.10 Details of Important crops in Krishnagiri District

Sl. No	Common name	Scientific name	Family
1.	Groundnut	Arachis hypogaea	Fabaceae
2.	Paddy	Oryza sativa	Poaceae
3.	Cholam	Sorgham bicolor	Poaceae
4.	Cumbu	Pennisetum glaucum	Poaceae
5.	Ragi	Eleusine coracana	Poaceae
6.	Sugarcane	Saccharum officinarum	Poaceae
7.	Black gram	Vigna mungo	Fabaceae

8.	Cotton	Gossypium herbaceum	Malvaceae
9.	Groundnut	Arachis hypogaea	Fabaceae
10.	Vargu	Paspalums crobiculatum	Poaceae
11.	Gingelly	Sesamum indicum	Pedaliaceae
12.	Maize	Zea mays	Poaceae
13.	Coconut	Cocus nucifera	Arecaceae
14.	Onion	Allium cepa	Amaryllidaceae
15.	Cotton	Gossypium herbaceum	Malvaceae
16.	Green gram	Vigna radiata	Fabaceae

3.9.3 Forest resources

Krishnagiri is one among the districts of Tamil Nadu, which with natural resources having 2,024 Sq. Kms of forest cover is its unique feature. The hill ranges of this district are called by the name 'Melagiri'. The major type of forest seen here are Tropical, Deciduous forests, thorny shrubs and bamboo forest. Dense forest cover Denkanikottai region. The other region contains shrubs, hills and hillocks with bushes.

The major wild animals that are found in this district are mainly Elephants, Sambar, Spotted Deer, Gaur, Wild boar and Panther etc. The forest area of Denkanikottai Taluk forms the prime elephant habitat with lot of bamboos. This area also constitutes the Cauvery elephant reserve. This elephant reserve is constituted over and area of about 450 Sq. Kms. The bird population is also attractive at this place with beautiful bird like Paradise flycatcher. Big lakes in Anchetti and Hosur areas also attract large number of migratory birds like Painted storks, Teals etc. Apart from these birds and mammals, there are variety of butterflies, giant spiders etc. Some of these are going to be endangered list and also can be extinct in near future. Migratory butterflies also come to this place. Kodakkarai shoal forest in Denkanikottai Taluk is known for large scale migratory butterflies during a particular season then one can observe thousands of migratory butterflies passing through this forest.

The flora includes variety of timber trees like Rose wood, Teak, Sandal etc. There are hundreds of medicinal herbs, minor forest plants like nelli, kadukkai, cheekai, pungam etc. are also very much present. Another important tree namely pungam trees are found in abundance in this forest.

3.9.4 Water resources

The main rivers that flow across the district are Kaveri and South Pennar Kaveri. This enters the district from South West in Denkanikottai taluk and exists in South West direction. It forms a waterfall at Hogenakkal and joins Mettur Dam. South Pennar originates in Nandidurg of Karnataka and flows through Hosur, Krishnagiri and Uthangari Taluks as well. Vanniyar and Markanda rivers join this South Pennar.

Wells and canals are also the major sources of irrigation contributing to 81.19 and 10.71 per cent of the total area irrigated of the district respectively. Tanks accounted for less than five per cent.

Reservoirs

Krishnagiri Reservoir Project, Shoolagiri-Chinnar Reservoir, Thangaraj Reservoir, Pambar Reservoir, Kelevarapalli Reservoir Project and Baarur Tank are the sources of irrigation for our district. By all these water reservoirs 18,965 Ha of land is irrigated.

3.9.5 Study Area Ecology

A survey was conducted to study the flora around 10 km radius. Some of the information was gathered from the local habitants. All the collected data were classified to interpret the impact of pollution on the flora and fauna of that region. Survey of the mild plants as well as cultivated crop plants was made and all the available information was recorded. The primary data collected was compared with the Secondary data collected from Forest Department. There are no ecologically sensitive areas such as Biosphere reserves, Wildlife Sanctuaries, national Parks and other protected areas in or around the project site in a radius of 10 km. Generate Baseline Data from field observations.

3.9.6 Methodology of Sampling

A methodology of Sampling Flora and fauna studies were carried out during the winter season to assess the list of terrestrial plant and animal species that occur in the core area and the buffer area up to 10 km radius from the project site. No damage is created to flora and fauna during the sampling. None of the specimens

were collected as voucher specimens and for the herbarium. It is basically done through field observations only. The study of flora is conducted as per the guidelines of the Ministry of Environment Forest and Climate Change (MoEFCC) and Botanical Survey of India (BSI).

The study involved in the collection of primary data by conducting a survey in the field, examination of flora and fauna records in previously published reports and records. Analysis of the information is the view of the possible alteration in the environment of the project site. For the survey of fauna, both direct and indirect observation methods were used

3.9.7 Flora

The present study on the floral assessment for the existing project activity is based on extensive field survey of the area. The plant species were identified with the help of plant taxonomy manual, literatures and Botanical Survey of India website (efloraindia.nic.in). In addition besides the collection of plant species, information was also collected with vernacular names of plant species made by local inhabitants.

3.9.7.1. Flora in Core Zone

Taxonomically a total of 21 species distributed in 18families have been recorded from the core mining lease area. Based on habitat classification of the enumerated plants the majority of species were tree 15 (60%) followed by shrubs 5 (20%) herbs 5(17%) and 1 (3%) is a creeper. Details of flora with the scientific name were mentioned in Table No. 3.11. No ecologically sensitive plant species has been reported from this area.

3.9.7.2. Flora in Buffer Zone

Taxonomically a total of 50 species distributed among 35 families have been recorded from the buffer area. Based on habitat classification of the enumerated plants the majority of species were tree 31 (53%) followed by shrubs 15 (25%), herbs 11 (19%) and rest 2 (3%) is a climber. Details of flora with the scientific name were mentioned in Table No. 3.11.

Table 3.11 Floral Diversity in Core and Buffer area (Tvl.Everking Granites & Thiru.E.Jagadeesan, Grey Granite Quarry, Krishnagiri District)

Sl. No.	Common Name	Local Name	Family	Scientific Name	Core	Buffer
TREES						
1.	Cashew nut Tree	Munthiri Maram	Anacardiaceae	*Anacardium occidentale*	+	+
2.	Ceylon olive	Ularga karai Maram	Elaeocarpaceae	*Elaeocarpus serratus*	+	-
3.	Palmyra palm	Panai Maram	Arecaceae	Borassusflabellifer	+	+
4.	Mango	Maa Maram	Anacardiaceae	*Mangifera indica*	+	+
5.	Papaya Tree	Papali Maram	Caricaceae	Carica Papaya	-	+
6.	Teak	Tekku Maram	Lamiaceae	*Tectona grandis*	+	+
7.	Sandal wood	Santhana Maram	Santalaceae	*Santalum album*	-	+
8.	Chebulicmyrobalan	Kudukkai Maram	Combretaceae	*Terminalia chebula*	+	+
9.	Pungamin	Pungai Maram	Fabaceae	*Pongamia pinnata*	+	+
10.	Lemon-Scented Gum	Thaila Maram	Myrtaceae	*Eucalyptus citriodora*	+	+
11.	Black plum	Naval Maram	Myrtaceae	*Syzygium cumini Sps.*	+	+
12.	Banana	Vaazhai Maram	Musaceae	*Musa paradisica*	-	+
13.	Thorn mimosa	Karuvelam Maram	Mimosaceae	*Acacia nilotica*	+	-
14.	Coconut	Tennai Maram	Arecaceae	*Coccus nucifera*	-	+
15.	Guava	Koiya Maram	Myrtaceae	*Psidium guajava*	-	+
16.	Indian date	Elandhai Maram	Rhamnaceae	*Ziziphus jujuba*	+	+
17.	Sweet acacia	Kastuurivel Maram	Fabaceae	*Vachellia farnesiana*	-	+

18.	Neem	Vempa Maram	Meliaceae	*Azadirachta india*	+	+
19.	Khejri Tree	Vanni Maram	Fabaceae	*Prosopis spicigera*	-	+
20.	Iron wood	Savukku Maram	Casuarinaceae	*Casuarina equisetifolia*	+	+
21.	Broome rain Tree	Vagai Maram	Fabaceae	*Albizia lebbeck*	-	+
22.	Custard apple	Seethe pazham Maram	Annonaceae	*Annona squamosa*	+	+
23.	Cannonbal tree	Nagalinga Maram	Lecythidaceae	*Couroupita guianensis*	-	+
24.	Tanner's cassia	Avaram poo Maram	Fabaceae	*Senna auriculata*	-	+
25.	Blackboard Tree	Aezhilai Paalai Maram	Apocynaceae	*Alstonia scholaris*	-	+
26.	Drumstick tree	Murungai	Moringaceae	Moringaoleifera	-	+
27.	Banyan	Ala Maram	Moraceae	*Ficus benghalensis*	-	+
28.	Tamarind	Puliya Maram	Fabaceae	*Tamarindus indica*	+	+
SHRUBS						
29.	Pinwheel flower	Nanthiyavattai	Apocynaceae	*Tabernaemontana divaricata*	-	+
30.	Nut grass	Koraikilangu	Cyperaceae	*Cyperus rotundus*	+	+
31.	Peacock flower	Mayirkonrai	Fabaceae	*Caesalpinia pulcherrima*	-	+
32.	Large calotrops	Yanainerunjil	Pedaliaceae	*Pedalium murex*	+	+
33.	Indian red wing	Indumul	Fabaceae	*Pterolabium hexapetalum*	-	+
34.	Coat buttons	Kinatruppasan	Asteraceae	*Tridax porcumbens*	-	+
35.	Marigold	Camanti	Asteraceae	*Tagetes erecta*	-	+
36.	Crown flower	Erukku	Apocynaceae	*Calotropis gigantean*	+	-
37.	Key lime	Arivukalam	Rutaceae	*Citrus aurantifolia*	-	+
38.	Castor bean	Aamanakku	Euphorbiaceae	*Ricinus communis*	-	+
39.	Jimson weed	Ummattangani	Solanaceae	*Datura stramonium*	+	+
40.	Firecracker flower	Kanakambaram	Acanthaceae	*Crossandra infundibuliformis*	-	+

41.	Hibiscus	Cembarutti	Malvaceae	*Hibiscus rosanaceae*	-	+
42.	Blue agave	Agave	Asparagaceae	*Agave tequilana*	-	+
43.	Jasmine	Adukku Malli	Oleaceae	*Jasminum sambac*	+	-
44.	Rose	Rosa	Rosaceae	*Rosa rubiginosa*	-	+
HERBS						
45.	Villosa	Kavali	Fabaceae	*Tephrosia villosa*	-	+
46.	Sickle senna	Thagarai	Fabaceae	*Sennatora*	+	+
47.	Indian doab	Arugampul	Poaceae	*Cynodondactylon*	+	+
48.	Carrot grass	Mookkuthi poo	Asteraceae	*Parthenium hysterophorus*	+	+
49.	European black nightshade	Manathakkali	Solanaceae	*Solanum nigrum*	+	+
50.	Coriander	Kothu Malli	Apiaceae	*Coriandrum sativum*	-	+
51.	Devil bean	Kilukiluppai	Fabaceae	*Crotalaria retusa*	+	+
52.	Indian comet grass	Narival	Poaceae	*Perotis indica*	-	+
CREEPERS/CLIMBERS						
53.	Bitter apple	Pikkumutti	Cucurbitaceae	*Citrullus colocynthis*	+	-
54.	Bitter guard	Pavakkai	Cucurbitaceae	*Momordica charantia*	-	+

Fig.a. Mangifera indica

Fig.b. Coccus nucifera

Fig.c. Anacardium occidentale

Fig.d.Tectona grandis

Fig E. Musa paradisica

Fig F. Tabernaemontana divaricata

Fig No 3.15 Photos of Flora in Core and Buffer Area

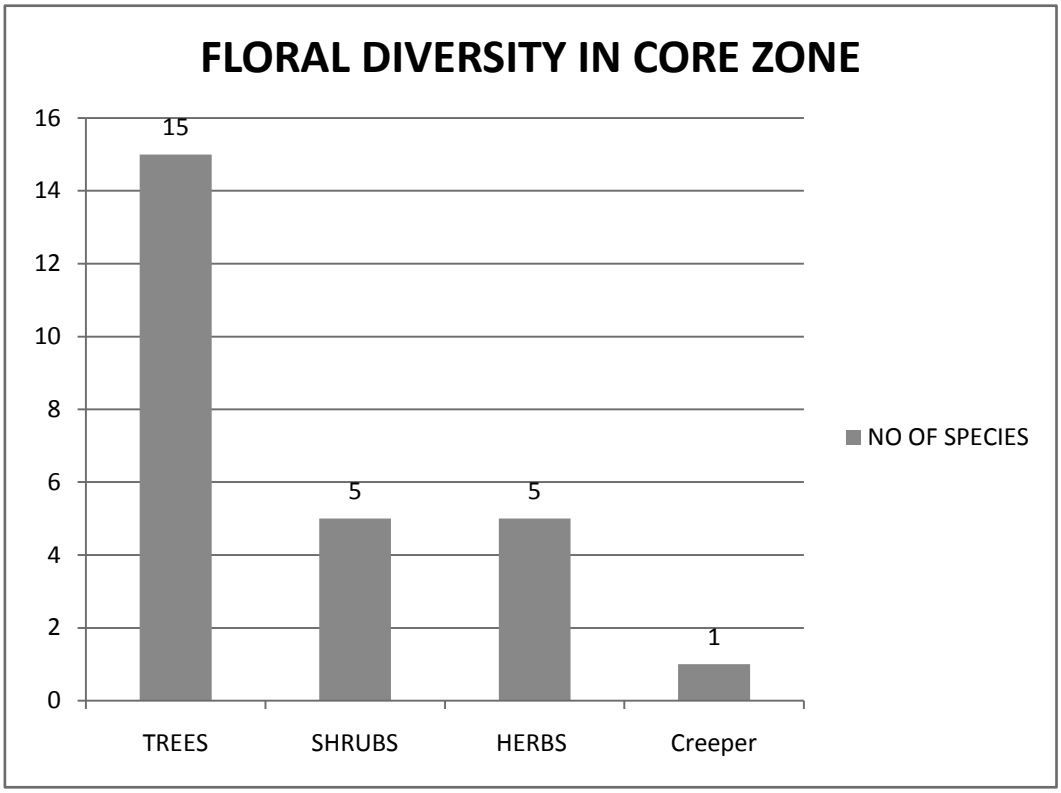


Fig No 3.16 Floral diversity in Core Zone

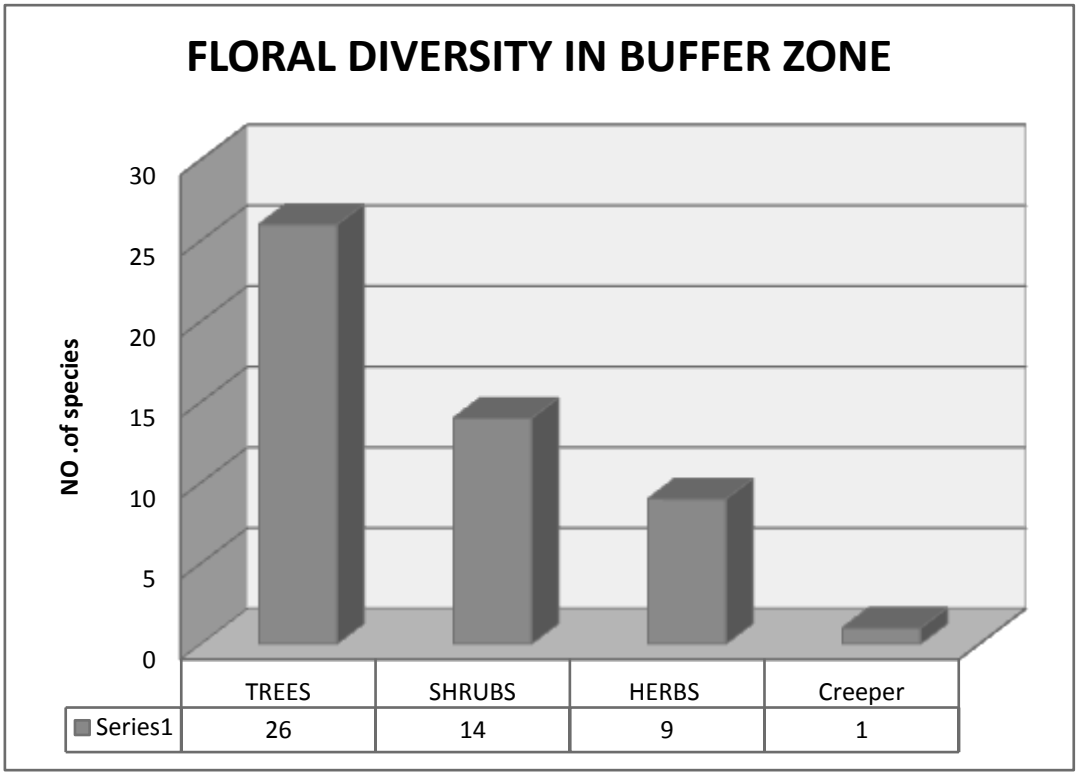


Fig No 3.17 Floral diversity in Buffer Zone

3.9.8. Fauna

The fauna 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.

The study of fauna takes a substantial amount of time to understand the specific fauna characteristics of the area. The assessment of fauna has been done on the bases of primary data collected from the lease sites. The presence was also confirmed from the local inhabitants depending on the animal sightings and the frequency of their visits in the project area. In addition officials, local peoples were another source of information for studying the fauna of the area. Field activities are physical/active search, covering rocks, burrows, hollow inspection and location of nesting sites and habitat assessment etc. Taxonomical identification was done by the field guide book and wildlife envis database (wiienvis.nic.in/Database/Schedule Species Database) and Zoological Survey of India (ZSI).

Table 3.12 Methodology applied during survey of fauna

S. No	Taxa	Method of Sampling	References
1	Insects	Random walk, Opportunistic observations	Pollard (1977); Kunte (2000)
2	Reptiles	Visual encounter survey (Direct Search)	Daniel J.C (2002)
3	Amphibians	Visual encounter survey (Direct Search)	
4	Mammals	Tracks and Signs	Menon V (2014)
5	Avian	Random walk, Opportunistic observations	Ali S (1941); Grimmett R (2011); Collins 2015

3.9.8.1. Fauna in Core Zone

Varieties of species were observed in the core zone (0-2km radius) of the Quarry. Number of species decreases towards the mining area this might be due the lack of vegetation and forest cover in mining lease area. None of these species are threatened or endemic. Taxonomically a total of 21 species belonging to 17 families have been recorded from the core mining lease area. Based on habitat classification the majority of species were birds 10 (45%) followed by insects 7 (32%), reptiles 2 (14%) and mammals 2 (9%). Dominant species were mostly birds and insects no amphibians were observed during the extensive field visit. Details of fauna with the scientific name were mentioned in Table 3.13.

There are no critically endangered, endangered, vulnerable and endemic species were observed.

3.9.8.2. Fauna in Buffer Zone

Taxonomically a total of 30 species belonging to 21 families have been recorded from the buffer mining lease area. Based on habitat classification the majority of species were birds 12(42%) followed by insects 11 (39%), reptiles 3(13.79%) and mammals 5(6%). There were no critically endangered, endangered, vulnerable and endemic species were observed. Details of fauna with the scientific name were mentioned in Table 3.13.

There were no critically endangered, endangered, vulnerable and endemic species were observed.

Table 3.13 Faunal in Diversity in Core and Buffer area (Tvl.Everking Granites & Thiru.E.Jagadeesan, Grey Granite Quarry, Krishnagiri District)

Sl. No	Common Name	Family Name	Scientific Name	Core Area	Buffer Area	Schedule list wildlife protection act 1972	IUCN Red list data
REPTILES							
1.	Common house gecko	Gekkonidae	*Hemidactylus frenatus*	-	+	NL	NL
2.	Garden lizard	Agamidae	*Calotes versicolor*	+	+	NL	NL
3.	Fan-Throated Lizard	Agamidae	*Sitana ponticeriana*	+	+	NL	LC
MAMMALS							
4.	Palm squirrel	Sciuridae	*Funambulus pennantii*	-	+	NL	NL
5.	Rat	Muridae	*Rattus rattus*	+	+	NL	NL
6.	Common mangoose	Herpestidae	*Herestes edwardsii*	-	+	NL	NL
7.	Bat	Pteropodidae	*Pteropus medius*	+	+	NL	NL
8.	Rabbits	Leporidae	*Oryctolagus cuniculus*	-	+	NL	NL
INSECTS							
9.	Banded hairstreak	Lycaenidae	*Satyrium calanus*	-	+	Schedule IV	NE
10.	Baronet	Nymphalidae	*Euthalia nais*	+	+	Schedule IV	NE
	Milkweed butterfly	Nymphalidae	*Danaus plexippus*	+	+	NL	LC
11.	Blue basher	Libellulidae	*Pachydiplax longipennis*	+	+	NL	LC
12.	Red-veined darter	Libellulidae	*Sympetrum fonscolombii*	+	+	NL	LC
13.	Common Tiger	Nymphalidae	*Dananus genutia*	+	+	NL	NE

14.	Plain Tiger	Nymphalidae	*Dananus chrysippus*	+	+	NL	NE
15.	Slaty skimmer	Libellulidae	*Libellula incesta*	-	+	NL	LC
16.	White butterfly	Pieridae	*Pieris rapae*	-	+	Schedule IV	LC
17.	Common grass	Pieridae	*Euremaha cabes sps.*	-	+	Schedule IV	LC
18.	Common grass yellow	Pieridae	*Eurema brigitta*	+	+	Schedule IV	LC
BIRDS							
19.	White throated king fisher	Alcedinidae	*Halcyon smyrnensis*	+	+	Schedule IV	LC
20.	Cattle egret	Ardeidae	*Bubulcus ibis*	-	+	NL	LC
21.	Japanese quail	Phasianidae	*Coturnix japonica*	-	+	NL	LC
22.	House crow	Corvidae	*Corvussplendens*	+	+	NL	LC
23.	White-breasted waterhen	Rallidae	*Amaurornis phoenicurus*	+	+	NL	LC
24.	Common cuckoo	Cucalidae	*Cuculus canorus*	+	+	NL	LC
25.	Common myna	Sturnidae	*Acridotheres tristis*	+	+	NL	LC
26.	Black drongo	Dicruridae	*Dicrurus macrocercus*	+	+	NL	LC
27.	Crow Pheasant	Cucalidae	*Centropus sinensis*	+	+	Schedule IV	LC
28.	Koel	Cucalidae	*Eudynamys scolopaceus*	+	+	Schedule IV	LC
29.	House sparrow	Passeridae	*Passer domesticus*	+	+	Schedule IV	LC
30.	Rose-ringed parkeet	Psittacidae	*Psittacula krameri*	+	+	NL	LC

((+) Symbol indicate presence of Species, (-) Symbol indicate absence of Species, *NL- Not listed, NE- Not evaluated, LC- Least concern)

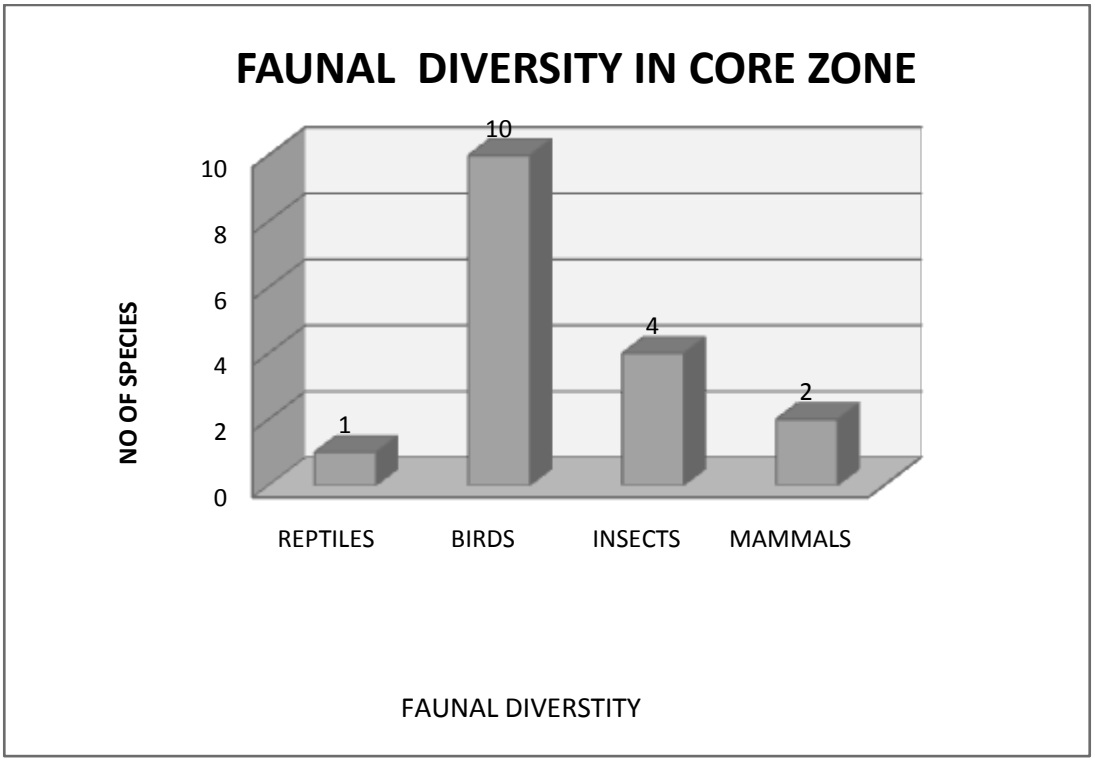


Fig No 3.18 Faunal diversity in Core Zone

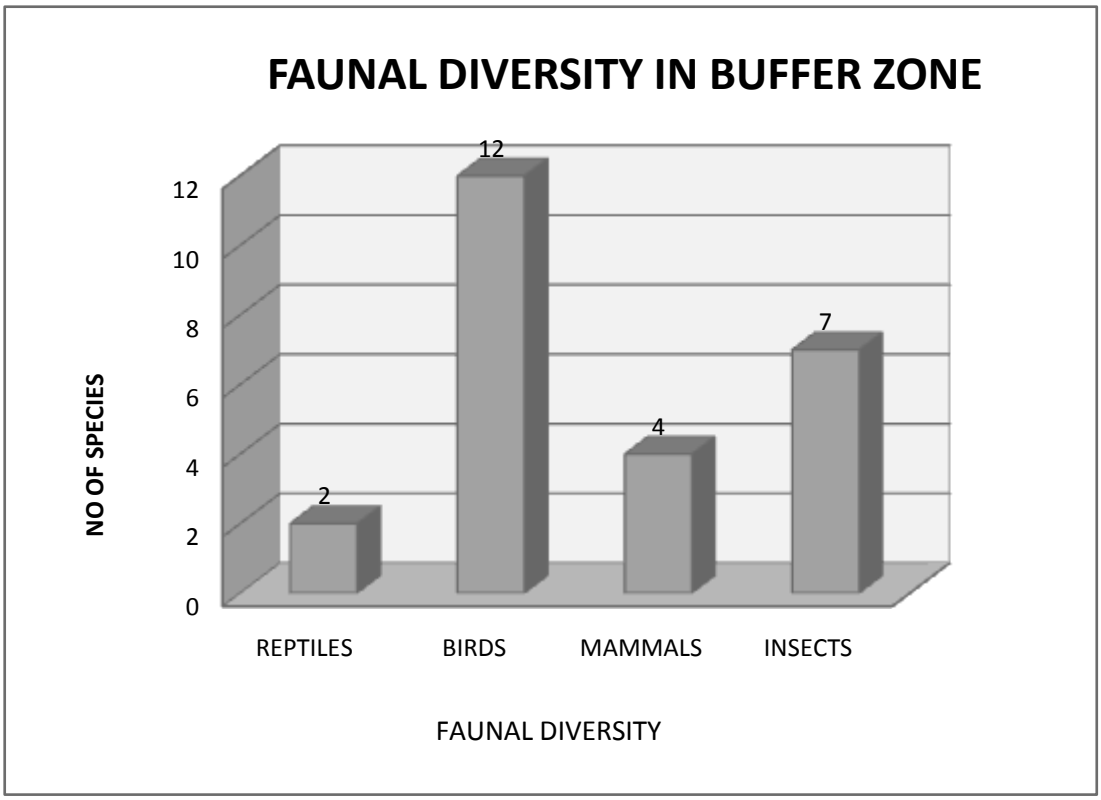


Fig No 3.19 Faunal diversity in Buffer Zone

3.10 SOCIO-ECONOMIC ENVIRONMENT

3.10.1 Introduction

Socio-economic study is an essential part of environmental study. It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature like temples, historical monuments etc., at the baseline level. This will help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project.

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

3.10.2 Objectives of the Study

The report deals with the Socio-Economic Impact Assessment of the multi-colour granite quarry promoted by proponent Tvl. Everking Granites, S.F. Nos 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C and 348/6D1, Thiru.E.Jagadeesan, S.F. Nos 353/2A1B, 2A7, 2B, 2C1 & 2E1A respectively located in Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu.

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

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

3.10.3 Scope of Work

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

3.10.4 Study Area – Jagadevipalayam village

Gram Panchayat name of the Jagadevipalayam village is Jagadevipalayam. Jagadevipalayam village is located in Bargur taluk of Krishnagiri district in Tamil Nadu, India. It is situated 8km away from sub-district headquarter Bargur (tahsildar office) and 15km away from district headquarter Krishnagiri. As per 2009 stats, Jagadevipalayam village is also a gram panchayat. Pincode of Jagadeviplayam village is 635203

Table 3.14 Jagadevipalayam village Census 2011 Data

S.No	Description	Census 2011 Data
1	Village Name	Jegadevipalayam
2	Tehsil Name	Bargur
3	District Name	Krishnagiri
4	State Name	TamilNadu
5	Total Population	5009
6	Total Area	666.16 (Hectares)

3.10.5 Population Characteristics – Jagadevipalayam Village, Bargur Taluk, Krishnagiri District (2001-2011)

Jagadevipalayam village had a total household 1348 in 2001, which is increased to 1607 in according to census 2011. Village had a total person of 6747 in 2011 census previous census 6257 persons in 2001. There were about 3398 men (50.5%) according to 2011 census and 3158 men (55%) in 2001 census marking decrease of about 240 men over the previous census. During 2001 there were about 3099 women (49.5%), which is an increase to 3349 (49.6%) in 2011 census.

In Jagadevipalayam village had a literate accounted for 3618 persons (57.8%) in 2001 and increased to 4474 persons (66.3%) in 2011. There were about 33.1 percent males in 2001 and 36.5 percent in 2011. There were about 24.7 percent females increased to 29 percent classes as literates in 2011.

Sex composition is the most important demographic characteristics that affect the incidence of birth and death. The average sex ratio in Bargur taluk, Jagadevipalayam village was 981during 2001 and increased to 986 the year of 2011. The highest sex ratio may be either due to the migrants for educational purpose and employment

opportunities and due to infant birth of female is very high. The population characteristics of Jagadevipalayam Village (2001-2011) are shown in Table 3.15 and Fig no. 3.20.

Table 3.15 Jagadevipalayam Village Population Facts

S. no	Characteristics	2001	%	2011	%
1	Total Household	1348	21.5	1607	23.8
2	Rural population	6257		6747	
3	Male Population	3158	50.5	3398	50.4
4	Female Population	3099	49.5	3349	49.6
5	Rural Literacy	3618	57.8	4474	66.3
6	Male Literacy	2070	33.1	2464	36.5
7	Female Literacy	1548	24.7	2010	29.8
8	Sex Ratio		981		986

Source: https://www.census2011.co.in/data/ village/635204- Jagadevipalayam -tamil-nadu.html

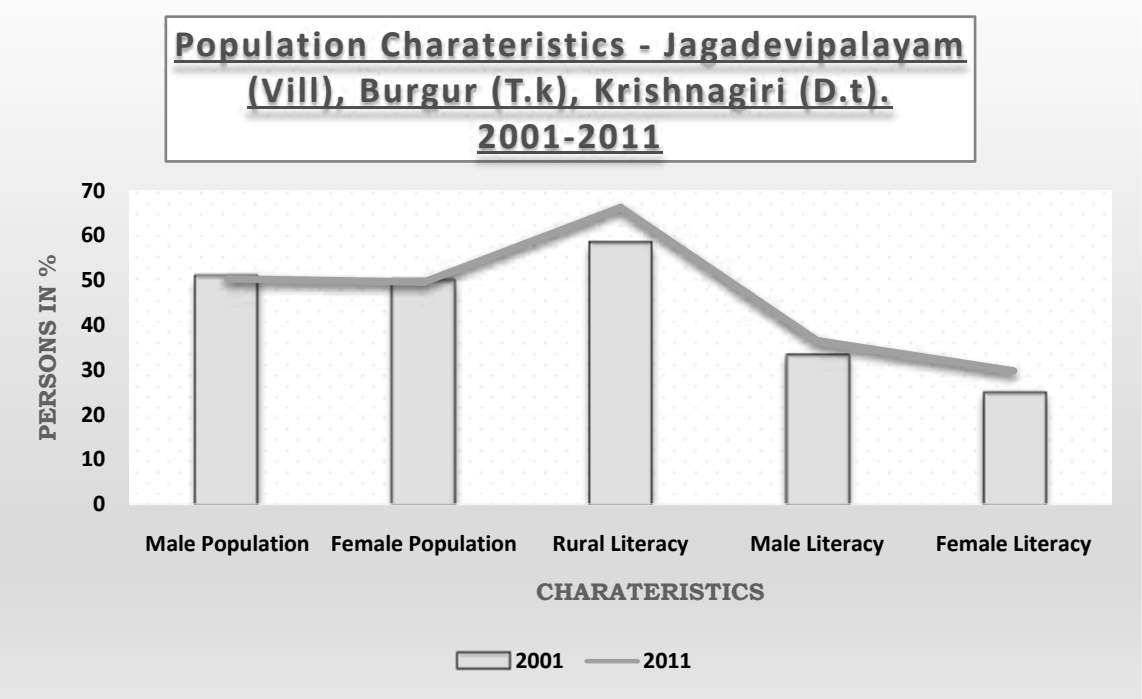


Fig No 3.20 Population Characteristics of Jagadevipalayam village Krishnagiri (2001-2011)

3.10.6 Occupational profile of Jagadevipalayam Village

The term workers denote the population engaged in primary, secondary and tertiary activities classified in the census reports of Indian government. During the year 2001 **Jagadevipalayam Village, Burgur Taluk, Krishnagiri District, Tamil Nadu.**

The Occupational structure in terms of analyzing the geographical, economic and technological development of various factors among these in this Jagadevipalayam village denote the workers population are classified in the census reports in Indian government. Based on the social economic survey primary and secondary data collected from the EIA team likely impacts on the socio-economic scenario from the mining site in 10 km buffer zone implemented in this surrounding villages where its monitoring and analyzing the social consequences in this mine site area.

In Jagadevipalayam village had a total main workers accounted of 2167 (34.6%) persons during 2001 census which is an decrease to 2093 (31%) persons during 2011. There were about 746 (11.9%) women in 2001 and 527(7.81) women according to the census 2011 marking a decreases 219 women over the previous census.

The study area has experienced a change in the occupational structure in the form of a decline in the proportion of cultivators, agricultural laborers and an increase in the proportion of Non workers. In Jagadevipalayam village had non workers population accounted of 4027 (59.7% according to census 2011. Which decreased from census 2001 had population 3247 (51.9%). Compare to 2011 census has and increased previous census is 740 persons. Because of more number of people are educated most of people living the village had mining and household industries like tobacco, coolie etc., earn our daily life

There are three phases of occupational distributions and economic development and growth rate of populations in census of Indian government. In First phase the agriculture proportions of people are working in this site, the second phase where the populations are continuing in this agro-based industries and as well as migrating one place to another place for manufacturing or employ engaged, the third phase the distributions of the occupational characteristics growth rate of working population becomes greater than or differentiates in the secondary census data wise.

As per the occupational pattern differentiated in 2001 and 2011 census the workers are classified main workers, marginal workers, non-workers, cultivators and agricultural workers, marginal house hold workers. More opportunities' nearby

villages for giving employing the local people for getting income and not for searching coolie job far away. It will increase their household income. From the data it was observed that occupational population decreased where the government and private entrepreneurs' should give an opportunity to develop an occupational pattern is restructure itself.

Table 3.16 Jagadevipalayam Working Population-Census 2011

S.No	Census Parameters	2001	%	2011	%
1	Total Population	6257		6747	
2	Total Workers	3010	48.1	2720	40.3
3	Male Workers	1873	29.9	1911	28.3
4	Female Workers	1137	18.2	809	12
5	Total Main workers	2167	34.6	2093	31
6	Male Main workers	1421	22.7	1566	23.2
7	Female Main Workers	746	11.9	527	7.81
8	Total Cultivators	755	12.1	253	3.75
9	Male Cultivators	478	7.64	203	3.01
10	Female Cultivators	277	4.43	50	0.74
11	Total Main Agricultural Labourers	783	12.5	755	11.2
12	Male Agri.Labourers	405	6.47	445	6.6
13	Female Agri.Labourers	378	6.04	310	4.59
14	Total Main HHI	25	0.4	52	0.77
15	Male HHI	15	0.24	37	0.55
16	Female HHI	10	0.16	15	0.22
17	Total Main Other Tertiary workers	604	9.65	1033	15.3
18	Male OT	523	8.36	881	13.1
19	Female OT	81	1.29	152	2.25
20	Total Nonworkers	3247	51.9	4027	59.7
21	Male Nonworkers	1285	20.5	1487	22
22	Female Non workers	1962	31.4	2540	37.6

Source: https://www.census2011.co.in/data/ village-Jagadevipalayam tamil-nadu.html

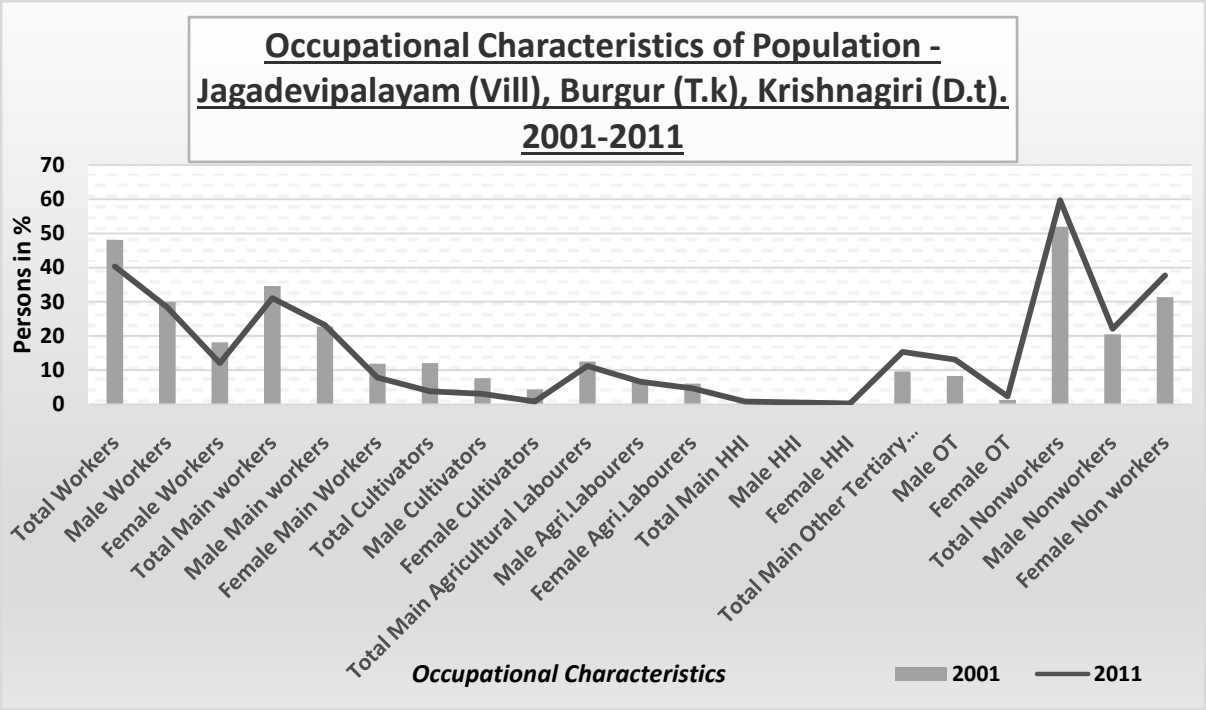


Fig No 3.21 Occupational Characteristics – Jagadevipalayam Village, Krishnagiri District (2001-2011)

3.10.7 Socio economic studies in buffer area

It is mining project covering an extent of 1.57.5Ha and comes under B2 category. The impact of proposed project will be up to the distance of 10km surrounding the project site. The socio - economic benefits of proposed project is given below.

1. The proposed project will generate employment within 10km radius
2. As the workers and tippers from various villages move to and fro projects site, shops such as mechanic, welding, tea and hotels will be developed around the project site. It will generate indirect employment to the village people.
3. The surrounding village people will get benefits under CER and CSR Scheme. CER is 2.0% of project cost whereas CSR is 2.5% of the project profit.
4. When people get employment, it will upgrade the living standard of the people.
5. As the people getting employment in their native places, migration towards developed cities in search of employment may be prevented. Thereby, agricultural activities will not be affected.

The list of revenue villages and its details within 10km radius are given as follows

Table 3.17 List and Details of Revenue villages within 10km radius

S.No	Village	Population
1.	Chendrapalli	6467
2.	Puligunta	8365
3.	Sigaralapalli	1723
4.	Madepalli	7341
5.	Bargur (TP)	16366
6.	Jagadevipalayam	6747
7.	Kondappanayanapalli	794
8.	Ikondamkothapalli.	3964
9.	Batlapalli	5036
10.	Balinayanapalli	4761
11.	Achamangalam	4179
	Total	**65743**

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

Table 3.18 Population Data of Study Area

Village Name	No. of House Holds	Total Population	Male	Female	Total Literate Population	Male Litereate	Female Litereate	Total Illiterate Population	Male Illiterate	Female Illiterate
Chendrapalli	1507	6467	3266	3201	3817	2188	1629	2650	1078	1572
Puligunta	2033	8365	4212	4153	5342	2978	2364	3023	1234	1789
Sigaralapalli	373	1723	914	809	763	472	291	960	442	518
Madepalli	1790	7341	3683	3658	5399	2906	2493	1942	777	1165
Bargur (TP)	3760	16366	8316	8050	11598	6335	5263	4768	1981	2787
Jagadevipalayam	1607	6747	3398	3349	4474	2464	2010	2273	934	1339
Kondappanayanapalli	188	794	409	385	410	240	170	384	169	215
Ikondamkothapalli.	977	3964	1982	1982	2484	1376	1108	1480	606	874
Batlapalli	1199	5036	2625	2411	3156	1797	1359	1880	828	1052
Balinayanapalli	1132	4761	2470	2291	3121	1767	1354	1640	703	937
Achamangalam	974	4179	2150	2029	2821	1634	1187	1358	516	842

Table 3.19 Communication & Transport Facilities in the Study Area

S.No	Village Name	PO	SPO	PTO	T	PCF	BS	PBS	RS	SH	MDR	BTR	GR	FP
1.	Chendrapalli	1	0	0	0	0	1	1	0	0	1	1	1	1
2.	Puligunta	1	0	0	0	0	1	1	0	0	1	1	1	1
3.	Sigaralapalli	0	0	0	0	0	1	1	0	0	1	1	1	1
4.	Madepalli	1	0	0	0	0	1	1	0	0	1	1	1	1
5.	Bargur (TP)	1	1	1	0	6	1	1	0	2	2	1	1	1
6.	Jagadevipalayam	1	0	0	0	1	1	1	0	1	1	1	1	1
7.	Kondappanayanapalli	0	0	0	0	0	1	1	0	0	1	1	1	1
8.	Ikondamkothapalli.	0	0	0	0	0	1	1	0	0	1	1	2	1
9.	Batlapalli	0	0	0	0	0	1	1	0	0	1	1	1	1
10.	Balinayanapalli	1	0	0	0	1	1	1	0	0	1	1	1	1
11.	Achamangalam	0	0	0	0	1	1	1	0	0	1	1	1	1

Abbreviations: PO - Post Office; RS - Railway Station; GR - Gravel Roads; SPO - Sub Post Office; PTO - Post & Telegraph office; PCF - Private Courier Facility; SH - State Highways; FP - Foot path; T- Telephone (Landline); BS -Public Bus Service; MDR - Major District Road; PBS - Private Bus Service; BTR - Black Topped (Pucca Road).

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

Table 3.20 Water & Drainage Facilities in the Study Area

S.No	Village Name	TP	CW	UCW	HP	TW/BH	S	R/C	T/P/L	CD	OD	CT
1.	Chendrapalli	1	1	1	1	1	2	2	1	1	1	2
2.	Puligunta	1	2	1	1	1	2	2	2	1	1	2
3.	Sigaralapalli	1	2	1	1	1	2	2	2	1	1	2
4.	Madepalli	1	1	1	2	1	1	2	2	1	1	2
5.	Bargur (TP)	1	1	1	2	2	2	2	2	1	1	2
6.	Jagadevipalayam	1	1	1	1	1	1	2	1	1	1	2
7.	Kondappanayanapalli	1	1	1	1	1	2	2	2	1	1	1
8.	Ikondamkothapalli.	1	1	1	2	1	1	2	2	1	1	2
9.	Batlapalli	1	1	1	1	1	2	2	2	1	1	2
10.	Balinayanapalli	1	1	1	1	1	2	2	2	1	1	2
11.	Achamangalam	1	1	1	2	1	2	2	2	1	1	2

Abbreviations: TP-Tap Water; R/C-River/Canal; CW-Covered Well; T/P/L-Tank/Pond/Lake; UCW-Uncovered Well; CD-Covered Drainage; HP-Hand Pump; OD-Open Drainage; TW/BH-Tube/Bore Well; CT-Community Toilet Complex for General public; S– Spring

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

Table 3.21 Other Facilities in the Study Area

S.No	Village Name	ATM	CB	COB	ACS	SHG	PDS	AMS	NC	NC-AC	CC	SF	PL	NPS	APS	BDRO	PS
1.	Chendrapalli	2	1	1	2	2	1	2	2	1	2	2	1	1	2	1	1
2.	Puligunta	2	2	2	2	2	1	2	2	1	2	1	1	1	1	1	1
3.	Sigaralapalli	2	2	2	2	2	1	2	2	1	1	1	1	1	1	1	1
4.	Madepalli	2	2	2	2	2	1	2	2	1	2	2	1	1	1	1	1
5.	Bargur (TP)	9	8	2	2	2	1	2	2	1	2	2	2	1	1	1	1
6.	Jagadevipalayam	2	1	1	2	2	1	2	2	1	2	2	2	1	1	1	1
7.	Kondappanayanapalli	2	1	2	2	2	1	2	2	1	1	1	1	1	1	1	1
8.	Ikondamkothapalli.	2	2	2	2	2	1	2	2	1	1	1	1	1	1	1	1
9.	Batlapalli	2	2	2	2	2	1	2	2	1	1	1	2	1	1	1	1
10.	Balinayanapalli	2	2	1	2	2	1	2	1	1	1	1	2	1	1	1	1
11.	Achamangalam	2	1	2	2	2	1	2	1	1	1	1	1	1	1	1	1

Abbreviations: ATM - Automatic Teller Machine; PDS - Public Distribution System (Shop); CB - Commercial Bank; COB - Co-operative Bank; AMS - Agricultural Market

Society: ACS –Agricultural Credit Societies; NC- Nutritional Centre; SHG-Self Help Group; NC-AC-Nutritional Centre – Anganwadi Centre; BDRO-Birth & Death Registration Office; PS-Power Supply; CC- Community Centre (without TV); SF – Sports field; PL- Public library, NPS – News paper supply; APS – Assembly polling station.

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

Table 3.22 Educational Facilities in the Study Area

		PPS		PS		MS		SS		SSS		DC		EC		MC		MI		PT		VTS		SSD	
S.No	**Village Name**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**	**G**	**P**
1.	Chendrapalli	1	2	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2.	Puligunta	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3.	Sigaralapalli	1	2	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4.	Madepalli	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5.	Bargur (TP)	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6.	Jagadevipalayam	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7.	Kondappanayanapalli	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
8.	Ikondamkothapalli.	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
9.	Batlapalli	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10.	Balinayanapalli	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
11.	Achamangalam	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Abbreviations: PPS-Pre Primary School; SSS-Senior Secondary School; DC-Degree School; PT-Polytechnic; PS-Primary School; G-Government ; EC-Engineering College; VTS-Vocational School /ITI; MS-Middle School; P-Private; MC-Medical College; SSD-Special School for Disabled; SS-Secondary School; MI-Management College/Institute;
Note –1-Available within the village; 2-Not available

Table 3.23 Medical Facilities in the Study Area

Sl.No	Village Name	CHC	PHC	PHSC	MCW	TBC	HA	HAM	D	VH	MHC	FWC	NGM-I/O
1.	Chendrapalli	2	1	1	2	2	2	2	2	1	2	2	a
2.	Puligunta	2	1	1	2	2	2	2	2	1	2	2	b
3.	Sigaralapalli	2	2	1	2	2	2	2	2	2	2	2	b
4.	Madepalli	2	2	1	2	2	2	2	2	1	2	2	b
5.	Bargur (TP)	2	2	1	2	2	2	2	2	1	2	2	b
6.	Jagadevipalayam	2	1	1	2	2	2	2	2	2	2	2	c
7.	Kondappanayanapalli	2	1	1	2	2	2	2	2	1	2	2	b
8.	Ikondamkothapalli.	2	2	1	2	2	2	2	2	2	2	2	a
9.	Batlapalli	2	2	1	2	2	1	2	2	1	2	2	b
10.	Balinayanapalli	2	1	2	2	2	2	2	2	2	2	2	b
11.	Achamangalam	2	1	1	2	2	2	2	2	1	2	2	b

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

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

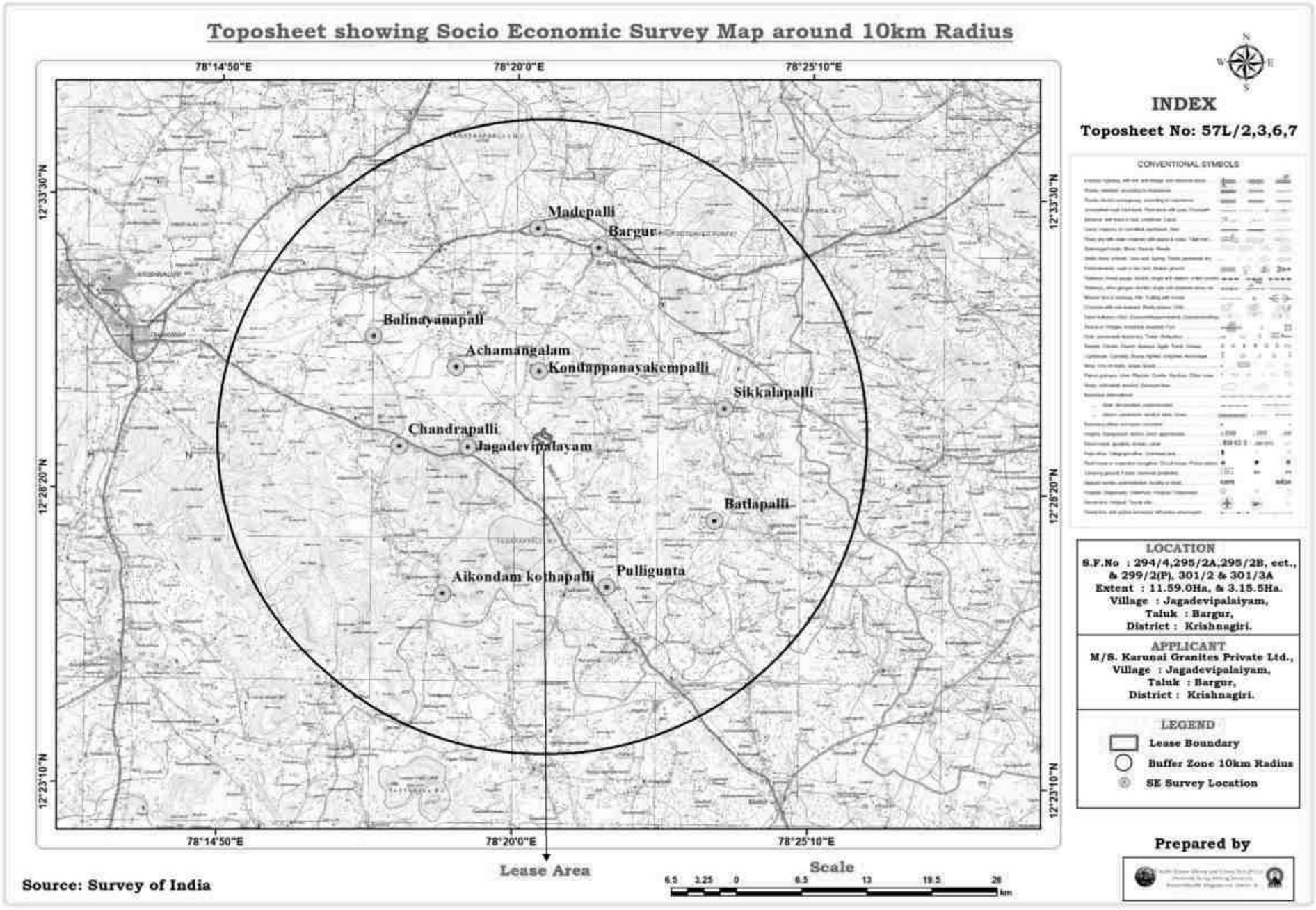


Fig No 3.22 Socioeconomic Survey Location

3.10.8 Primary survey conducted by FAE- SE

Primary survey conducted 10 villages total population is **65743**. Jagadevipalayam village has approximately 1 percent of total population of the village area. This calculation is total sample size has 250 around 10km radius core and buffer zone from mine lease boundary.

3.10.8.1 Primary survey methodology

The study was carried out with a participatory approach by involving the stakeholders, particularly the project beneficiaries and probable affected persons through a series of consultative process. The population groups that were consulted include beneficiary group of people in the project influence area, particularly the shopkeepers, farmers, Gram Panchayat members, village elders etc. Proportionate and purposive sampling methods were used for selecting respondents for household survey. Male and female respondents, both were selected for household survey. Structured questioners were used for survey.

3.10.8.2 Data structures

The data collected with the help of questionnaire survey for list of villages of Bargur Taluk were suitably converted into uni-variate, bi-variate and multivariate tables. The selection of these blocks were meaningfully done in order to get complete details of the surveyed population, their living environment, socio economic and socio-cultural and healthcare practices so as to conceptualize the findings with the help of interrelationships between Occupation and income status. the surveyed population were examined and interpreted with reference to socioeconomic living area, family structure and Educational, Sanitation etc.,

The Survey was conducted by SE expert Mrs. S.Santhi (FAE) along with her team.

Fig No 3.23 Primary Survey Photographs of village wise, Krishnagiri District



3.9.10 Summary and Conclusion

From the primary survey, it is found that the basic facilities such as water road, PHSC, schools are available within the surveyed villages. The people stated that they did not get benefits under CER and CSR activities. Also they suggested that to operate the truck at minimum speed while crossing villages, schools, hospitals. The strongly asked to provide the employment opportunities only to the village people and registered their complaint on employment opportunities to other state people.

The proponent assured that he will improve facilities in government schools and hospitals under CER and CSR Schemes.

The socio-economic wellbeing of the area and its people is represented by the infrastructure and the social assets available in the area. The study area constituted

of various infrastructures related to education, health care, communication, transportation, drinking waters etc.

3.11 LAND ENVIRONMENT

3.11.1 Land use of Study Area

The land-use & land cover map of the 10 km radial study area from the periphery of project site has been prepared using Landsat8 having 30 m spatial resolution and date of pass 22nd Sep 2022 satellite image with reference to Google Earth data. In order to strengthen the baseline information on existing land use pattern, the following data covering approx. 12°29'8.97"N to 12°29'26.41"N latitude and 78°20'18.72"E to 78°20'38.29"E longitude and elevation 450 meter are used as per the project site confined within that area.

Land use pattern of the study area as well as the catchment area was carried out by standard methods of analysis of remotely sensed data and followed by ground truth collection and interpretation of satellite data. The outcome of land use study is presented below in subsequent tables and figures.

Table 3.24 Data Specification Used For Present Study

Satellite Image	Sensor	Spatial Resolution	Date of Acquisition
Landsat8	*OLI & TIRS	30m	22nd Sep 2022

* Operational Land Imager (OLI) and the Thermal Infrared Sensor (TIRS)

	Bands	**Wavelength (Micrometers)**	**Resolution**
Landsat8 Operational Land Imager (OLI) and Thermal Infrared Sensor (TIRS) Launched February 11, 2013	Band 1 - Coastal aerosol	0.43 - 0.45	30
	Band 2 - Blue	0.45 - 0.51	30
	Band 3 - Green	0.53 - 0.59	30
	Band 4 - Red	0.64 - 0.67	30
	Band 5 - Near Infrared(NIR)	0.85 - 0.88	30
	Band 6 - SWIR1	1.57 - 1.65	30
	Band 7 - SWIR2	2.11 - 2.29	30
	Band 8 - Panchromatic	0.50 - 0.68	15
	Band 9 - Cirrus	1.36 - 1.38	30
	Band 10 - Thermal Infrared	10.60 – 11.19	100

	(TIRS)1		
	Band 11 - Thermal Infrared (TIRS)2	11.50 – 12.51	100

3.11.2. Objective

The objectives of Land use studies are:

- To determine the present land use pattern as per EIA/EMP norms by MoEF.
- To determine the drainage pattern present in the study area.

3.11.3 Data Used

A. Remote sensing data

- Landsat8-30m Resolution, OLI &TIRS (Sensor)

B. Collateral Data

Survey of India Toposheet bearing Toposheet No. 57 P/12 (1:50,000 Scale) and the Toposheet map representing the project site is given in Chapter 1.

3.11.4 Methodology

The land use pattern of the study area was studied by analyzing the available secondary data published in the District Primary Census abstract of the year 2001 & 2011. Salient features of the adopted methodology are given below:

- Acquisition of satellite data
- Preparation of base map from Survey of India Toposheet.
- Data analysis using visual interpretation techniques
- Ground truth studies or field checks using GPS & Digitization using head up vectorization method
- Topology construction in GIS Topography and location of surface water bodies like ponds, canals and rivers;
- Location of villages/towns/sensitive areas;
- Identified pollution pockets, if any within the study area;
- Accessibility, power availability and security of monitoring equipment;
- Areas which represent baseline conditions; and
- Collection, collation and analysis of baseline data for various environmental attributes.

- Area calculation for statistics generation.

The spatial resolution and the spectral bands in which the sensor collects the remotely sensed data are two important parameters for any land use survey. Landsat8 data offers spatial resolution of 30 m and 185 kilometer (115 mile) wide swath of the Earth in 15-30 meter resolution covering wide areas the data is collected in 11 visible bands namely **Band Number µm Resolution**

1	0.433–0.453	30 m
2	0.450–0.515	30 m
3	0.525–0.600	30 m
4	0.630–0.680	30 m
5	0.845–0.885	30 m
6	1.560–1.660	30 m
7	2.100–2.300	30 m
8	0.500–0.680	15 m
9	1.360–1.390	30 m
10	10.6-11.2	100 m
11	11.5-12.5	100 m

3.11.5 Topography

Data covering approximately northern latitude of 12°29'8.97"N to 12°29'26.41"N latitude and 78°20'18.72"E to 78°20'38.29"E longitude and elevation 450 m are used as per the project site confined within that area.

3.11.6 Land Use/Land Cover Classification

3.11.6.1 Land use/Land cover within the lease area:

The base maps of the study area were prepared, with the help of Survey of India Toposheet on 1:50,000 scale (Fig No.3.26). Preliminary interpreted land use and the land cover features boundaries from Landsat8 sensor OLI & TIRS having 30m spatial resolution, False Colour Composite were modified in light of field information and the final thematic details were transferred onto the base maps. The final interpreted and classified thematic map was cartograph. The cartographic map was categorically differentiate with standard colour coding and described features with standard symbols. All the classes were identified and marked by the standard legend on the map. The following Land Cover classes were derived and classified as under.

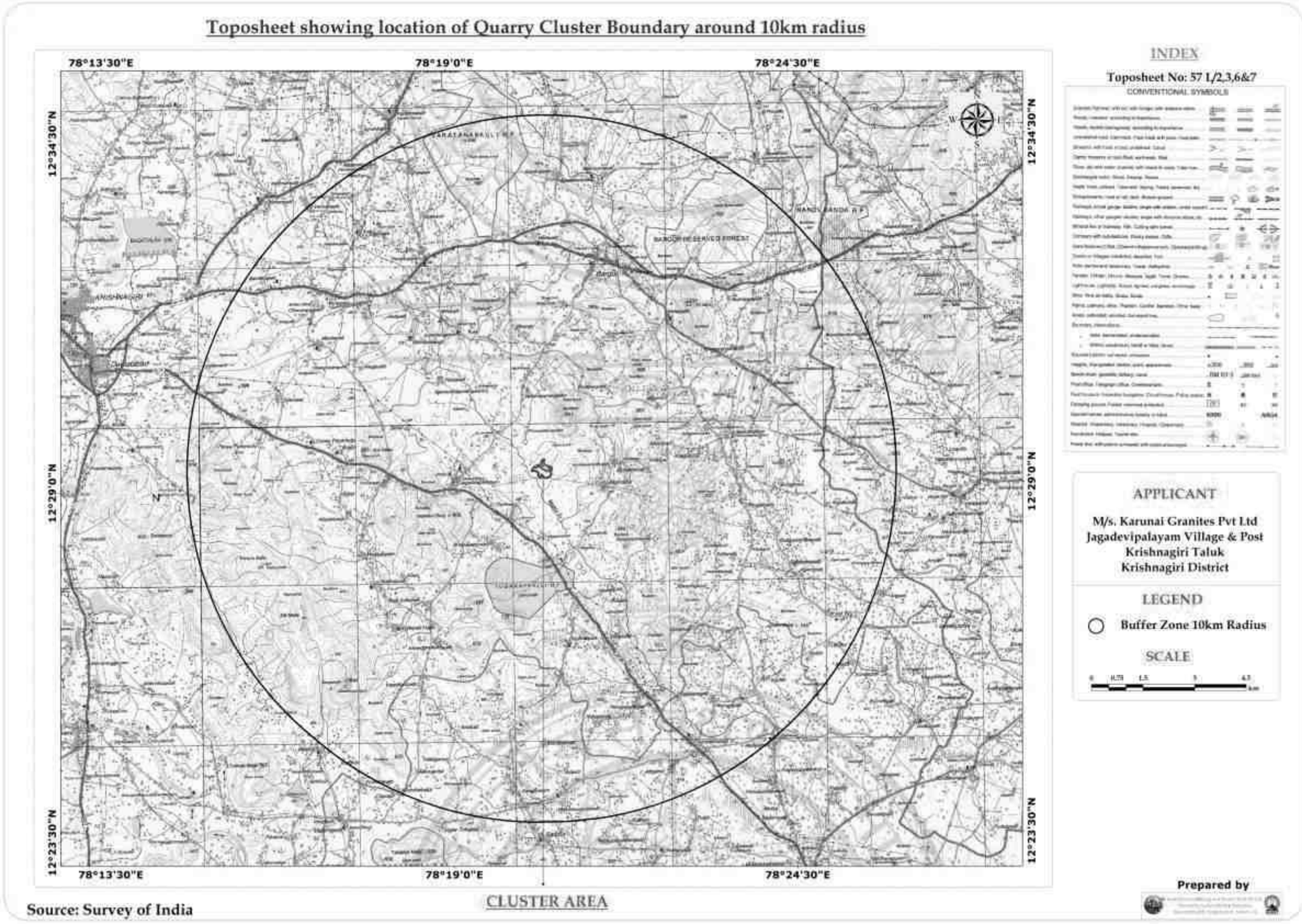


Fig No: 3.24 Toposheet Showing Location Lease Boundary around 10km radius

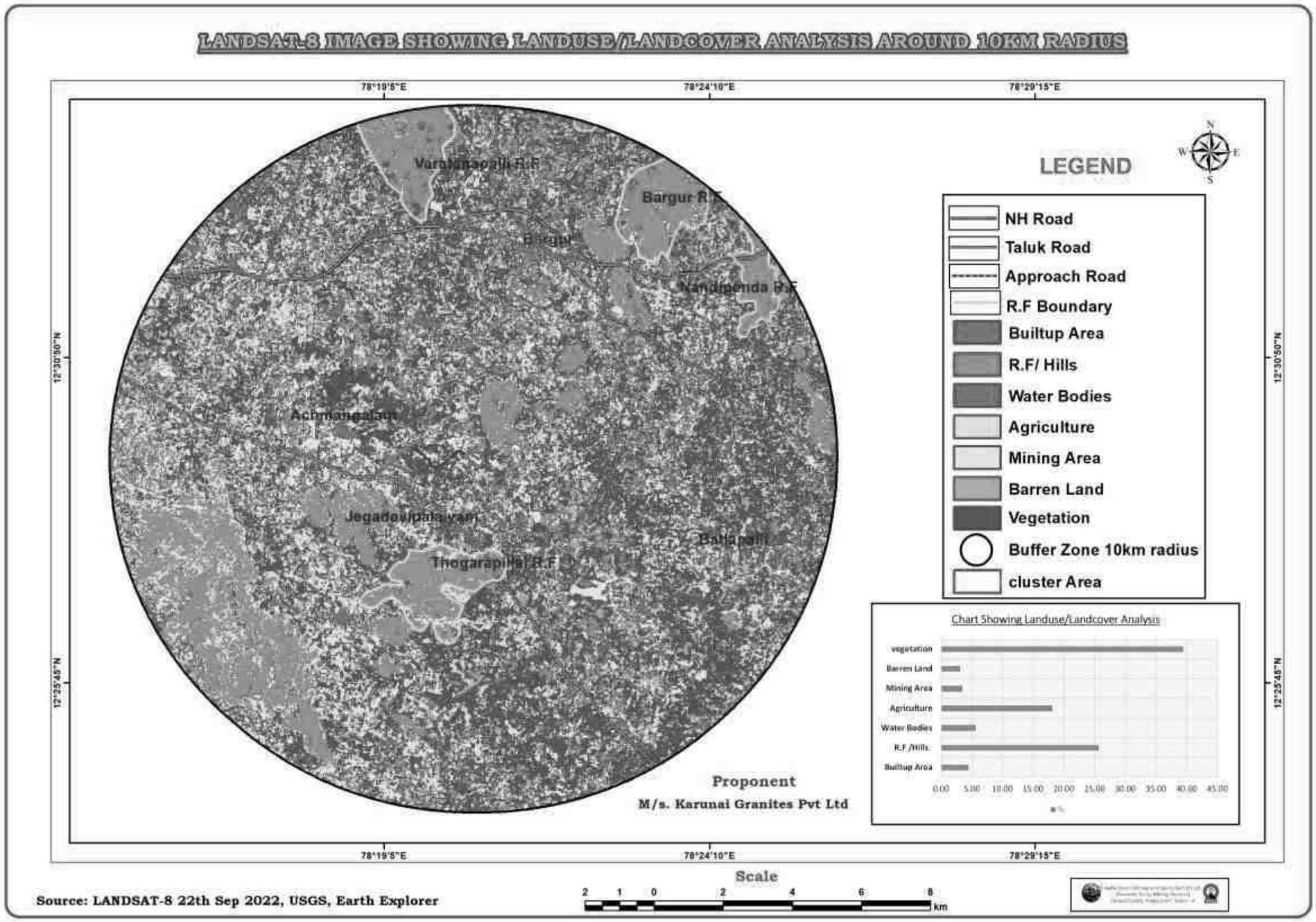


Fig No: 3.25 LANDSAT Image showing Location of Lease area around 10km radius

Table 3.25 Computation of existing and proposed land use pattern

S.No	Names	Area(Ha)	%
1	Built-up Area	1474.01	4.46
3	R.F /Hills	4159.29	25.69
4	Water Bodies	878.23	5.66
5	Agriculture	5987.79	18.13
6	Mining Area	2140.01	3.48
7	Barren Land	1020.17	3.09
8	vegetation	13046.60	39.49
	Total	33035.13	100.00

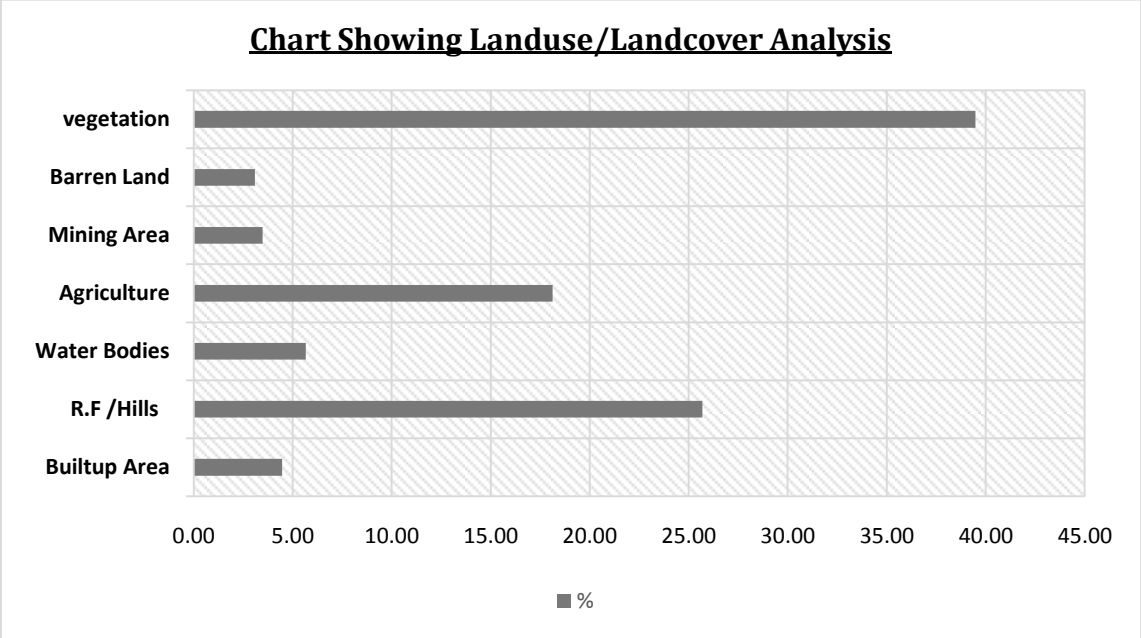


Fig No: 3.26 Land use/Land Cover around 10 km radius

3.11.7 Drainage Pattern of the Area

Drainage pattern of the area is dendritic with high stream density due to rugged topography. Drainage is mostly westerly and south westerly. 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. The project site itself is the River body. The drainage pattern of the area is dendritic – sub dendritic.

3.11.8 Contour

Contour lines are the greatest distinguishing feature of a topographic map. Contour lines are lines drawn on a map connecting points of equal elevation, meaning if you physically followed a contour line, elevation would remain constant. Contour lines show elevation and the shape of the terrain in the study area. The slope map was derived from a SRTM data of the study area. Contour interval at 20m, minimum 400m has very hilly with plain landforms and general terrain is quite elevated at maximum 900m above. To make topographic maps easier to read, because it's impractical to mark the elevation of every contour line on the map, the index contour lines are the only ones labeled.

3.11.9 Slope

The slope map was derived from a SRTM data of the study area. The slope of the study area was classified into five classes, such as less than 10 Percent/degree flat to almost flat no meaningful denudation process. Especially landslides that is flat. Slope zone 10-20º gentler, the same as above, but with a higher magnitude of the area, 20-30º, slightly steep, a lot of ground movement and erosion, especially landslides that area flat. 30-40º and above 40º very steep, rocks generally begin to unfold a very intensive denudation process have begun to produce rework material.

3.11.10 Soils

The 10km study area is covered with Alfisols, Entisols, Inceptisols and Hill type soil. The type of soil found in the lease area is Hill soil.

3.11.11 Geology

Charnockite, Pink migmatite, Dharmapuri anorthosite, epidote- hornblende Gneiss is found largely found in Krishnagiri area. Sedimentary rocks namely Charnockite, Granitoid gneiss, feldspar gneiss, calcareous gritty (sand stone mixed clay), and quartz vein. Granitoid gneiss is a composition of primary lateritic capping, basement crystalline complex, and conglomerate, which are found along the middle part of the river valley. The younger alluvium formations are seen predominantly in the northern part of the area and are considered as highly permeable. The storage capacity of the rock formations depends on the porosity of the rock. In the rock formation the water moves from areas of recharge to areas of discharge under the influence of hydraulic gradients depending on the hydraulic conductivity or permeability. The study area

contains Gneisses, Granites, Charnockite, and Granitoid gneiss as major geological structure. The entire firka is underlain by the crystalline metamorphic gneiss complex consisting gneisses and granites. Ground water is occurring in pheratic conditions in weathered and fractured gneiss rock formation.

3.11.12 Geomorphology

The prominent geomorphic units identified in the district through interpretation of satellite imagery are structural hills in the southwestern part of the area, denudational land forms like buried pediments in the plains and inselbergs and plateaus represented by conical hills aligned with major lineaments. Krishnagiri district forms part of the upland plateau region with many hill ranges and undulating plains. The western part of the district has hill ranges of Mysore plateau with a chain of undulating hills and deep valleys extending in NNE-SSW direction.

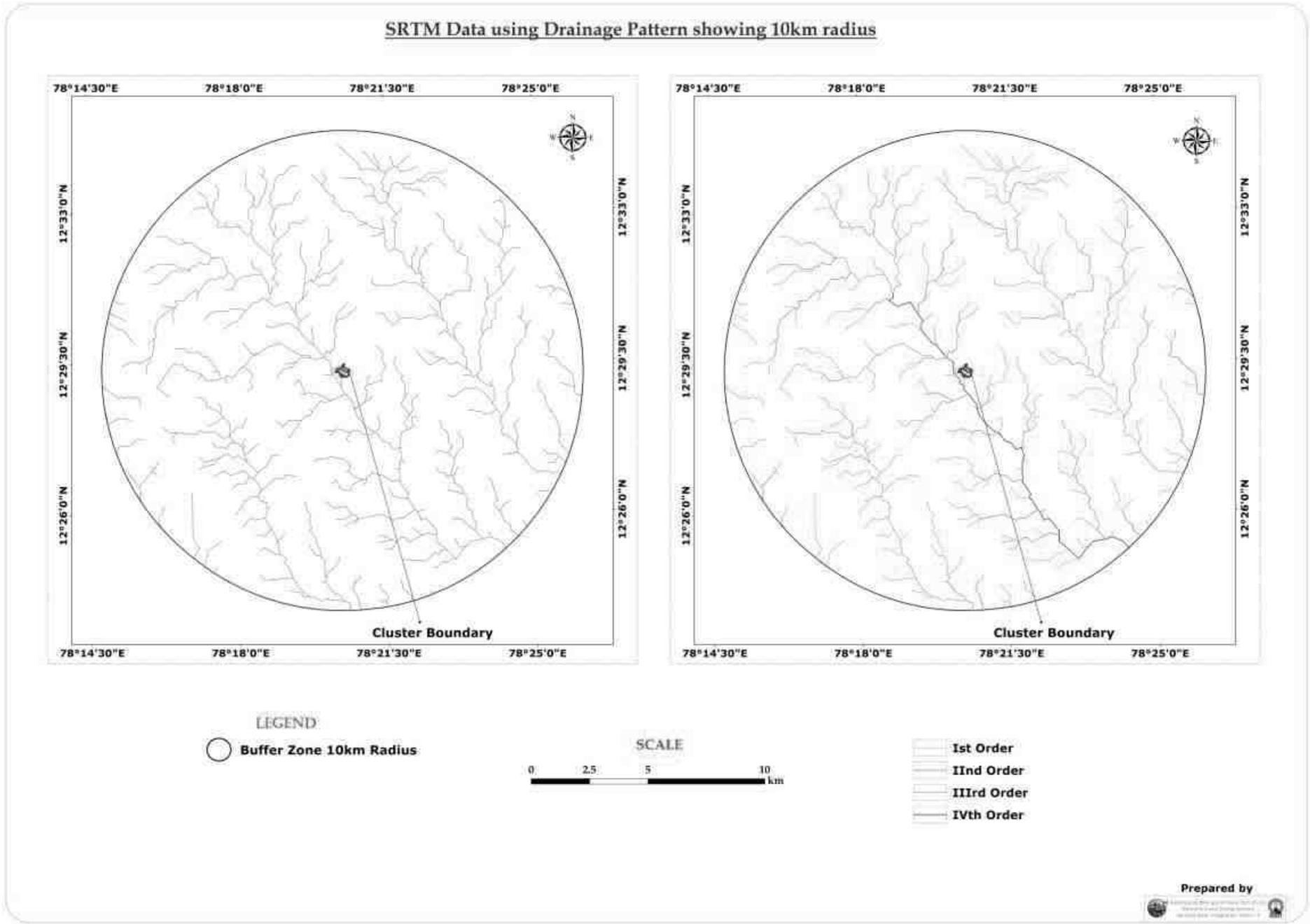


Fig No 3.27 Image Representing the River/Streams (Drainage) of the study area within 10km radius from the project site

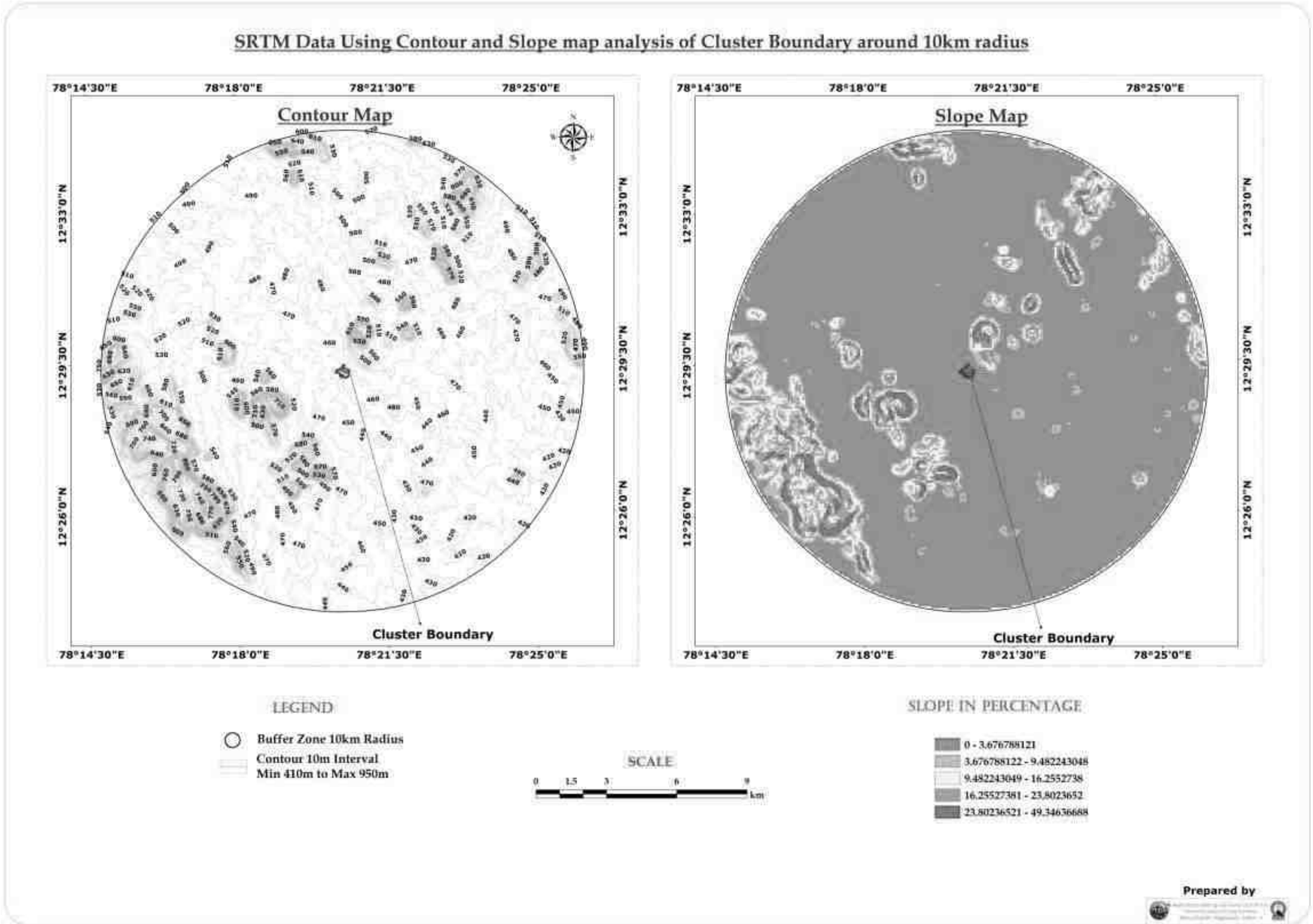


Fig No 3.28 Image Representing Contour and Slope analysis around 10km radius

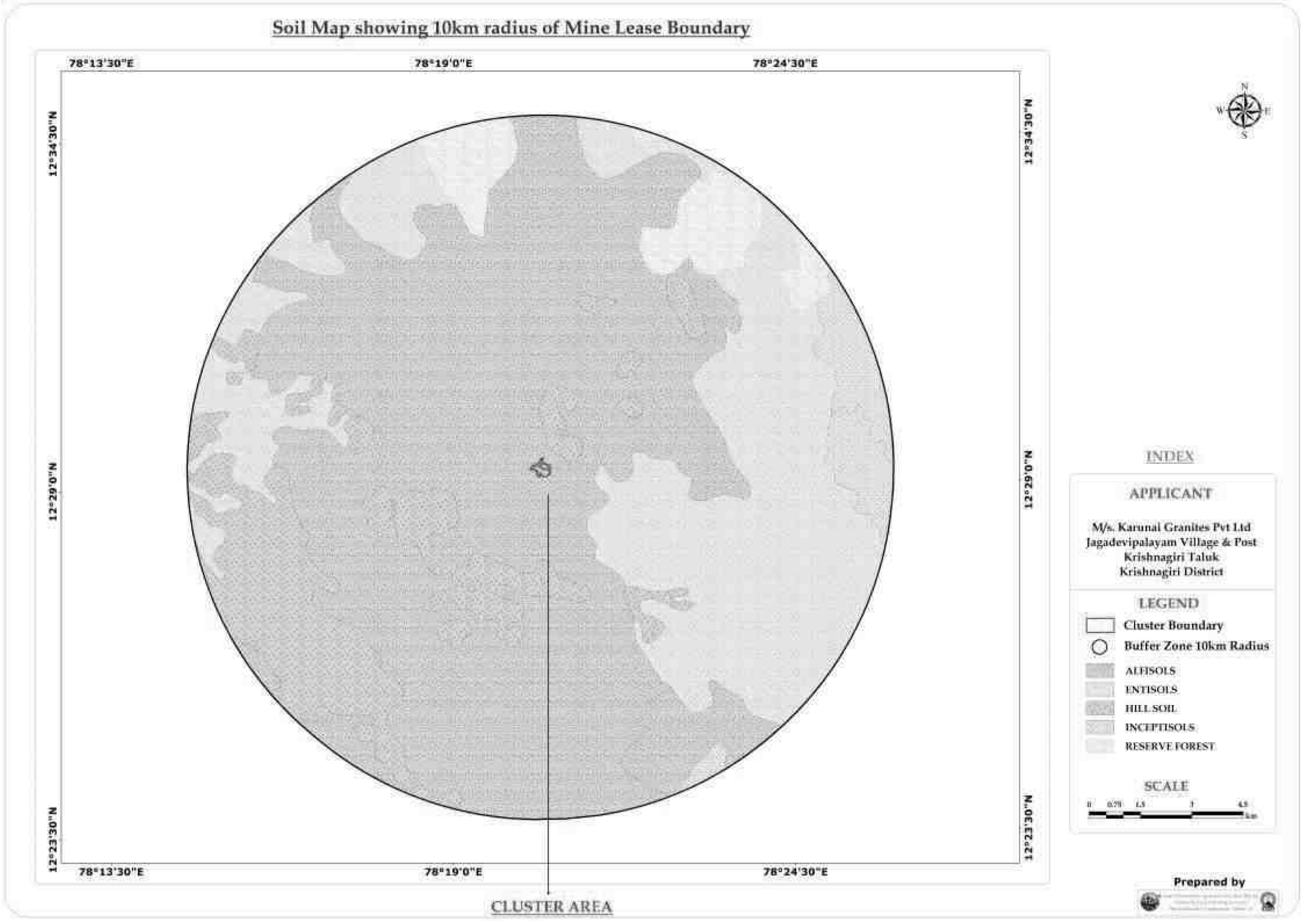


Fig No 3.29 Image Representing the Soil Characteristics around 10km of the Lease area

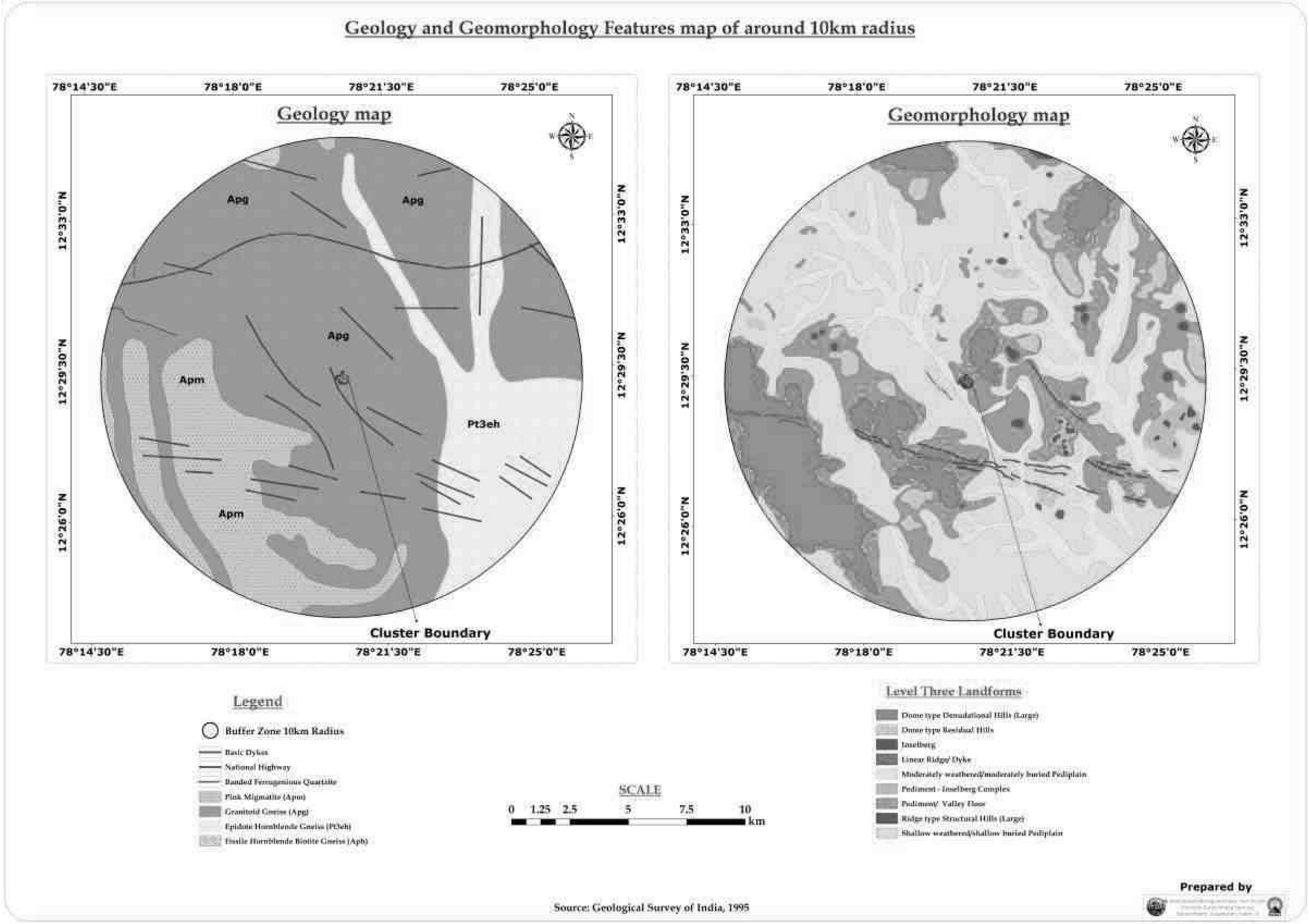


Fig No 3.30 Image Showing Geology and Geomorphology of the lease area

3.11.13 Seismic Sensitivity

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

3.11.14 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 is given below.

Table 3.26 Environmental Sensitiveness

Interstate Boundary	Tamil Nadu –Andhra Pradesh Interstate boundary –16.6km (NE)
Coastal Zone	Bay of Bengal – 172km – Southeast
Reserve Forest	1. Thogarapalli R.F. -1.7km – S 2. Bargur R.F – 6.9km – NE 3. Varatanapalli – 8.0km – NW 4. Nandibanda R.F – 8.2km – NE 5. Neralakotta R.F – 10.4km - N The proposed projects site does not attract Forest Conservation Act, 1980.
Wildlife sanctuary	Nil within 10km radius. Cauvery Wildlife Sanctuary – 41.2km – W The Proposed projects site does not attract the Wildlife (Protection) Act, 1972.
Water bodies	1. Mattur Stream – 780m – SW 2. A lake – 1.5m – SW 3. A lake near Gettur village – 4.8km – NW 4. A lake near Balinayanapalli village – 7.1km – NW 5. A lake near Simanur Village– 5.4km - NW 6. Bargur River – 4.0km - NE
Defense Installations	Nil within 10km radius
Critically Polluted area	Nil within 10km radius

CHAPTER – 4: ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Open cast semi mechanized mining of bench height of 6m and a width not less than the height will be carried out by using excavators and dumpers combination. Scientific mining with proper benches with width and slope will be adopted as per MMR, 1961. Jack hammers with compressors will be deployed for drilling. Manual labors will be engaged for jack hammer drilling, sorting of waste and Cranes will be used for loading the Grey granite into trucks. During future development of quarrying, removal of rock mass will be done by mild blasting with explosives in holes drilled by Jack hammer of 32dia especially. No deep hole blasting is proposed. Sizing of materials shall be done by Wire saw cutting.

All these operations can disturb the environment in various ways, such as removal of mass, change of landscape, flora and fauna of the area, surface drainage, and change in air, water and soil quality. Therefore, it is essential to assess the impacts of mining on different environmental parameters before starting the mining operations, so that abatement measures could be planned in advance for eco-friendly mining in the area. The likely impacts on various environmental aspects and mitigation measures are discussed below.

4.1 Air Environment

The air borne particulate matter is the main air pollutant by opencast mining. The mining operation will be carried out by jack hammer drilling, blasting, excavation, loading and transportation.

4.1.1. Anticipated Impact

The air borne particulate matter generated by handling, operations and transportation of Grey Granite are the main air pollutant. The emissions of Sulphur dioxide (SO_2), Oxides of Nitrogen (NOx) contributed by diesel operated excavation/loading equipment and vehicles plying on haul roads are marginal. Prediction of impacts on air environment has been carried out by considering generation of rejects and overburden per annum of two grey granite quarries of 3.19.5 Ha and 1.56.5 Ha.

4.1.2 Emissions Details

Drilling, Blasting, Loading, unloading and transportation of Grey Granite and wind erosion of the exposed area and movement of light vehicles will be the main polluting source in the mining activities that releasing Particulate Matter (PM10 &

PM2.5) affecting Ambient Air of the area. Emission during Blasting, Loading and unloading was calculated as the area sources. Transportation of the granite by trucks operated on the haul road was calculated as the line sources. Details of emission during loading/unloading and transportation on the haul road, wind erosion of the exposed area and road maintenance were discussed and combined impact was predicted in the worst case scenario under worst meteorological condition given as follows:

4.1.2.1 Drilling

Drilling is the process of making holes in grey granite to carry out smooth blasting. The drilling is most representative for point source. The rate of emission from the drilling process will be very high when compared to loading, unloading, transporting and blasting. So wet drilling will be proposed for the grey granite quarry which completely suppresses the dust emitted during drilling process.

4.1.2.2. Loading of rejects and weathered rocks (3.19.5 Ha and 1.56.5 Ha)

Chakraborty et al. (2002) was used to calculate emission of particulate matter released into the atmosphere during loading of Mineral.

$$E = [\{(100 - m)\ (m)^{-1}\}^{0.1}\ \{(s)\ (100 - S)^{-1}\}^{0.3}\ h^{0.2}\ \{(u)\ (0.2 + 1.05)^{-1}\}\{(xl)\ (15.4 + 0.87xl)^{-1}\}]$$

Table 4.1: Source Parameters (Loading of grey granite rejects)

S.No	Description	Symbol	Quantity
1	moisture content (%)	m	1(approx)
2	silt content (%)	s	3(approx)
3	wind speed (m s^{-1})	u	2.2
4	drop height (m)	h	1m above the tipper body
5	size of loader (m^3)	l	2.20
6	frequency of loading(no.h^{-1})	x	6 times
7	Area of Source (m^2)	a	47600 (31950 + 15650)
8	Uncontrolled emission rate (g s^{-1})	UE	0.483
9	Control efficiency (%)	c	90
10	Controlled emission rate (g s^{-1})	CE	0.0483

Totally 2 tippers and 2 hydraulic excavators will be proposed for two existing granite quarry.

Rejects (3.19.5 Ha) – 70289m^3 for 5 years or 6m^3/hr
Rejects (1.56.5 Ha) - 36235m^3 for 5 years or 3m^3/hr
Weathered rock (3.19.5 Ha) – 9647m^3 for 2 years or 2m^3/hr
Weathered rock (1.56.5 Ha) – 4484m^3 for 1 year or 2m^3/hr

The generation of rejects and weathered rock per hour for two quarries are calculated as 13m^3. The loading capacity of excavator is 2.2m^3.

x = frequency of loading (no. h^{-1}) = 13/2.2 = 6 times

4.1.2.3 Unloading of rejects and weathered rocks (3.19.5 Ha and 1.56.5 Ha)

Chakraborty et al. (2002) was used to calculate emission of particulate matter released into the atmosphere during unloading of rejects.

$$E = 0.023 [\{100-m\} sh \{m (100-s)^{-1}\}]^{2} (u^3 cy)^{0.1}$$

Table 4.2 Source Parameters (unloading of Rejects)

S.No	Description	Symbol	Quantity
1	moisture content (%)	m	1 (approx)
2	silt content (%)	s	3 (approx)
3	wind speed (m s^{-1})	u	2.2
4	drop height (m)	h	1.5 from ground surface
5	capacity of tipper (t)	c	20
6	frequency of unloading (no.h^{-1})	y	2 times (maximum)
7	Area of Source (m^2)	a	47600 (31950 + 15650)
8	Uncontrolled emission rate (g s^{-1})	UE	0.89
9	Control efficiency (%)	c	90
10	Controlled emission rate (g s^{-1})	CE	0.089

Rejects and weathered rock per hour for two grey granite quarries = 13 x 2.5 = 33MT;
Capacity of tipper (t) = 20MT
y = frequency of unloading (no.h^{-1}) = 33/20 = 2 times/hr

4.1.2.4 Loading of Overburden (Top Soil) (3.19.5 Ha and 1.56.5 Ha)

Chakraborty et al. (2002) was used to calculate emission of particulate matter released into the atmosphere during loading of Top soil.

$$E = [0.018\{(100-m) (m)^{-1}\}^{1.4}\{s (100-s)^{-1}\}^{1.4}(uhxl)^{0.1}]$$

Table 4.3: Source Parameters (Loading of Top soil)

S.No	Description	Symbol	Quantity
1	moisture content (%)	m	1.56 (Lab report)
2	silt content (%)	s	24
3	wind speed (m s^{-1})	u	2.2
4	drop height (m)	h	1m above the tipper body
5	size of loader (m^3)	l	2.20

6	frequency of loading(no.h^{-1})	x	1 time (maximum)
7	Area of Source (m^2)	a	47600 (31950 + 15650)
8	Uncontrolled emission rate (g s^{-1})	UE	1.38
9	Control efficiency (%)	c	90
10	Controlled emission rate (g s^{-1})	CE	0.138

Topsoil (3.19.5 Ha) – 1278m^3 for 2 years or 1m^3/hr

Topsoil (1.56.5 Ha) - 1131m^3 for 1 year or 1m^3/hr

The generations of top soil per hour for two quarries are calculated as 2m^3. The loading capacity of excavator is 2.20 m^3.

x = frequency of loading (no. h^{-1}) = 2/2.20 = 1 time

4.1.2.5 Unloading of Overburden (Top Soil) (3.15.5 Ha and 1.56.5 Ha)

Chakraborty et al. (2002) was used to calculate emission of particulate matter released into the atmosphere during unloading of overburden.

$$E = 1.76h^{1/2}\{(100-m)\ (m)^{-1}\}^{0.2}\{(s)\ (100-s)^{-1}\}^{2}u^{0.8}\ (cy)^{0.1}$$

Table 4.4 Source Parameters (Unloading of overburden or top soil)

S.No	Description	Symbol	Quantity
1	moisture content (%)	m	1.56 (Lab report)
2	silt content (%)	s	24
3	wind speed (m s^{-1})	u	2.2
4	drop height (m)	h	1.5 from the ground surface
5	capacity of dumpers (t)	c	20
6	frequency of unloading(no.h^{-1})	y	2
7	Area of Source (m^2)	a	47600 (31950 + 15650)
8	Uncontrolled emission rate (g s^{-1})	UE	0.91
9	Control efficiency (%)	c	90
10	Controlled emission rate (g s^{-1})	CE	0.091

Generation of top soil per hour for two grey granite quarries = 2 x 1.5 = 3MT;

Capacity of tipper (t) = 20MT

y = frequency of unloading (no.h^{-1}) = 3/20 = 1 time/hr

4.1.2.6 Haul Road (3.19.5 Ha and 1.56.6 Ha)

Chaulya (2006) was used to calculate emission of particulate matter released into the atmosphere during transportation of granite by truck operated per hour on haul road.

$$E = [\{(100-m)\ (m)^{-1}\}^{0.35}\ \{(us)\ (100-s)^{-1}\}]^{0.7}\{0.5 + 0.1(f + 0.42v)\}\ 10^{-3}$$

Table 4.5: Source Parameters (During Vehicle Movement on Haul Road)

S.No	Description	Symbol	Quantity
1	moisture content (%)	m	1.56 (Lab report)
2	silt content (%)	s	24
3	wind speed (ms^{-1})	u	2.2
4	frequency of transporting (no. h^{-1})	f	6 times (maximum)
5	average vehicle speed(ms^{-1})	v	4.1
6	Area of Source (m^2)	a	47600 (31950 + 15650)
7	Uncontrolled emission rate (g s^{-1})	UE	0.003
8	Control efficiency (%)	c	80
9	Controlled emission rate (g s^{-1})	CE	0.0006

Frequency of unloading for rejects (no.h^{-1}) = 2 times/hr

Frequency of unloading for top soil (no.h^{-1}) = 1time/hr

Frequency of transporting (no. h^{-1}), f =6 times (up and down)

4.1.2.7 Blasting (3.19.5 Ha and 1.56.5 Ha)

In another scenario when controlled blasting is carried out at the mine site and all the other activities are brought to halt. Significant amount of PM_{10} is released during blasting at mining site for very short-term.

$$E = E_f x\ Q$$

Table 4.6: Source Parameters (During Blasting)

S.No	Description	Symbol	Quantity
1	Uncontrolled Particulate matter emissions rate in pounds per year	UE	61
2	Emission factor in unit of pounds of particulate per ton shifted by blasting	E_f	TSP E_f = 0.0001 pounds/ton $PM_{10}E_f$= 0.0008 pounds/ton $PM_{2.5}E_f$ = 0.0008 pounds/ton
3	Amount of material of all types shifted by blasting during the year in tons	Q	76089
4	Control efficiency (%)	c	30
5	Controlled Particulate matter emissions rate in pounds per year	CE	50

(Reference: Mojave Desert Air Quality Management District, 1403 Park Avenue, Victoria, CA 92392 -2310).

Loading and unloading of granite rejects, overburden, movement of trucks on haul roads were considered as combined action. So the emission during loading, unloading and transportation were taken combined and US EPA based Dispersion AERMOD model was used for prediction of impact with 1-h meteorological data of the study period for the assessment of incremental GLC. Then blasting was considered as separate action and US EPA based Dispersion AERMOD model was used for prediction of impact separately.

4.1.2.8 Summary of calculated Emission Rates

Table 4.7: Emissions Rates of PM_{10}

Source type	Controlled Emission Rate ($g/s/m^2$)
Loading of Granite reject and weathered rock	1.01×10^{-6}
Unloading of Granite reject and weathered rock	1.87×10^{-6}
Over burden loading	2.8×10^{-6}
Over burden unloading	1.9×10^{-6}
Haul road	1.3×10^{-8}
Blasting	6.7×10^{-8}

Table 4.8: Emissions Rates of SO_2

Source type	Average Emission rate for HDDV as per EPA	Emission rate (Proposed Project)
Tippers	0.012 g/mile	4.3×10^{-8} $g/s/m^2$
Excavators	0.012 g/mile	2.6×10^{-7} $g/s/m^2$
Total Emission Rate		3.03×10^{-7} $g/s/m^2$

Table 4.9: Emissions Rates of NO_2

Source type	Average Emission rate for HDDV as per EPA	Emission rate (Proposed Project)
Tippers	0.725 g/mile	3.3×10^{-7} $g/s/m^2$
Excavators	0.725 g/mile	1.7×10^{-6} $g/s/m^2$
Total Emission Rate		2.03×10^{-6} $g/s/m^2$

4.1.3 Frame work of Computation & Model details

By using the above-mentioned inputs, ground level concentrations due to the mining activities have been estimated to know the incremental rise 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 modeling is an important tool for prediction of dispersion of pollutants with GLC and it is used to find the air pollution control activities which controls the emission rates of different activities.

4.1.3.1 Model Input data

The air pollution modeling carried out represents the normal operating scenarios. As the proposed activity is mining the major source of pollution is particulate matter and gaseous emission. The following data has required as input data for dispersion pattern.

1) Baseline data of PM_{10}, SO_X and NO_2 is needed along with meteorological data. Meteorological data preprocessor (AERMET) needs meteorological data which calculates atmospheric turbulence characteristics, mixing heights, surface heat flux for finding the atmospheric dispersion. Site specific data recorded during post monsoon season (1st March 2023 to 31st May 2023) at project site for executing modeling studies.
2) The emission rates of PM_{10}, SO_x and NO_2 from the various sources was taken.
3) Location of the project.

4.1.3.2 Model Results

The Air Quality Impact Prediction has been done by using AERMOD of USEPA". The main sources of air pollution with regard to the proposed project for the purpose of estimation of increase in PM_{10}, SO_X and NO_2 are identified due to –

1. Scenario 1 – PM_{10}

(i) Loading/unloading of granite rejects and overburden

(ii) Transportation of granite rejects, overburden by trucks on the Haul roads from mining benches.

2. Scenario 2 - PM_{10}

(i) Due to blasting

3. Scenario 3 – SO_x and NO_2

i. From Operation of Excavator and movement of transporting vehicle

Scenario1:

Table 4.10: Total predicted GLC of PM_{10} in core and buffer zone due to combined action of loading, unloading and Transportation of Granite by trucks on the haul road, open pit source of the mining lease area.

Location	Location Code	Background value in µg/m³	Incremental GLC in µg/m³	Total Predicted GLC in µg/m³
Mine site	AQ1 - Centre	44	27.83	71.83
Receptor 01	AQ2 - 458m- W	44	0.78	44.78
Receptor 02	AQ3 - 452m- NE	44	0.19	44.19
National Ambient Air Quality Standards (NAAQS)				**100**

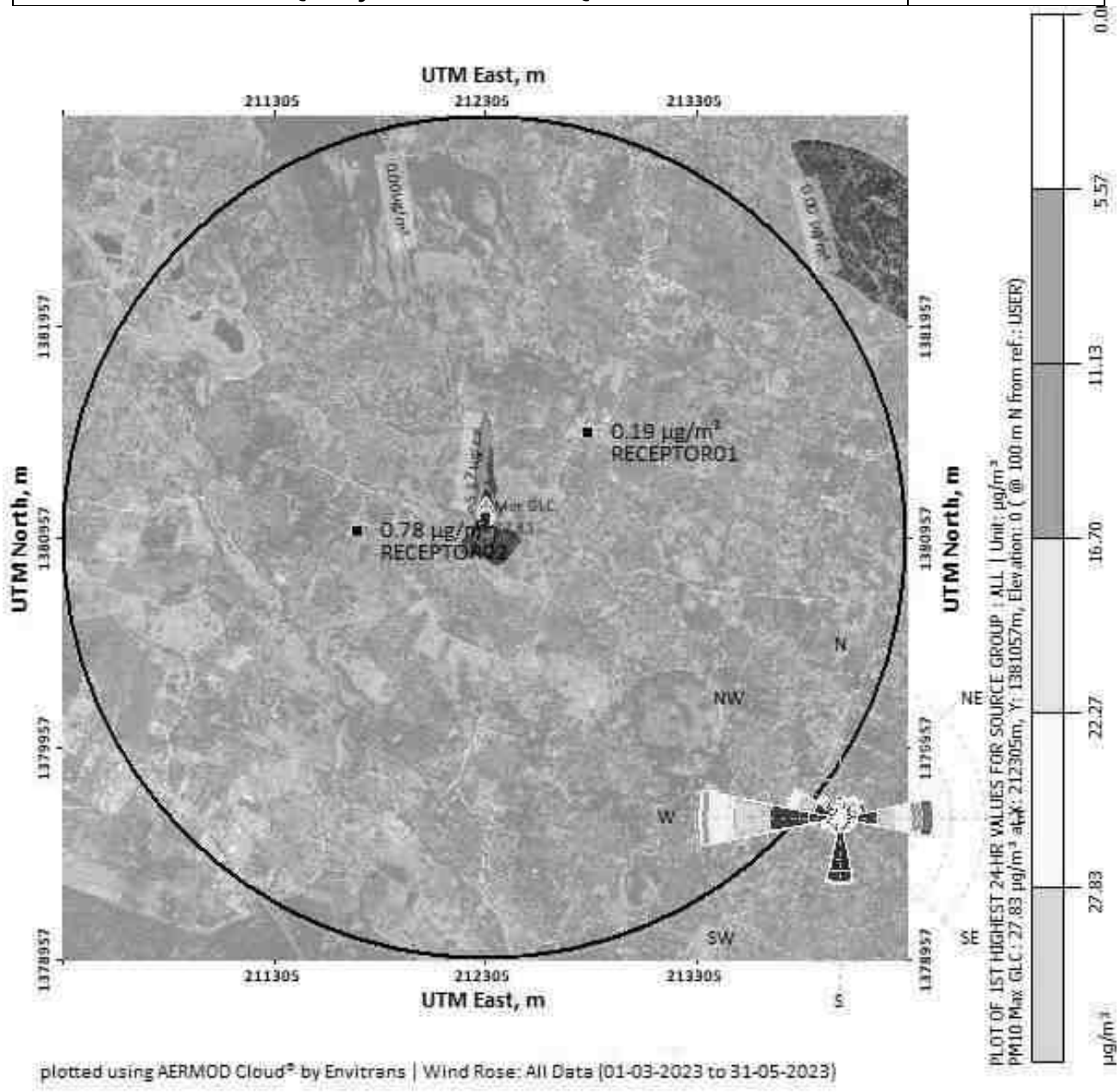


Fig No.4.1 Isopleth indicating Incremental value of PM10 due to combined action of loading, unloading, transportation of granite on haul road

Scenario 2:

Table 4.11: Total predicted GLC of PM_{10} in core and buffer zone due to blasting activity in the mining lease area.

Location	Location Code	Background value in µg/m³	Incremental GLC in µg/m³	Total Predicted GLC in µg/m³
Mine site	AQ1 - Centre	44	9.28	53.28
Receptor 01	AQ2 - 458m- W	44	0.26	44.26
Receptor 02	AQ3 - 452m- NE	44	0.06	44.06
National Ambient Air Quality Standards (NAAQS)				**100**

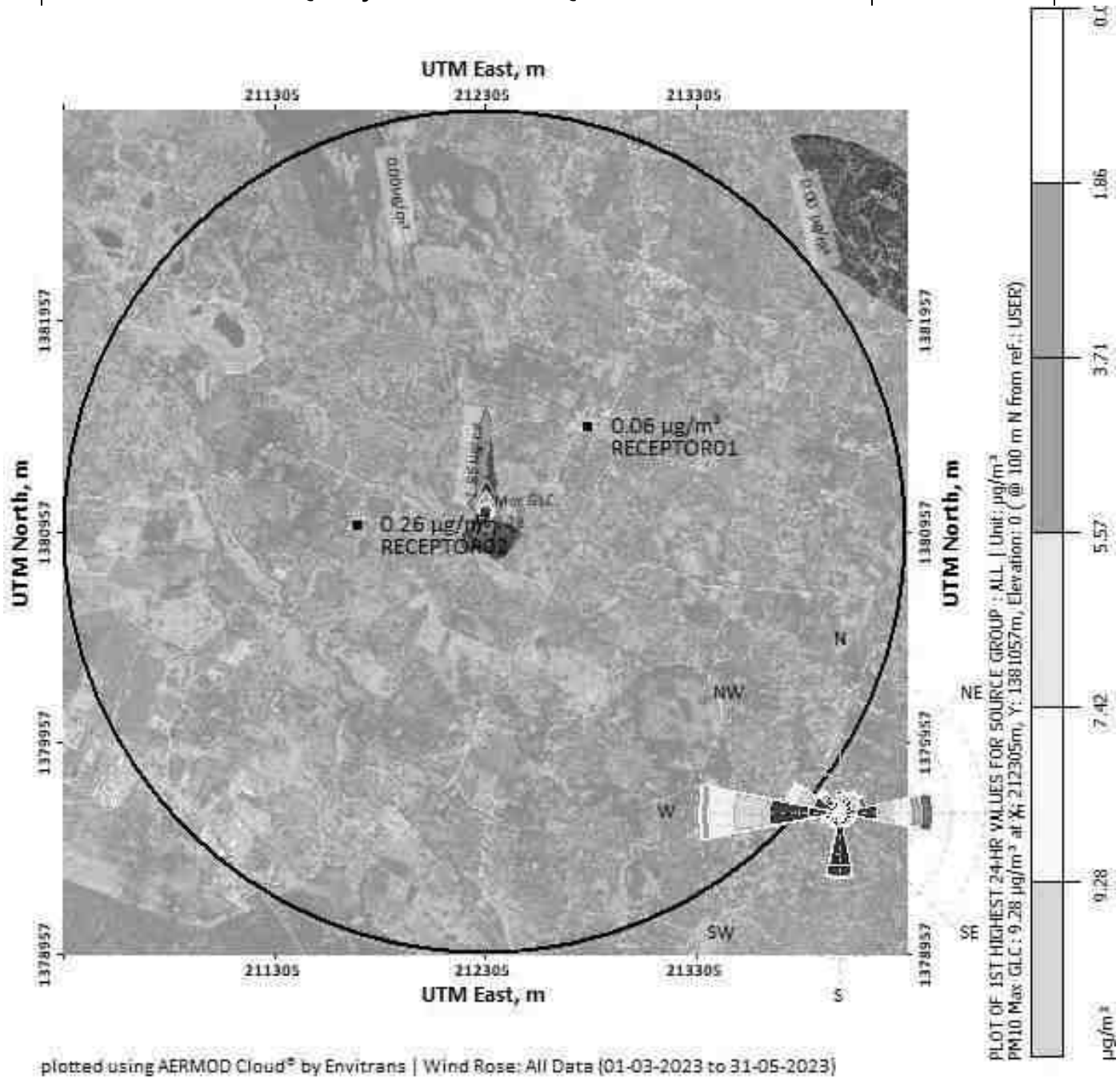


Fig No 4.2 Chart indicating Incremental value of PM10 due to blasting action.

Scenario 3:

Table 4.12: Impact of SOx due to Operation of Excavator and Movement of Vehicle in the mining lease area

Location	Location Code	Background value in µg/m³	Incremental GLC in µg/m³	Total Predicted GLC in µg/m³
Mine site	AQ1 - Centre	7	BDL	7
National Ambient Air Quality Standards (NAAQS)				**80**

Table 4.13: Impact of NOx due to Operation of Excavator and Movement of Vehicle in the mining lease area

Location	Location Code	Background value in µg/m³	Incremental GLC in µg/m³	Total Predicted GLC in µg/m³
Mine site	AQ1 - Centre	14	BDL	14
National Ambient Air Quality Standards (NAAQS)				**80**

AERMOD was used for prediction of impact of PM_{10} during conditions i) Loading/unloading and transportation of granite and weathered rock by trucks on Haul ii) During blasting of minerals. Total predicted 24-h maximum GLC of PM_{10} at project site for scenario 1 i.e loading-unloading and transportation and scenario 2 i.e. Blasting was 71.83µg/m^3 and 53.28 µg/m^3 occurred at the project site after superposition of base-line value 44 µg/m^3 over the incremental value of 27.83µg/m^3 and 9.28µg/m^3 due to combined impact of loading and unloading and transportation over the haul road and due to blasting. Meteorological data under worst case scenario providing 24-h maximum average GLC was discussed above.

4.1.4. Air Quality Index

An air quality index is defined as an overall scheme that transforms the weighed values of individual air pollution related parameters (for example, pollutant concentrations) into a single number or set of numbers (Ott, 1978). Air quality standards are the basic foundation that provides a legal framework for air pollution control. The basis of development of standards is to provide a rational for protecting public health from adverse effects of air pollutants, to eliminate or reduce exposure to hazardous air pollutants, and to guide national/ local authorities for pollution control decisions.

The objective of an AQI is to quickly disseminate air quality information (almost in real-time) that entails the system to account for pollutants which have short-term impacts. To present status of the air quality and its effects on human health, the following description categories have been adopted for IND-AQI.

AQI breakpoints for eight pollutant parameters considered for AQI and these are summarized below in Table with color scheme to represent the AQI bands.

Table 4.14: AQI and its associated Health Impacts

AQI	Associated Health Impacts
Good	Minimal Impact
Satisfactory	May cause minor breathing discomfort to sensitive people
Moderate	May cause breathing discomfort to the people with lung disease such as asthma and discomfort to people with heart disease, children and older adults
Poor	May cause breathing discomfort to the people on prolonged exposure and discomfort to people with heart disease with short exposure
Very Poor	May cause respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases
Severe	May cause respiratory effects even on healthy people and seious health impacts on people with lung/heart diseases. The health impacts may be experienced even during light physical activity

Table 4.15: Proposed Breakpoints for AQI Scale 0-500
(Units: µg/m^3 unless mentioned otherwise)

AQI Category (Range)	PM_{10} 24-hr	$PM_{2.5}$ 24-hr	NO_2 24-hr	O_3 8-hr	CO 8-hr (mg/m^3)	SO_2 24-hr	NH_3 24-hr	Pb 24-hr
Good (0-50)	0-50	0-30	0-40	0-50	0-1.0	0-40	0-200	0-0.5
Satisfactory (51-100)	51-100	31-60	41-80	51-100	1.1-2.0	41-80	201-400	0.5 –1.0
Moderately polluted (101-200)	101-250	61-90	81-180	101-168	2.1- 10	81-380	401-800	1.1-2.0
Poor (201-300)	251-350	91-120	181-280	169-208	10-17	381-800	801-1200	2.1-3.0
Very poor (301-400)	351-430	121-250	281-400	209-748*	17-34	801-1600	1200-1800	3.1-3.5
Severe (401-500)	430 +	250+	400+	748+*	34+	1600+	1800+	3.5+

**One hourly monitoring (for mathematical calculation only)*

4.1.4.1. Interpretation of Air quality using IND-AQI:

Table 4.16: Computation of AQI with Baseline data

Air pollutants	Total Predicted GLC due to proposed quarry µg/m^3	AQI	Associated Health Impacts
PM_{10}	71.83	Satisfactory (51-100)	May cause minor breathing discomfort to sensitive people
SOx	7	Good (0-50)	Minimal Impact
NO_2	14	Good (0-50)	Minimal Impact

The above table shows the AQI quality due to total predicted GLC of quarry in core area. PM_{10} value is between 51-100 of AQI which is satisfactory and may cause minor breathing discomfort to sensitive people. SO_2 and NO_2 are between 0-40 of AQI which is good and may cause Minimal Impact. When all the quarries in the cluster area are working together the incremental GLC will be high and it may cross the prescribed limits by NAAQS. To overcome such situation, cluster committee should be formed and adopt the environmental management plan effectively as per EIA report.

4.1.5. Mitigation Measures

The pollutants from nearby ongoing mining activities, residential and commercial activities are the primary sources of air pollution. However, in the study area adequate control measures will be implemented in future at the time of mining operation. Mitigate measures suggested for air pollution controls are based on the baseline ambient air quality of the area. From the point of view of maintenance of an acceptable ambient air quality in the region, it is desirable that air quality is monitored on a regular basis to check compliance of standards as prescribed by regulatory authorities. However, to further minimize the pollutant concentration especially PM_{10}, the following control measure should be adopted by the project proponent.

- Regular water sprinkling on haul roads, blasted heaps, service roads and overburden dumps at regular intervals will help in reducing considerable dust pollution
- 1.0 KLD of water will be used for dust suppression of two quarries.
- Use of Sharp drill bits for drilling holes and charging the holes by using optimum charge and using time delay detonator.
- Conventional low explosives are being used.
- The scale of blasting is however very less considering the rate of production.
- Covering of material when transport through trucks/dumper

- The drilling and blasting are being carried out as per the proposals laid down in the approved plan.
- Proposed to follow up muffle blasting so as to prevent fly rock fragments
- Avoiding blasting during high windy periods and temperature inversion periods
- Delay blasting under unfavorable wind and atmospheric conditions
- Use of appropriate explosives for blasting and avoiding overcharging of blast holes
- The vehicles and machinery will be kept in well maintained condition so that emissions will minimize
- Provision of green belt all along the periphery of the lease area for control of dust
- Information on wind direction and meteorology will be considered while planning, so that pollutants, which cannot be fully suppressed by engineering technique, will be prevented from reaching the residential areas
- Cabins for shovel and dumpers and dust masks to workmen will be provided
- The dust respirators should be provided to all workers working in dusty environment
- Regular health check–up of workers and nearby villagers in the impacted area should be carried out and also regular occupational health assessment of employees should be carried out as per the Factories Act
- Ambient Air Quality Monitoring will be conducted on regular basis to assess the quality of ambient air.

As discussed above under each activity, there will be increase in terms of dust load and gaseous emissions. However, it can be stated that these incremental contributions will remain within the prescribed limits/norms. Further, the mitigation measures will further bring down these concentrations making the mining activities more eco-friendly.

4.2 Carbon emission and carbon sinks due to proposed mining activity

4.2.1 Carbon emissions

There are both natural and human sources of carbon dioxide emissions. Natural sources include decomposition, ocean release and respiration. Human sources come from industrial activities such as cement production, deforestation as well as the burning of fossil fuels like coal, oil and natural gas.

4.2.1.1 Carbon emission due to natural activity in project site and carbon sinks

a) Carbon from decomposition

As the proposed mining activity is carried out in existing mining pit, there will be no need of cutting of any trees or plants. So the process of decomposition will not take place which emits carbon dioxide into the atmosphere.

b) Carbon from respiration

The carbon dioxide we exhale does not contribute to global warming for the simple reason. Since all the carbon dioxide we exhale captured by plants during photosynthesis, we are not disturbing the carbon dioxide content of the atmosphere by breathing.

4.2.1.2 Carbon emission due to human activity in project site and carbon sinks

a) Carbon from Vehicles

The proposed method of mining is semi mechanized which involves activity of excavator and tippers. The burning of fossil fuels used for the tippers and excavators releases carbon monoxide, carbon dioxide and nitrogen oxide into the atmosphere. When those gases are emitted into the atmosphere it affects the amount of greenhouse gases, which are linked to climate change and global warming. In average based on the production per day, 2 tippers can travel 7.4 miles within the lease area for transporting the rejects and overburden. Plants not only absorb carbon dioxide but also absorb other gases and remove the impurities from it.

Table 4.17: Emission of carbon monoxide carbon dioxide from vehicle

Source type	Average Emission rate of CO for HDDV as per EPA	Emission rate of CO
Tippers	2.311 g/mile	0.0171 kg/day
Excavators	2.311 g/mile	0.718kg day
Total Emission Rate		0.7351 kg/day

Average emission rate – 2.311 g/mile or 1.436 g/km or 1.436 g/200ml of diesel
For one liter of diesel consumption by HDDV, ER – 7.18g

Tippers

Travel distance - 7.4 mile/day
Emission rate by tipper per day – 7.4 x 2.33 – 17.1014 g/day or 0.0171kg/day

Excavators

Diesel requirement per day – 100 liters
Emission rate by excavators per day – 100 x 7.18 – 718g/ day or 0.718kg/day

Remediation

The project proponent proposed to plant nearly 500 numbers of one year taller tree sapling along the safety zone of mining lease area to overcome the emission of carbon gases and other gases by vehicles in the quarry. Moreover, they will plant trees along the village road and government schools under CER and CSR schemes. BS –VI model of tippers are proposed to use in the quarry for the controlled emission of gases.

4.3 Soil Carbon stock

Soil carbon sequestration is a process in which CO_2 is removed from the atmosphere and stored in the soil carbon pool. This process is primarily mediated by plants through photosynthesis, with carbon stored in the form of SOC. Carbon is the main component of soil organic matter and helps give soil its water-retention capacity, its structure, and its fertility. The dense carbon stocks below and above the soil are mostly seen in dense forest where more process of photosynthesis takes place and tons of leaves, branches gets decomposed. The agricultural activity in field can degrade and deplete the SOC levels during the process of tillage in paddy, sugarcane turmeric crop field.

The reserve forest within 10km radius of the project site is given below

1. Thogarapalli R.F. -1.7km – S
2. Bargur R.F – 6.9km – NE
3. Varatanapalli – 8.0km – NW
4. Nandibanda R.F – 8.2km – NE
5. Neralakotta R.F – 10.4km - N

As it is mining project which is carried out within lease area it will not affect any soil carbon stock in the nearest reserve forest.

4.4 Noise Environment

Noise survey has been conducted in the study area to assess the background noise levels in different zones. The anticipated noise level due to proposed mining activity has been assessed considering baseline noise level, distance involving mining site to nearest village and noise generated due to proposed mining activity. Following are the sources of noise in the proposed open cast granite quarry project.

- Drilling;
- Blasting;
- Vehicular Movement.

The drilling operation is being carried out by Jack hammer operated by compressor mounted with tractor. The noise levels in the working environment are being and will be maintained within the standards prescribed by Occupational Safety and Health Administration (OSHA). These standards were established with the emphasis on reducing the hearing loss. The permissible limits, as laid down by CPCB, are presented in below Table 4.18.

Noise generated from blasting is always instantaneous. The noise produced by blasting is for extremely short duration of around 0.5 seconds, though with a high intensity. Blasting time is generally fixed at lunch interval or after the working shift taking. Noise of blast is site specific and depends on type, quantity of explosives, dimensions of drill holes, degree of compaction of explosive in the hole and rock. Blasting, in addition to easing the hard strata, generates ground vibrations and instantaneous noise. The noise levels in many situations will be above Threshold Limit Value. Exposure to noise levels, above Threshold Limit Value may have detrimental effect on the workers' health. The adverse effects of high noise levels on exposed workers may result in Annoyance, Fatigue, Temporary shift of threshold limit of hearing, Permanent loss of hearing and Hypertension and high blood cholesterol, etc.

Noise pollution poses a major health risk to the mine workers. When noise in the form of waves impinges the eardrum, it begins to vibrate, stimulating other delicate tissues and organs in the ear. If the magnitude of noise exceeds the tolerance limits, it is manifested in the form of discomfort leading to annoyance and in extreme cases to loss of hearing. Detrimental effects of noise pollution are not only related to sound pressure level and frequency, but also on the total duration of exposure and the age of the person.

Table 4.18: Permissible Exposures in Cases of Continuous Noise (CPCB)

Sound Level (dB A)	Continuous Duration (Hours)
85	8
88	4
91	2
94	1
97	0.5
100	0.25

Table 4.19: Noise Exposure Levels & Its Effects

Noise Levels dB(A)	Exposure Time	Effects
85	Continuous	Safe
85-90	Continuous	Annoyance and Irritation
90-100	Short term	Temporary shift in hearing threshold, generally with complete recovery
Above 100	Continuous	Permanent loss of hearing
100-110	Several years	Permanent deafness
110-120	Few months	Permanent deafness
120	Short term	Extreme discomfort
140	Short term	Discomfort with actual pain
150 and above	Single exposure	Mechanical damage to the ear

Source: Hand Book of EIA, Rao & Wooten

4.4.1 Anticipated Impacts due to Noise in Core Zone

During the operation phase of mining, movement of HEMM also add some noise level whose impact is being minimized by continuous maintenance of vehicle. The likely generations of noise levels due to operation of HEMM are given in Table 4.20.

Table 4.20: Expected Noise Levels

Equipment's	Expected Noise Levels dB(A)
Mining	
Drilling	90-100
Shovel	75-80
Tipper	75-80
Dozers	85-90
Crusher	85-95

The mine site where heavy earth moving machinery will operate, noise level will be within the stipulated 90 dB (A) norm of DGMS. The protection measures for the operators of this equipment will reduce the impact/exposure.

Predicted noise levels due to mining operations using Mathematical Equations

$L_2 = L_1 - 20 \log_{10} (R_2/R_1)$ Where L_1dB (A) = Noise level at a distance R_1 (m)
L_2dB (A) = Noise level at a distance R_2 (m) &
$L = 10 \log_{10} (10^{L_1/10} + 10^{L_2/10} + \text{----------} + 10^{Ln/10})$
Where L_1, L_2 and Ln are noise level dB (A)

Table 4.21: Predicted Noise levels in Core Zone and buffer zone

Location Code	Distance km	Source Noise Level, dB(A)	L(Day) dB(A)	L(Night) dB(A)	Noise level at Receptor from Mining sources, dB(A)	Resultant noise level, dB(A) day time	Resultant noise level, dB(A) Night time
Core Zone	--	100	36.7	36.1	100	100	36.1
Lease boundary Pillar (North)	0.075	100	37.8	37.5	70	70	37.5
Lease boundary Pillar (West)	0.075	100	41.3	40.9	70	70	40.9
Lease boundary Pillar (East)	0.075	100	39.5	39.4	70	70	39.4
Lease boundary Pillar (South)	0.075	100	36.2	35.5	70	70	35.5
Jagadevipalayam (W)	3.5	100	44.5	43.6	36.6	45.1	43.6
Bagimanoor	0.42	100	40.5	40.1	55.0	55.1	40.1
Gandhinagar (S)	2.5	100	42.6	41.7	39.5	44.3	41.7
Sekilnatham (NE)	4.2	100	41.9	40.1	35.0	42.7	40.1
MGR Nagar Bargur (N)	5.7	100	47.4	44.3	32.4	47.5	44.3

Green colour- Baseline Value, Red Colour – Noise level due to mining,
Blue colour- Baseline + Noise level due to mining

Although the noise level due to the operation of various mining machineries is 100dB(A), the noise level at different receptors is lower due to the distance involved and other topographical features adding to the noise attenuation. The calculated values at the receptors and resultant noise level are based on the mathematical formula as mentioned above.

The anticipated noise level in buffer villages due to mining activity is calculated by considering operation of one quarry only. **When all the quarries in the cluster work together in same time, the resultant noise level may increase up to 5 decibel.**

To overcome the noise pollution due to operation of quarries in the cluster area the following mitigation measure should be followed.

4.4.2 Mitigation measures for Control of Noise

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

- Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.
- Limiting time exposure of workers to excessive noise.
- Proper and regular maintenance of vehicles, machinery and other equipments.
- The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments.
- Speed of trucks entering or leaving the mine will be limited to moderate speed to prevent undue noise from empty vehicles.
- Carrying out blasting only during day time and not on cloudy days.
- Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes.
- Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment
- Provision of Quiet areas, where employees can get relief from workplace noise.
- The development of green belts around the periphery of the mine to attenuate noise.
- Regular medical check–up and proper training to personnel to create awareness about adverse noise level effects.

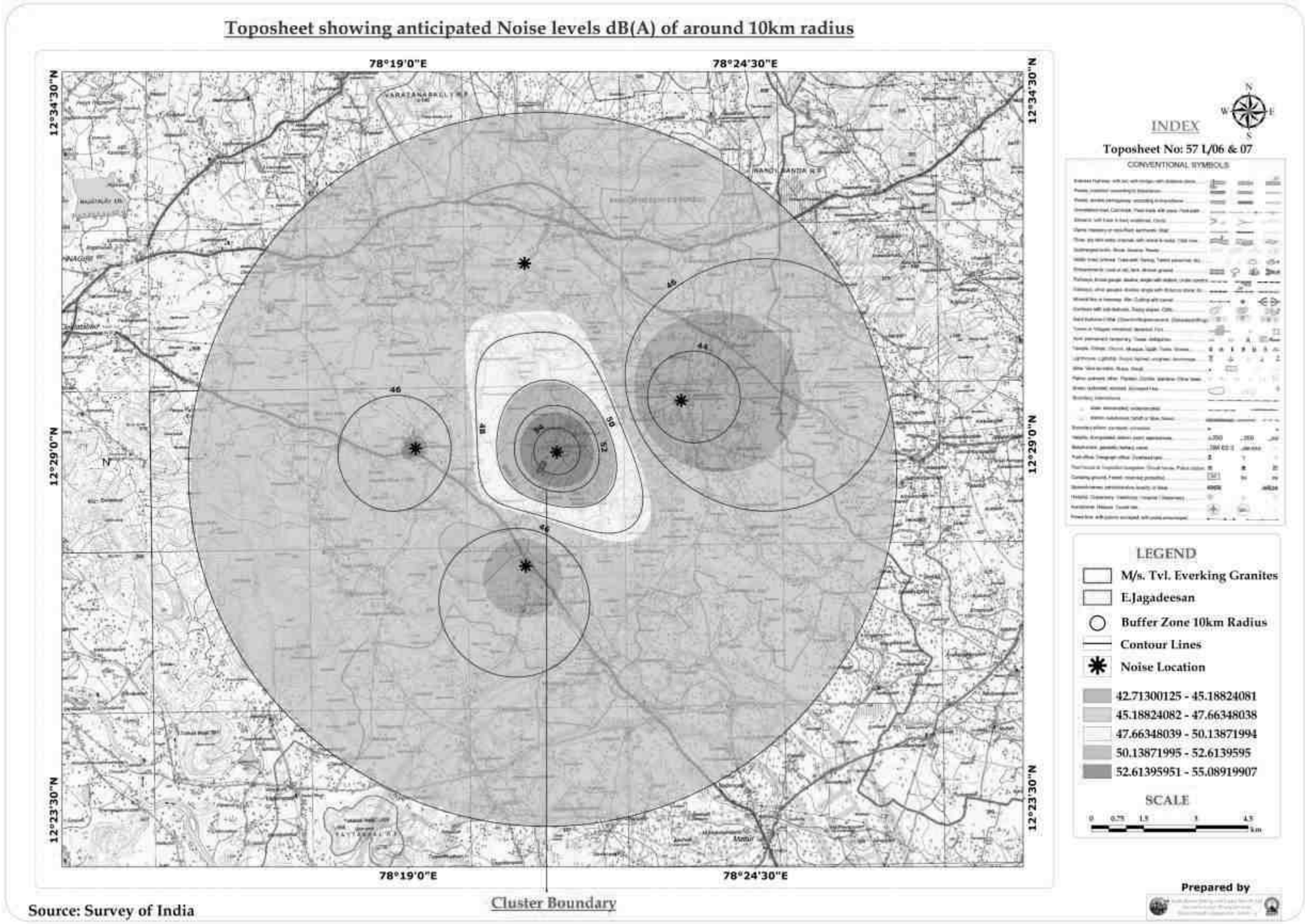


Fig 4.3: Noise dispersion in Buffer zone due to proposed mining activity

4.5 Ground Vibrations

Ground vibration due to mining activities in the area are anticipated due to operation of mining machines like excavators, wheel loaders, drilling and blasting, transportation vehicles, etc. However, the major source of ground vibration from this mine is blasting. Another impact due to blasting activities is fly rocks. These may fall on the houses or agriculture fields nearby the mining lease area and may cause injury to persons or damage to the structures. The nearest major habitation, Bagimanur village is located in northeast Side. The study area does not involve any mining activity so anticipated impact has been assessed using the empirical equation. The empirical equation used for assessment of peak particle velocity (PPV) is:

$$V= 417.8 \{D/ (Q^{0.5})\}^{-1.265}$$

Where
V= Peak particle velocity in mm/s
D= Distance between location of blast and gauge point in m
Q=Quantity of explosive per blasting in kg.

The standards for safe limit of PPV are established by Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. Permissible standards of Ground vibration due to blasting as per guidelines of Director General of Mines Safety (DGMS), Dhanbad are given in Table 4.24.

Table 4.22: Estimated Peak Particle velocities for different Explosive Charges (Tvl. Everking Granites 3.19.5 Ha)

Nearest Habitation	Quantity of Explosive/Blast, Kg	PPV, mm/s
137m – SW	24	6.2
137m – SW	20	5.5
137m – SW	18	5.15
137m – SW	17	4.9
137m – SW	16	4.5
420m – NW	24	1.5
420m – NW	100	3.7
420m – NW	160	4.9

ROM for five years = 1,00,413 m^3
ROM for a year = 100413/5 = 20,083 m^3
= 20083x 2.5 =50207 MT.
Per day ROM = 167 MT
Explosives requirement= 167/7 = 24 kg/day

Table 4.23: Estimated Peak Particle velocities for different Explosive Charges (Thiru.E.Jagadeesan 1.56.5 Ha)

Nearest Habitation	Quantity of Explosive/Blast, Kg	PPV, mm/s
202m -SW	12	2.4
202m –SW	25	3.8
202m -SW	38	5.0
700m – NW	12	0.5
700m – NW	150	2.5
700m – NW	300	3.8
700m – NW	450	5.0

ROM for five years = 51764m^3

ROM for a year = 51764/5 = 10353m^3

= 10353 x 2.5 = 25883 MT.

Per day ROM = 86MT

Explosives requirement= 86/7 =12 kg/day

Note: The empirical formula does not take into account the delay factor in blasting due to use of Delay Detonators.

Table 4.24: Permissible Peak Particle Velocities (mm/s)

S. No	Type of Structure	Dominant excitation Frequency		
		< 8 Hz	8 – 25 Hz	> 25 Hz
A)	**Buildings/structures not belonging to the owner**			
1	Domestic houses/structures (Kuchcha brick and cement)	5	10	15
2	Industrial Buildings (RCC and framed structures)	10	20	25
3	Objects of historical importance and sensitive structure	2	5	10
B)	**Buildings belonging to the owner with limited life span**			
1	Domestic houses/structures (Kuchcha brick and cement)	10	15	25
2	Industrial buildings (RCC & framed structures)	15	25	50

Source: DGMS Circular No. 7 dated 29/08/1997

From the above results (Table 4.22), it can be seen that the charge per blast of 24kg is above the Peak Particle Velocity of 5mm/s for the habitation located at the distance of 137m. So the project proponent (Tvl. Everking Granites) is recommended to adopt delay detonators to keep PPV of ground vibration below 5mm/s. From the Table 4.23, it can be seen that the charge per blast of 12kg is well below the Peak Particle Velocity of 5mm/s for the habitation located at the distance of 202m.

4.5.1 Mitigation measures for Control of Vibration

Blasting is the major source of vibration and fly rocks. The following mitigation measures are proposed for control of vibration and fly rocks.

- Specific charge pattern has to be designed by proper trial vibration studies with varying charge ratios.
- Milli second detonators shall be used preferably 25–50ms per delay to control vibrations.
- Inclined holes shall minimize back brake and intensive shocks.
- In case of development work if any, cushion blasting and Deck loading system shall be adopted to minimize throw of fragments and ground vibration.
- Air blast due to usage of Detonating Cord with 10gms/m shall be reduced to 5gms/m to minimize air reverberation.
- If the vibration still exceeds the limit a long Trench to a depth of 6m may cut in the direction of wave's movement to break longitudinal waves which travel close to surface, preferably near mine buffer zone.
- No deep hole blasting shall be practiced.
- Heavy machineries with high ground pressure shall not be used in the mines.
- Proper warning signals should be used.
- In spite of all measures periodical testing of vibration and noise using approved seismograph by DGMS has to be followed as a part of Environmental monitoring.

Though all mitigation measures are pointed out, as such no adverse effects on human life, wild life and other biotic system.

4.6 Water Environment

Mining operations can affect groundwater quality in several ways. The most obvious occurs in mining below the water table, either in underground workings or open pits. This provides a direct conduit to aquifers. Groundwater quality is also affected when waters (natural or process waters or wastewater) infiltrate through surface materials (including overlying waste or other material) into ground water.

Whereas Impacts on surface water include the build–up of sediments or other toxic products, short and long–term reductions in pH levels (particularly for lakes and reservoirs), destruction or degradation of aquatic habitat, and contamination of drinking water supplies and other human health issues. The water balance for the two proposed project is presented in Fig 4.4.

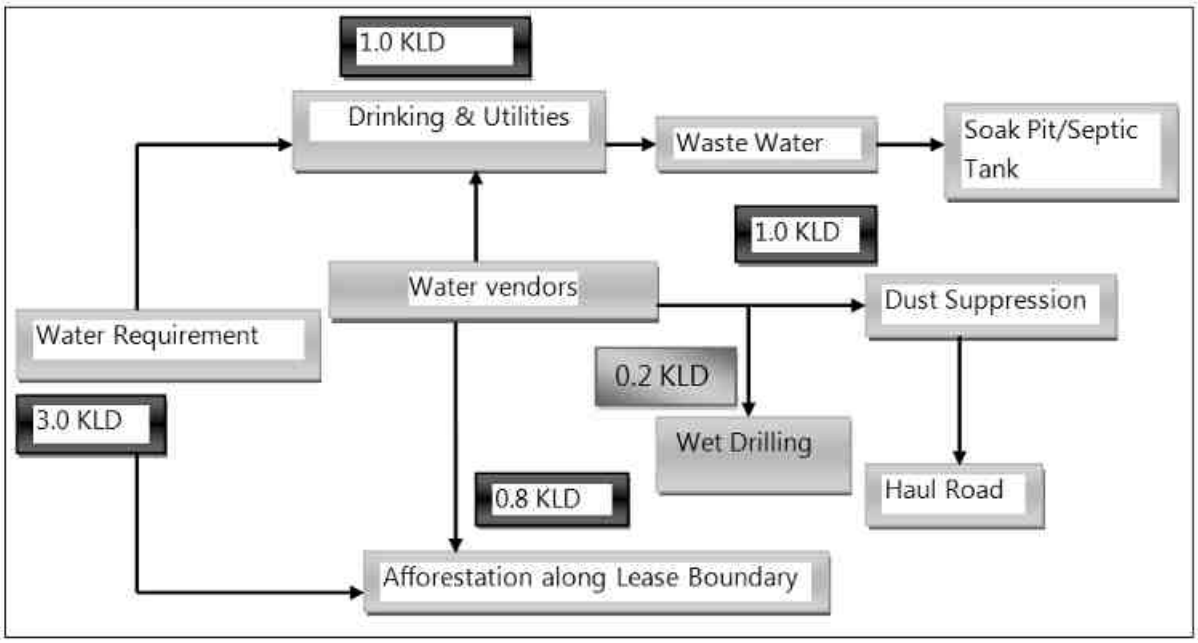


Fig. 4.4 Water Balance chart for each quarry Tvl. Everking Granites & Thiru.E.Jagadeesan

There are no probable sources of liquid effluents in this project. The domestic effluent/ wastewater generated from office will be discharged into soak pit via septic tank.

4.6.1. Anticipated Impact on Surface Water body due to proposed projects

There is one stream located within 1 km radius of mining lease area. The details of river body are given below.

1. Mattur Stream – 780m – SW

From the Drainage Pattern Map, it is found that the 1st order stream connect the lease area of Tvl. Everking Granites with Mattur Stream in located in south side. So the probability of silitation in that stream due to dumping of rejects within the lease area is high. So the following mitigation shall be followed to overcome the pollution of surface water bodies due to mining activity.

4.6.1.1 Mitigation Measures:

i. The garland drainage will be provided around the dump to prevent the escape of runoff along with silt and stone from the dump.
ii. The repair works of the machineries are strictly prohibited within the lease area to prevent the spillage of grease, oil etc.

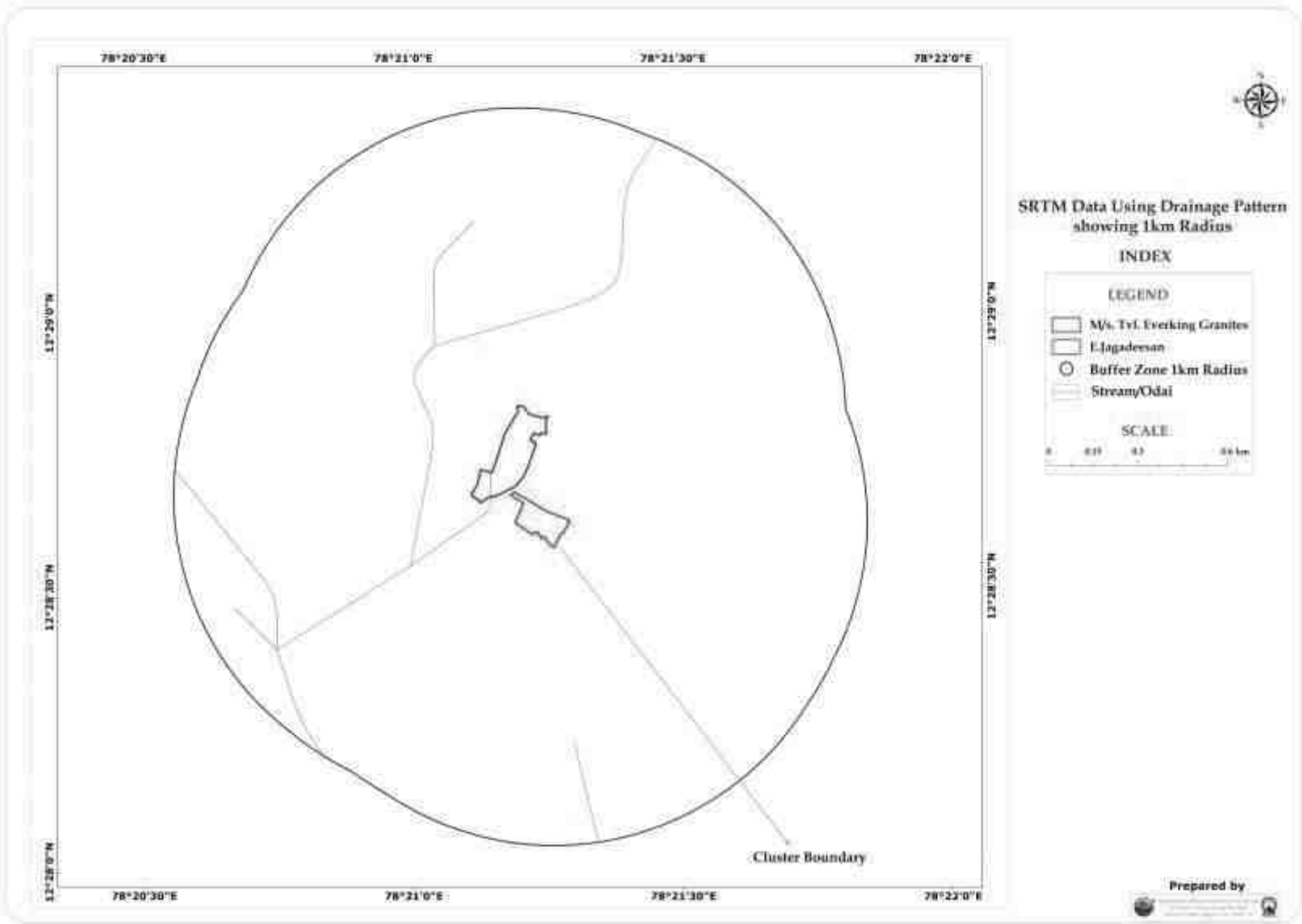


Fig No 4.5 Map Showing drainage pattern within 1km radius of the project site

4.6.2 Anticipated Impact on Ground water due to proposed project

The water table in this region is about 40m bgl. The proposed depth of mining for two quarries is 30 and 36m bgl. Thus, the mining activity will not intersect ground water table. No chemical having toxic elements will be used for carrying out mining activity. Also granite does not contain any kind of toxic element which can contaminate the water. So the rain water or water used for drilling purposes which infiltrates into the ground in the lease area does not affect the quality of ground water. The schematic representation of depth of mining and water table is given in Figure 4.6 & 4.7.

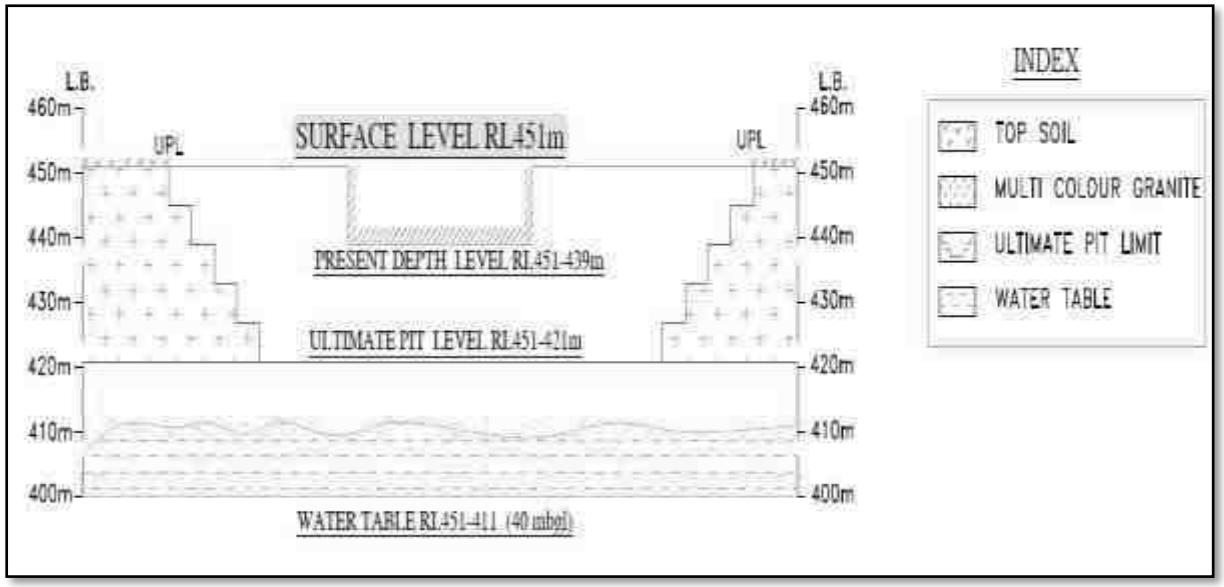


Fig.4.6 Schematic representation of depth of mining and water level for Tvl. Everking Granites (3.19.5 Ha)

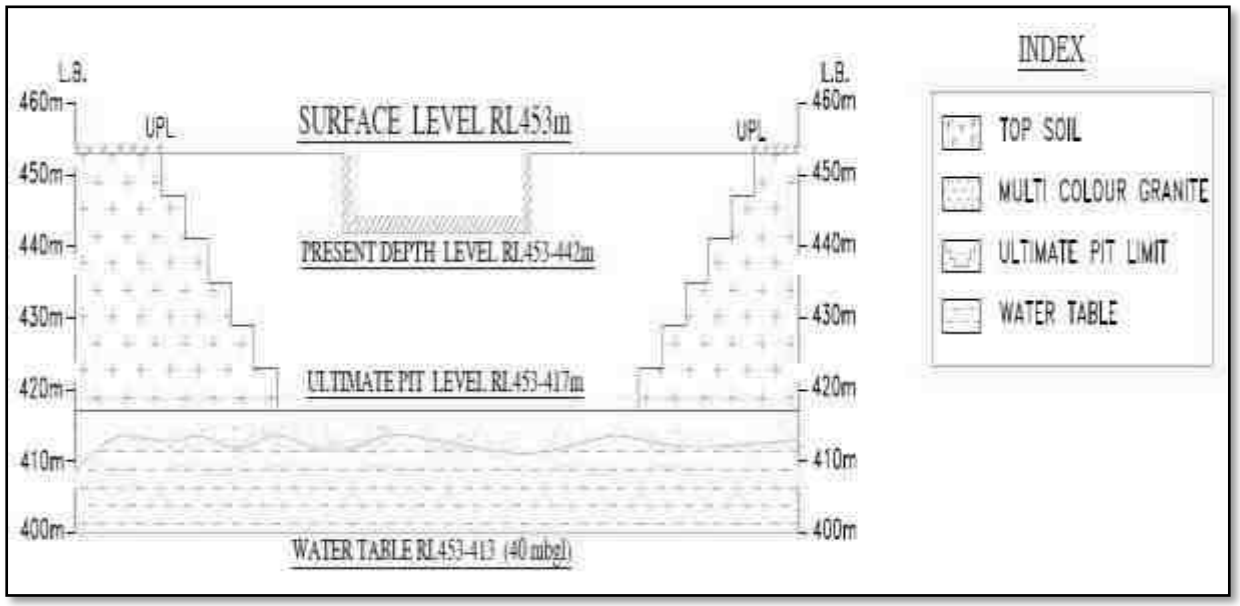


Fig.4.7 Schematic representation of depth of mining and water level for Thiru.E.Jagadeesan (1.56.5 Ha)

4.6.3 Management of rain water in the pit during Monsoon Season

During monsoon season, the rain water gets stored in the quarried out pit. For the working purpose, rain water will be pumped and allowed to store in the surface setting tank constructed outside the lease area to remove suspended solids if any. After the sedimentation process, the water from the settling tank will be used for dust suppression, and green belt development within the lease area.

4.6.4 Water Quality Index

Water Quality Index value has been calculated for the observed values and compared with drinking water specification as per IS 10500:2012 and results were discussed. The WQI has been calculated by using the standards of drinking water quality recommended by the World Health Organization (WHO), Bureau of Indian Standards (BIS) and Indian Council for Medical Research (ICMR). The weighted arithmetic index method (Brown et. al.,) has been used for the calculation of WQI of the water body.
Water Quality Index = Σ qn Wn / Σ Wn
Further quality rating or sub-index (qn) was calculated using the following expression.

qn = 100*[Vn – Vio] / [Sn – Vio] Where,
qn = Quality rating for the nth water quality parameter.
Vn = Estimated value of the nth parameter at a given sampling station.
Sn = Standard permissible value of the nth parameter.
Vio = Ideal value of nth parameter in a pure water.
Ideal value in most cases Vio = 0 except in certain parameters like PH and dissolved oxygen. Vio for PH = 7 and Vio for DO = 14.6
Wn = Unit weight for the nth parameter.

The overall Water Quality Index (W.Q.I.) was calculated by aggregating the quality rating with the unit weight linearly.

Table 4.25: Water Quality Index (W.Q.I.) and Status of water quality (Chatterji and Raziuddin 2002)

Water Quality Index Level	Water Quality Status
0 – 25	Excellent water quality
26 - 50	Good water quality
51 - 75	Poor water quality
76 - 100	Very Poor water quality
>100	Unfit for Drinking

Table 4.26: Analyses of water quality using Water Quality Index

Parameters	As Per IS 10500:2012	Unit Weight (Wn)	Core Zone	Jagadevi palayam	Sekil natham	Gandhi nagar	MGR Nagar (Bargur)
Water Quality Index Level			**32.05**	**39.8**	**48.4**	**75.4**	**53.3**
Water Quality Status			**Good water quality**	**Good water quality**	**Good water quality**	**Poor water quality**	**Poor water quality**
pH value at 25°C	6.5 – 8.5	0.079	7.10	7.08	7.20	7.59	7.10
Turbidity , NTU	Max 1 NTU	0.0853	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)	BDL(DL:0.1)
Total Dissolved Solids, mg/L	Max 500 mg/L	0.135	**686**	**600**	**704**	**1020**	**819**
Total Hardness as $CaCO_3$, mg/L	Max 200 mg/L	0.059	**228**	**333**	**389**	**500**	**488**
Chlorides as Cl, mg/L	Max 250 mg/L	0.132	57	210	**267**	**505**	248
Sulfates as SO_4, mg/L	Max 200, mg/L	0.097	20	12	16	24	19
Total Iron as Fe, mg/L	Max 0.3 mg/L	0.088	0.08	0.06	0.07	0.08	0.08

Note: Water Quality is calculated only for Physical and Chemical Parameters

The value of TH, TDS of water sample from all the above said locations are beyond the acceptable limits. Water sample from Sekilnatham village and Gandhi Nagar has high Chlorides. Based on the Water Quality Index calculated, water qualities from all core zone, Jagadevipalayam and Sekilnatham village are found good. In Gandhi nagar and MGR Nagar the water quality is found to be poor. For excellent quality, the water should be treated by reverse osmosis to reduce dissolved solids and total hardness to the required rate. Boiling of water will remove the microorganisms effectively from all waters in the above said villages and core zone making the water aseptically fit for drinking purposes.

4.6.5 Impact on Hydrogeology

i. RESISTIVITY SURVEY ANALYSIS

Electrical Resistivity survey by Schlumberger configuration was conducted to interpret various geological formation and possibility of water spring touch at various depths by Inverse slope method. At a depth of 80m bgl there is an indication of fractures where the seepage of ground water may occur.

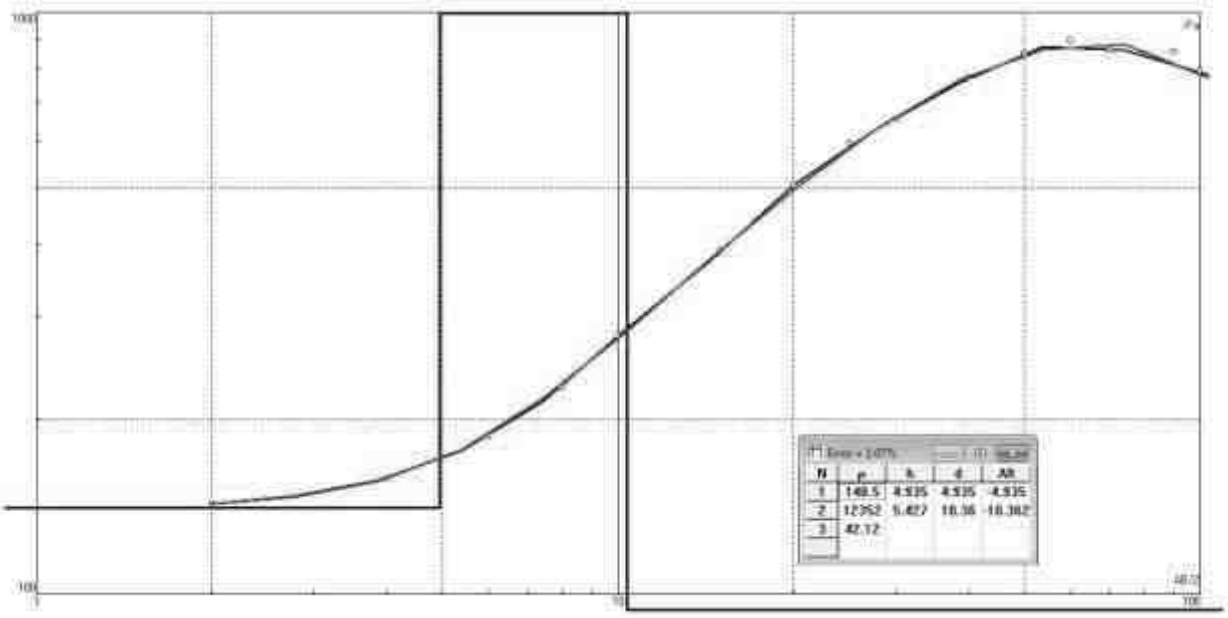


Fig No. 4.8 Interpreted resistivity curve of the study area

The various geological formations and water touch as interpreted is given below,

Table 4.27: Resistivity Survey

Layer	Depth (m)	Nature of formation	Resistivity Value
h1	0–4.9	Top soil & Weathered formation	140 Ω m
h2	4.9-79.5	Massive granitic formation	12352 Ω m
h3	79.5 - 80	Fractured zone	42.12 Ω m

From the results of Resistivity Survey, it is understood that the study area is composed of granite deposit, with little geological disturbances by folding. It is grey in color. Mild Seepage of Ground water is reported at 50-51m bgl.

4.7 Soil Environment

4.7.1 Impact on Soil Environment

a) Tvl. Everking Granites -3.19.5 Ha

For the plan period 2023-2028, the generation of top soil is estimated as 1278 m^3. It will be dumped along mining lease boundary as earth bund and it will be utilized for green belt development within the lease area. No chemical or toxic elements will be used during mining activity. So the health of soil in and around the quarry will not be affected.

b) Thiru.E.Jagadeesan -1.56.5Ha

For the plan period 2023-2028, the generation of top soil is estimated as 1131m^3. It will be dumped along mining lease boundary as earth bund and it will be utilized for green belt development within the lease area. No chemical or toxic elements will be used during mining activity. So the health of soil in and around the quarry will not be affected.

4.7.2 Mitigation measures for Soil Conservation

- Low height retaining wall will be provided along the toe of dumps to prevent the soil along the slopes being carried away by the rain water.
- Top soil should not be mixed with other waste or reject materials. It should be conserved by judicious utilization in the mine premises.

4.8 Waste Dump Management

4.8.1 Anticipated Impact

a) Tvl. Everking Granites -3.19.5 Ha

The proposed rate of production of Grey granite for five years is about 30124m^3 at the rate of 30% recovery up to permissible depth. The 70% reject of 70,289 m^3 shall be dumped over existing dump in South west side and on virgin barren land in east side as per approved scheme of mining. During monsoon seasons, the runoff from the dump will carry silts and small stones and it affect the land use around the project site which means it may affect the carrying capacity of stream, water holding capacity of lakes and affect nearest agricultural lands.

b) Thiru.E.Jagadeesan -1.56.5Ha

The proposed rate of production of Grey granite for five years is about 15,529m^3 at the rate of 30% recovery up to permissible depth. The 70% reject of 36,235m^3 shall

be dumped in virgin barren land in north, northeast and east side as per approved scheme of mining. All rejects and waste materials dumped will be backfilled at the end of mine life.

4.8.2 Mitigation measures

The mineral rejects and waste shall be dumped systematically with proper repose angle and stabilization as given below,

- The rejects\ waste dump shall be properly terraced in to 1.5m benches with proper repose angle and then the top soil shall be spread over the dumps and slope to make them humus for some time, after the soil suitable for water retention, trees will be planted at the top, slope and toe of the stabilized dumps to form vegetation.
- Gradation of dump shall be done automatically as coarser materials go to the bottom and finer at the top and therefore drain of rain water flow freely to the bottom without endangering the stability of dump,
- More over the dump height shall be less than 6m with natural repose angle and hence dump will be more stable.
- Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse.
- The runoff from the slopes of dump will be collected by garland drainage around the dump and it will be taken up to settling tank to settle down the suspended solids. After that the water will be used for greenbelt development and dust suppression purposes.

4.9 Municipal solid waste management

The human waste shall be treated by temporarily built septic tank and soak pit within the mine lease area. The municipal solid waste generated by workers will be properly segregated into biodegradable and non-biodegradable and disposed through garbage collector of particular location in Krishnagiri District.

4.10 Ecology and Biodiversity

4.10.1 Impact on Ecology and Biodiversity

The details and list of flora, fauna, reserved forest and cropping pattern within the 10km radius of study area is given in chapter 3. The impact on ecology and biodiversity due to the proposed mining activity has to be studied in detail to prepare the management plan to safeguard the flora, fauna, forest products and aquatic living organism etc.

A detailed anticipated impact of Ecology and Biodiversity due to mining activity is described in Table 4.28 & 4.29.

Table 4.28: Ecological Impact Assessments and Its Mitigations -Part 1

Sl. No	Issues	Assessment	Mitigations
1	Proximity to national park/ wildlife sanctuary / reserve forest / mangroves / coastline/estuary/sea	Forest within 10km radius: 1. Thogarapalli R.F. -1.7km – S 2. Bargur R.F – 6.9km – NE 3. Varatanapalli – 8.0km – NW 4. Nandibanda R.F – 8.2km – NE 5. Neralakotta R.F – 10.4km - N The proposed project is not a forest land. So, the proposed project does not attract Forest Conservation Act, 1980. There is no wild life sanctuaries found around 10km radius. Cauvery Wildlife Sanctuary – 41.2km – W Quarry area is 172km (SE) away from the Bay of Bengal. Hence the project does not attract Wildlife Protection Act, 1972 and C.R.Z. Notification, 1991.	-
2	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. The fauna in the buffer zone may be affected by noise generated due to mining activity.	The noise due to the mining activity will be controlled by developing green belt all along the lease boundary, regular maintenance of tippers, excavators, transporting the empty tipper within the speed of 20 km/hr.
3	Located near an area populated by rare or endangered species	No endangered, critically endangered, vulnerable species sighted in core mining lease area and also in buffer zone.	Nil
4	Proposed project restricts	No waterholes are in core zone.	Nil

	access to waterholes for wildlife	No Wild life sanctuary within 10km radius.	
5	Proposed mining project impact surface water quality that also provide water to wildlife	'NO' scheduled or threatened wildlife animal sighted regularly in core area.	Nil
6	Proposed mining project increase siltation that would affect nearby Biodiversity area.	Yes, the runoff from the dump which carries the solid materials may get silt in the adjacent agricultural land and affect the cropping pattern.	Garland drainage will be excavated around the dump and quarry area to collect the runoff during monsoon season. The water collected in the garland drainage will be diverted to settling tank or mine pits to settle down the silts and other suspended solids. This will prevent the siltation in the adjacent area. The drainage will be desilted after every precipitation.
7	Risk of fall/slip or cause death to wild animals due to project activities	'NO'. No Wild life sanctuary within 10km radius.	Nil
8	The project release effluents into a water body that also supplies water to a wildlife	As the proposed project is mining activity there will be no possibilities of release of effluents. Also no Wild life sanctuary located within 10km radius.	Nil
9	Mining project effect the forest based livelihood/ any specific forest production which local livelihood depended	No, the proposed project will not disturb forest located around the project site.	-
10	Project likely to affect migration routes	No migration route observed during monitoring period.	Nil
11	Project likely to affect flora of an area, which have medicinal value	No flora having medicinal value found within the lease area	The flora such as Neem and pirandai having medicinal value found in the study area of buffer zone. Those floras will not be affected by the proposed mining activity at it will be carried out only within the lease

			area.
12	Forestland is to be diverted, has carbon high sequestration	'NO'. There is no forest land within the lease area.	Nil
13	The project likely to affect wetlands, fish breeding grounds, marine ecology	**'**NO'. No wetland, fish breeding grounds, marine ecology present in core mining area.	Nil

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

Table 4.29: Ecological Impact Assessments – Part 2

Ecological Criteria	Identified Impacts	Ecological significance of Impact	Magnitude	Duration /Timing/ Frequency	Reversibility	Mitigation	Cumulative Impact
Zone of Influence	**Project site Habitat due to Site Clearance.**	The existing granite quarries are located in Jagadevipalayam village. As it is existing quarry there are no trees or shrubs found within the quarry area. Pp has developed greenbelt around the mining lease boundary and around existing dump. During quarrying activity, PP will not cut any trees in and around the lease area.	**Low Impact**	-	**Irreversible in quarry area**	The quarried out pit will be used as water storage pond which increase agricultural activity in the buffer zone. PP will develop green belt along haul road and approach road.	**No Cumulative Impact**
Zone of Influence	**Ecological Impact Surrounding habitat due to fugitive emission**	The fugitive emission due to the mining activities such as drilling, blasting, loading and transportation on the haul road will be deposited on the flora and crop field in the buffer zone which affects growth and its productivity.	**Temporary Impact**	During the mining period	**Reversible**	The sprinkling of water over the haul road will be done. The transportation vehicles will be maintained and serviced Properly.	**No Cumulative Impact**
Accessibility	**Ecological Impact due to road construction**	No Road construction is required to assess the project site. As it is existing quarry, the approach road is already available which connect the lease area to nearest Bagimanur village Tar road.	**No Impact**		-	-	**No Impact**

Zone of Influence	**Ecological Impact on Surrounding/ Eco sensitive habitat due to waste water generated from the project activity.**	Since the proposed project is an mining activity no waste water generation is expected. Human waste and municipal solid waste will be generated due to the workers.	**No Impact**	-	-	Human waste will be properly treated by septic tank and soak pit in the lease area and dispose periodically. The municipal solid waste generated by workers will be properly segregated into biodegradable and non-biodegradable and disposed through garbage collector of Krishnagiri Municipality.	**No Impact**
Zone of Influence	**Ecological Impact on Surrounding / Eco sensitive habitat due to Noise generated from the project activity.**	During drilling or blasting, transportation of granite, noise will be generated and it may slightly affect the movement of fauna around the lease area.	**Temporary impact**	Only during drilling, blasting operation and transportation period.	No	Avenue trees will be planted along the lease area to minimize the noise level. Milli second detonators shall be used preferably 25–50ms per delay to control vibrations. Regular maintenance of vehicles and driving the empty tipper within 20km/hr speed also control the noise generations.	**No Impact**

Zone of Influence	**Ecological Impact on Surrounding/ Eco sensitive habitat due to Transportation**	There is no eco sensitive habitat found around the lease area. The fugitive emission from drilling, blasting, vehicle movement will form layer in leaves thus reducing the gaseous exchange process. This ultimately affects the growth of plants. The animals like dog, cattle may get accident due to truck movement.	**Temporary impact**	During Operation Phase	No	The truck driver will be advised to drive the vehicle within 20km/hr inside the lease area and 40km/hr outside the lease area. The truck will be covered with tarpaulin. The sprinkling of water over the haul road will be done.	**No Impact**
Zone of Influence	**Ecological Impact on Natural ecosystem, the soil micro flora and fauna and soil seed banks.**	The nearest forest is Thogarapalli R.F. located at the distance of 1.7km in south direction. Mattur stream is located near to project site at the distance of 780m in southwest direction. The proposed mining project will be carried out strictly within the lease area and it will not affect the nearest water bodies and reserve forest.	**No Impact**	Nil	--	Garland drainage will be excavated around the dump and quarry area to collect the runoff during monsoon season. The water collected in the garland drainage will be diverted to settling tank or mine pits to settle down the silts and other suspended solids. This will prevent the siltation in the adjacent water bodies or any other land use.	**No Impact**
Zone of Influence	**Fish habitats and the Food web/food chain in the water body and Reservoir**	No major water body or reservoir is situated within 5km radius of the project site.	**No Impact**	Nil	--	--	**No Impact**

Table 4.30: Afforestation Plan of the Tvl. Everking Granites (3.19.5 Ha)

Year	Place	Type of Trees	Number	Spacing	Rate of survival
2023-24	Lease Boundary	Neem, Teak, Eucalyptus and other regional trees	30	5m X 5m	80%
2024-25	Lease Boundary	Neem, Teak, Eucalyptus and other regional trees	30	5m X 5m	80%
2025-26	Lease Boundary	Neem, Teak, Eucalyptus and other regional trees	30	5m X 5m	80%
2026-27	Lease Boundary	Neem, Teak, Eucalyptus and other regional trees	30	5m X 5m	80%
2027-28	Lease Boundary	Neem, Teak, Eucalyptus and other regional trees	30	5m X 5m	80%

Table 4.31: Afforestation Plan of the Thiru.E.Jagadeesan (1.56.5 Ha)

Year	Place	Type of Trees	Number	Spacing	Rate of survival
2023-24	Lease Boundary	Neem, Teak, Eucalyptus and other regional trees	30	5m X 5m	80%
2024-25	Lease Boundary	Neem, Teak, Eucalyptus and other regional trees	30	5m X 5m	80%
2025-26	Lease Boundary	Neem, Teak, Eucalyptus and other regional trees	30	5m X 5m	80%
2026-27	Lease Boundary	Neem, Teak, Eucalyptus and other regional trees	30	5m X 5m	80%
2027-28	Lease Boundary	Neem, Teak, Eucalyptus and other regional trees	30	5m X 5m	80%

4.11 Socio Economic

4.11.1 Anticipated Impact

This project will generate direct and indirect employment for more than 100 persons. Preference will be given to the local population for employment in all categories including semi-skilled and unskilled. The villages and their inhabitants in the buffer zone will not be disturbed from their settlements due to the mining operations.

It is obvious to assume that the activities of the mining operations will improve the socio-economic levels in the study area. The anticipated impact of this project on various aspects is described in the following sections

- Impact on human settlement: Overall, due to employment generation and economic progress, there will be positive changes in the socio-economic condition of the people residing in the vicinity of the project site. The local population will have preference to get an employment. No resettlement has occurred due to mining activity. Built up land has been increased marginally.

- Impact on Population Growth: Population rate grows annually and demand of primary needs and employment will increase due to population growth. It will provide some direct and indirect employment to the people in and around the villages.

- Impact on Vegetation: No decline in agricultural land. It has been increased over a period of time by utilizing the water stored in the working pits. No deforestation will be happened.

Therefore due to mining, per capita income of local people will be improved. The local people have been provided with either direct employments or indirect employment such as business, contract works and development work like roads, etc. and other welfare amenities such as Sanitary facilities, Solar Lighting to Govt school, Health Care to the villages in buffer zone, Maintenance of village road or Providing funds to local body or Prime minister's fund on Socio economic Development and relief measures. The job/ business opportunities will improve the economic condition of the persons. They are in a position to utilize this money for purchase of tractors, trucks, etc. which may be put into use for business purposes. Many **positive impacts** can be resulted from a long-term mine unit. In this context, provision of job opportunities, business, transport and communication, laborer etc are the major ones. Thus, this unit is highly favorable to poor and landless people.

4.11.2 Mitigation Measures

- Good maintenance practices will be adopted for plant machinery and equipment, which will help to avert potential noise problems.
- Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines.
- Drilling, blasting etc at specified location will be followed with proper schedule.
- Appropriate air pollution control measure will be taken so as 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 has been provided which meet 'BIS' (Bureau of Indian Standards).

Thus, no significant impact on health and safety will be occurred due to this project.

4.12 Land Environment

4.12.1 Anticipated Impact on Land Use / Land Cover

Grey granite Quarry project will result in disturbance of the land use pattern of the mine lease area. The impact on the topography in the form of changed landscape is unavoidable during mining activities like excavation, overburden dumping, soil extraction etc. Land requirement for the project has been assessed considering functional needs. So reclamation of mined out land will be given due importance as a step for sound land resource management. There is no release of toxic elements into the ground. No adverse impact is anticipated on land use of buffer zone associated due to the mining activity, as all the activities will be confined within the project site. The mining operations will impact the land usage and land aesthetics of quarry lease area.

The land use analyses show that the mango plantation was done around the mining lease area of Tvl.Everking Granites and Thiru.E.Jagadeesan. The rate of plantation increases over a period of time due to quarry activity. At the end of the project, the quarried pit will be act as water storage pond. The stored water will be used for developing mango plantation around the mining lease area. It will improve the livelihood of village people. The evaporation rate of the water in the pit is given detail in the report.

4.12.2 Mitigation measures

- The restoration of the degraded land would cover backfilling and terracing with the overburden / wastes and surfacing the same with top soil.
- Provision of Garland drainage around the dumps
- Fast growing trees and other native shrubs would be planted to stabilize the reclaimed land
- Appropriate measures will be taken for Green belt development.
- The rain water will be stored in the pit which will recharge the ground water as a part of rain water harvesting scheme for irrigating the nearby agricultural lands.

4.13 Occupational Health Risks

4.13.1 Anticipated Impact

Occupational health and safety hazards occur during the operational phase of mining. The problem of occupational health, in the operation and maintenance phases is primarily due to dust, which could affect breathing. Health and Safety Measures to control dust inhalation; precautions would be adopted to prevent dust generation at site and dispersing in the environment. Long–term exposure to silica dust may cause silicosis. Workers are likely to get exposed to excessive noise levels during mining activities. Occupational Safety hazards related to blasting activities may result in accidental explosions, if not properly mitigated.

4.13.2 Anticipated occupational and safety hazards

- Health Impact due to Physical activity, Extremes of age, poor physical condition, fatigue, Cardiovascular disease, Skin disorders
- Noise
- Burns and shocks due to electricity
- Respiratory hazards due to Dust exposure
- Physical hazards
- Explosives
- Fire

4.13.3 Anticipated health impacts on people in nearby villages

The mining activity not only causes health hazards to quarry workers but also affect the health of nearby village people. The fugitive emission during heavy wind period travel along the predominant wind direction and people in village located along predominant wind direction gets affected. The chances of changing water quality in villages due to mining activities lead to causes various diseases in the nearby village people.

4.13.4 Mitigation measures

For the safety of workers at site, the following mitigation measures are proposed

- Excavators, dumpers, drills other automated equipments will be enclosed
- Use of personal breathing protection will be made compulsory
- Spraying with water on all working faces & haul roads, by water–sprinkler
- Regular health monitoring of workers once in 6months for silicosis

- Random health check up village people around the lease area for identify diseases if any due to mining activity
- No employee will be exposed to a noise level greater than 75 dB(A) for a duration of more than 8 hours per day without hearing protection
- Ear muffs provided will be capable of reducing sound levels at the ear to at least 75 dB(A).
- During mining operations, all the statutory provisions of the Indian Electricity Rules 1956, and Indian Standards for installation and maintenance of electrical equipment etc. will be observed.
- Care will be taken to evacuate the mining area completely at the time of blasting operations.
- A blasting SIREN will be used at the time of blasting for audio signal
- Before Blasting and after blasting, red and green flags will be displayed as visual signals.
- Warning notice boards indicating the time of blasting and NOT TO TRESSPASS are displayed prominently.
- First-aid facilities as per provisions under Rule (44) of Mines Rules 1955
- Initial and Periodical medical examination shall be conducted for the employees under Rule 29B & 45 (A).
- Insurance will be taken in the name of the labourers working in the mines.

4.14 Agricultural Environment

4.14.1 General

The general impacts on agricultural lands will be dust pollution, as volume of dust is discharged into the air during the process of quarrying. Dust gets deposited on the leaves of plants, flowers and soil. This affects the photosynthetic and fruiting ability of the crops.

Silt from the excavation, screening process and reject during monsoon season gets washed and chokes the agricultural fields, rendering them useless for the growth of crops. Due to blasting, fly rocks may fall on agricultural fields making it difficult for the farmer to cultivate.

There is a need for dust control on haul road movements. Vehicles emit fugitive gases during transportation of materials. Those gases enter the plants through the stomata pores; it destructs chlorophyll and affects photosynthesis leading to stunted growth or death of crops.

The pumping of water from the ground for the mining activity will reduce the availability of water for the agricultural purposes.

4.14.2 Anticipated Impacts of Proposed project on Agriculture, Horticulture and livestock

The land use analyst sighted that there is mango and coconut plantation adjacent to the mining lease area based on Google earth map and field visit. Other than mango and coconut plantation, there are no any other crops seen within 1km radius of lease boundary.

As the villages are located around the project site, the people in the villages are farming animals like goat, cow, and sheep for their livelihood. The above mentioned impact may be observed on the nearest agricultural farm during the quarrying activity. So the following mitigation measures will be suggested to protect the nearest farm. The requirement of water for the proposed project will be taken from bottom of the existing pit and water vendors. The ground water for the proposed project site will not be extracted at the same place and the proposed mining activity is 4-10m above ground water table. So the proposed mining activity does affect the ground water resource.

4.14.3 Mitigation Measures

- Spraying of water on the haul roads will be done to suppress the dust in the source itself. Interval of sprinkling depends on the environmental factors such as temperature, rainfall and humidity of the proposed site.
- The trees having tolerance to different air pollutants will be planted along the boundary to prevent the escape of dust to the surroundings.
- Garland drainage will be provided around the lease area to prevent the leach of silt into the farm.
- Regular check and proper maintenance of Vehicles will be carried out to minimize the emission of pollutants.
- Adequate Blast shield or blast mats will be provided wherever necessary for fly rock protection during blasting, thus to prevent the accident on the nearest farms.
- During monsoon season the dust deposited on the surface of plant body is washed out naturally.
- Making two bore holes which have direct conduit with the water table in the lease area will help ground water recharge during monsoon seasons. It helps the agricultural activity in the buffer area of project site.

CHAPTER – 5: ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

Consideration of alternatives to a project proposal is a requirement of the 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 environment friendly and cost effective options. Analysis of alternatives should be similar to the content of the approved mining plan.

The selection of the site is based on the following considerations which are feasible in terms of location, deposit characteristics, availability of reserves, percentage recovery, road facilities, labor availability, requirement of health and safety and environmental concerns, production scheduling, scope of mechanization/automation, land reclamation, and operating and capital cost estimates.

Krishnagiri District is comprised of Archaen peninsular gneisses such as Charnockites, Hornblende gneisses, Biotite gneisses, and dolerites migmatites are intruded by younger formations like pegmatite and quartz veins. The dolerite dyke is intruded into the pre-existing country rock namely Biotitic Gneisses and Schist and trending 1-2kms from West to East direction and dipping almost vertical. The width of dyke is about 30m.

The order of superposition of geological sequence are given as under,

	Description		**Age**
↑	Top soil – Morum (2m Thick)	-	Recent age
	Dolerite dyke	-	Recent age
	Peninsular gneisses	-	Archaen age
	Biotite gneisses	-	Archaen complex

The Biotite gneisses are oldest rock into which the younger dolerite dykes intruded later.

The quarry site is dependent on the geology and grey granite mineral deposition of the area. This project is mineral and site specific, hence no alternative site or technology is considered for this project.

CHAPTER – 6: ENVIRONMENTAL MONITORING PROGRAMME

Environmental Monitoring program is mandatory to check the impact of the mining activity in the core and buffer zone. Hence regular monitoring of various environmental parameters helps in maintaining sound operating practices of the mining in line with mining and environmental regulations. Environmental Monitoring program will be conducted for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by SEIAA & Consent to Operate issued by TNPCB.

6.1 Measurement methodologies

The following instruments will be used for environment monitoring for various environmental parameters.

Table No: 6.1 Instruments used for Monitoring

S. No	Instruments	Purpose of Monitoring
1	Respirable Dust Sampler	Air Pollution
2	Fine Particulate Sampler	Air Pollution
3	Sound level meter	Noise level
4	Digital Seismograph	Vibration monitoring
5	Water level indicator	Water level
6	Geophysical Instruments (DDR3)	Water table
7	Camera, Binocular & Lens	Flora, Fauna
8	GPS & DGPS	For fixing the coordinates of sampling location
9.	Electronic Total station	Reduced level & topography monitoring

In addition to the above, Primary data on land use, socio economics will be collected by visiting the field and secondary data will be collected from Government Department and other sources.

6.2 Monitoring Schedule and Frequency

The sampling and analysis of the environmental attributes will be as per the guidelines of Central Pollution Control Board (CPCB). Monitoring program will be followed till the mining operation ceases as per the schedule below.

Table 6.2: Monitoring Schedule

S. No.	Environment Attributes	Location	Monitoring		Remarks
			Duration	Frequency	
1	Meteorology and Air Quality	Continuous monitoring weather station in core zone/ nearest IMD station	24 hours	Monthly Once	Wind speed, direction, Temperature, Relative humidity and Rainfall.
2	Air Pollution Monitoring – $PM_{2.5}$, PM_{10}, SO_2 and NO_x	5 locations (One station in the core zone and at least one in nearby residential, area, one in the upwind, one station on the downwind direction and one in cross wind direction)	8 hours	Once in six months	Fine Dust Sampler and Respirable Dust Sampler
3	Water Pollution Monitoring	Mine effluents, Set of grab samples during pre and post monsoon for ground and surface water in the vicinity.	–	Once in six months	Phyiso–chemical, microbiological characteristics
4	Hydrogeology	Water level in open wells in buffer zone around 1km at specific wells	-	Once in six months	Water level monitoring devices may be used.
5	Noise	Mine Boundary, high noise generating areas within the lease and at the nearest residential area	24 hours	Monthly Once	Sound level meter
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting operation	Digital Seismograph
7	Soil	Core Zone and Buffer zone (Grab samples)	–	Once in six months	Physical and Chemical characteristics

6.3 Data Analysis

Data analysis will be done by MoEFCC/NABL approved laboratory as per CPCB guidelines & compliance reports shall be submitted to concerned authority (specified in Environment Clearance Letter issued by SEIAA, Tamil Nadu and Consent issued by TNPCB, Krishnagiri on regular basis.

6.4 Emergency procedures

The mines manager monitors the emergencies that may occur in opencast mining operations and prepares an emergency plan to deal with emergency situations during the operation of the mine. Preparation of a preventive maintenance schedule program based on recommendations given and maintenance schedules for all equipments and instruments as per recommendations of the manufacturers user manuals.

6.5 Detailed Budget

Detailed budgetary provisions for monitoring program are detailed in the following Table No 6.3.

Table No 6.3 Environment monitoring budget for Tvl. Everking Granites, an extent of 3.19.5Ha, Jagadevipalayam Village, Bargur Taluk, Krishnagiri District and Tamil Nadu

S. No	Environmental Monitoring Program	No. of samples per year	Cost per sample	Cost per year
1	Ambient Air Quality monitoring	5	Rs 4000	Rs. 20,000
2	Water quality	2	Rs 2500	Rs 5,000
3	Soil quality	2	Rs 2500	Rs 5,000
4	Noise monitoring	10	Rs 1000	Rs 10,000
5	Hydro geology	5	Rs 1000	Rs 5,000
	Total			**Rs 45,000**

Table No 6.4 Environment monitoring budget for Thiru.E.Jagadeesan, an extent of 1.56.5Ha, Jagadevipalayam Village, Bargur Taluk, Krishnagiri District and Tamil Nadu

S. No	Environmental Monitoring Program	No. of samples per year	Cost per sample	Cost per year
1	Ambient Air Quality monitoring	5	Rs 4000	Rs. 20,000
2	Water quality	2	Rs 2500	Rs 5,000
3	Soil quality	2	Rs 2500	Rs 5,000
4	Noise monitoring	10	Rs 1000	Rs 10,000
5	Hydro geology	5	Rs 1000	Rs 5,000
	Total			**Rs 45,000**

CHAPTER – 7: ADDITIONAL STUDIES

7.1. Public Consultation

The Draft EIA report has been prepared for conducting public hearing only.

7.2 Risk assessment and Disaster Management Plan

Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening. The mining operation is carried out under the management control and direction of a qualified mines manager. The DGMS have been issuing a number of standing orders, model standing orders and circulars to be followed by the mine management in case of disaster, if any.

To overcome such risks, help/aid would be sought from emergency services providers like Police station, fire station, Hospital, Ambulance services in the vicinity of the mine site. Their telephone numbers and communication facilities are to be provided and displayed on the board at the mine office as well as mine site. Responsibility of coordinating rescue activities is entrusted to quarry-in- charge at the quarry site in addition to quarry-in-charge is also looking after statutory obligatory under Mines Act,1952. Name and Address of Contact Person coordinating in case of Eventuality is stated below:

Name and Address of the Proponent	**M/s. Tvl. EVERKING GRANITES** The Managing Partner: S.S.Jameeluddin No:1/161, T.N.H.B Phase-II, Krishnagiri, Tamil Nadu-635002, E.mail: jameel.rkf@gmail.com Mob: +919994433007, +919443632513
	Thiru.E.Jagadeesan S/o. Egananthan, No.5/50,Thiruvalluvar Nagar, Krishnagiri District, Tamil Nadu. E.mail: jameel.jk@gmail.com Mob: +9994433007.

However, the following natural/industrial hazards may occur during normal operations.

i. Operational Phase,
ii. Inundation of mine pit due to flood/excessive rains,
iii. Accident due to transport & other equipments,
iv. Safety and Environmental aspects.

Table 7.1 Risk Assessment and Disaster Management Plan

S.No	Hazards	Mitigation measures
1	Surface Fire	➢ Fire Extinguishers ➢ Sand Buckets
2	Explosives/Blasting	➢ The applicant is directly purchasing explosives from an authorized dealer and they are blasting with help of certified blaster. Agreement is made with License holder in Form-22 for store, use and sale of explosives. ➢ Only mild blasting will be carried out to affect a perfect pre-determined crack to release the block from the parent rock.
3	Flooding of Rain water	➢ Escape Routes will be provided to prevent inundation of storm water ➢ Garland drains will be provided at the toe of dump
4	Radioactive hazard	➢ Not Anticipated
5	Failure of Mine Benches and Pit Slope	➢ Ultimate or over all pit slope shall be 45° and each bench height shall be 6m height equal to the boom height of excavator and vertical. ➢ During working normally 3-6m will be maintained as per the plan.
6	Failure of Waste Dumps	➢ Stabilization of dump with top soil and tree plantation shall make the dump more stable. ➢ Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse.
7	Dust	➢ Periodical wetting of land by spraying $MgCl_2$ solutions. ➢ Regular water sprinkling on haulage roads ➢ Provision of Dust mask to workers ➢ Green Belt shall be carried out within the mine premises by planting trees, to improve the aesthetics of the area and also to reduce the pollution outside the activity area

8	Noise	➢ Rotation of workers to minimize exposure time of noise ➢ The equipments and machineries shall be maintained properly ➢ Provision of earmuffs to workers
9	Transportation	➢ Convex mirrors should be kept at all corners ➢ All vehicles should be fitted with reverse horn with one spotter at every tipping point ➢ Loading according to the vehicle capacity ➢ Regular checking of brakes to avoid failures ➢ Periodical maintenance of vehicles
10	General measures	➢ No entry for any unauthorized persons ➢ S1 type fencing as per DGMS circulars ➢ Quarrying as per Approved Plans only ➢ Provision of Personal Protective Equipments ➢ In case of any closure of mine the compensation under Industrial Dispute Act will be paid as per law

7.2.1 Care and Maintenance during temporary discontinuance

Watch and ward are provided permanently in the Mine premises to monitor the Mine openings to prevent inadvertent entry. Top soil bund is made partly and Stone fencing is proposed all around lease boundary to safe guard the mine and the adjacent livings. Temporary discontinuance will be minimal as there is good demand for this material in tiles industries.

7.2.2 Economic repercussions of closure of mine and manpower retrenchments

7.2.2.1 Number of local residents employed in the mine, status of continuation of family occupation and scope of joining occupation back

Total of 45 Persons get employment from the two existing quarries of Tvl. Everking Granites (3.19.5 Ha) and Thiru.E.Jagadeesan (1.56.5 Ha). Most of labors are Agriculturist. In case of closure of mine, they may continue their own work or join in the neighbor mines as there are few granite quarries around this area within 500m. Since the quarry is deposited with high resources immediate retrenchment may not arise.

7.2.2.2 Compensation given or to be given to the employees connecting with sustenance of himself and their family members

In case of any closure of mine the compensation under Industrial Dispute Act will be paid as per law. All workers shall get retrenchment benefits as per labour laws under enforcement.

7.2.2.3 Satellite occupations connected to the mining industry – number of persons engaged therein – continuance of such business after mine closes

The quarrying activity shall lead to development of several ancillary units and business, which are explained below:

i. Other than mine employment, workshops, spare parts, hotels, tea shop and related several self-employment opportunities.
ii. Several shops and service providers shall grow in the public adjacent to mines.
iii. Schools and city development shall also be possible owing to the fact of economic growth in the village.

7.2.2.4 Continued engagement of employees in the rehabilitate status of mining lease area and any other remnant activities.

In the event of closure of mine, the mine worker shall get alternate work or business like agriculture etc. No serious repercussions envisaged in the event of cessation of mining activity, as they will be provided employment in other mines belong to the company.

7.2.2.5 Envisaged repercussions on the expectation of the society around due to closure of mine

Persons on roll at the time of closure will get benefit as per State Govt. guidelines as applicable at the time of retrenchment

7.2.3 Time Scheduling for abandonment

The following works are scheduled before abandoning the mine,

i. Parapet wall of 2m height will be constructed around the pit,
ii. Planting and monitoring of Afforestation program.

There is no proposal for closure of mine for the next 5 years. The parapet and plantations will be done during operation of mine. In case of any abandonment the following time is required,

Activities	Days for schedule
Time schedule for fencing	6 months
Time schedule for reclamation of mined out area	1 year

7.3 Social Impact Assessment, R&R Action Plans

The Grey Granite quarry project of Tvl. Everking Granites and Thiru.E.Jagadeesan does not involve any kind of displacement of the population since the mining will be concentrated only in the mining area only. Not much disturbance in respect of fauna, flora and human settlement of the villages. The impact of mining activity on the population will be insignificant. Hence, Rehabilitation of settlements is not anticipated under this project as it will not be required. Thus R&R Action Plans not proposed.

The project proponent will help in uplifting the poor section of the society as part of CSR activity by undertaking social welfare programs. The Project proponent contributes 2.5% of profit towards CSR activities. This project will have a positive impact on the socio economic as it will provide considerable employment to the families in the nearby villages. Improved health care facilities are expected to come–up in the area for catering to the health needs of the miners. The impact of mining on the civic amenities will be substantial after the commencement of mining activities. The local people who are currently depending on forest and agriculture will have new avenue from the mine.

7.4 Detail study of Rainwater harvesting

7.4.1 Rain water harvesting after the completion of proposed project of Tvl. Everking Granites Grey Granite Quarry

I. Total Pit Area = 8850m^2
II. Annual rainfall of the area = 0.75 m
III. Total rainwater available to store in pit area = 6637 m^3
IV. Total volume of quarried pit = 2,65,500 m^3

Since the rainwater directly getting stored in the quarried pit, the runoff will not take place. The Quarried Pit will be act as **Artificial Ground Water Recharge Pond.** After the rainwater getting stored in quarried pit, the water slowly infiltrates into the ground and reaches the ground water table. This will greatly increase the ground water table around the lease area.

By electrical resistivity survey it is found that there is massive rock formation from 30m bgl. So the infiltration rate of rain water is very less. If the rain water stored in pit for long period the evaporation loss will take place.

Meyer's Formula (1915) is used to find the loss of water in pit due to natural evaporation process.

Meyer's Formula (1915)

$$E_L = K_M (e_w - e_a) (1 + u9/16)$$

Where

- E_L = Evaporation Rate (mm/day)
- e_w = the saturation vapor pressure at the water temperature in mm of mercury
- e_a= the actual vapor pressure in the air in mm of mercury
- u_9 = monthly mean wind velocity in km/h at about 9 m above ground
- K_M = coefficient accounting for various other factors with a value of 0.36for large deep and 0.50 for small shallow waters.

Here,

e_w = 26.75 mm of Hg (considered average temperature, 27^oC(Summer Season) in Krishnagiri district)
e_a= 0.65 x 26.75 = 17.4 mm of Hg.
u_1 = 7.92 km/hr
u_9= 10.84 km/hr

Substitute the above parameters in Meyer's equation,

E_L=0.36(26.75-17.4) (1+ 10.84/16)

E_L = 5.6 mm/day

Evaporated Volume per day = 8850 x 0.0056 = 50m^3/day or 50 KLD

The total quantity of rain water to be stored in quarried pit is 6637m^3. The evaporation rate of water per day is 50 m^3 based on the average temperature during May month in Krishnagiri district. It takes nearly 4 to 6 months for the complete evaporation of water. Before that the stored water will be used to irrigate the crop around the quarry area.

Other benefits are that the water will be used for the domestic purposes after the water properly treated by Sedimentation-Filtration processes. A higher quantity of about 20 liters **per capita per** day should be assured to take care of basic hygiene needs and basic food hygiene.

Thereby this existing quarry benefits the daily needs of water to so many families around the quarry area for every year. This is very important **positive impact** of the proposed Grey Granite quarry of **Tvl. Everking Granites**.

7.4.2 Rain water harvesting after the completion of proposed project of Thiru.E.Jagadeesan Grey Granite Quarry

I. Total Pit Area = 5700m^2
II. Annual rainfall of the area = 0.75 m
III. Total rainwater available to store in pit area = 4275m^3
IV. Total volume of quarried pit = 2,05,200m^3

Since the rainwater directly getting stored in the quarried pit, the runoff will not take place. The Quarried Pit will be act as **Artificial Ground Water Recharge Pond.** After the rainwater getting stored in quarried pit, the water slowly infiltrates into the ground and reaches the ground water table. This will greatly increase the ground water table around the lease area.

By electrical resistivity survey it is found that there is massive rock formation at from 36m bgl. So the infiltration rate of rain water is very less. If the rain water stored in pit for long period the evaporation loss will take place.

Meyer's Formula (1915) is used to find the loss of water in pit due to natural evaporation process.

Meyer's Formula (1915)

$$E_L = K_M (e_w - e_a) (1 + u9/16)$$

Where

- E_L = Evaporation Rate (mm/day)
- e_w = the saturation vapor pressure at the water temperature in mm of mercury
- e_a= the actual vapor pressure in the air in mm of mercury
- u_9 = monthly mean wind velocity in km/h at about 9 m above ground
- K_M = coefficient accounting for various other factors with a value of 0.36for large deep and 0.50 for small shallow waters.

Here,

e_w = 26.75 mm of Hg (considered average temperature, 27^oC(Summer Season) in Krishnagiri district)
e_a= 0.65 x 26.75 = 17.4 mm of Hg.
u_1 = 7.92 km/hr
u_9= 10.84 km/hr

Substitute the above parameters in Meyer's equation,

E_L=0.36(26.75-17.4) (1+ 10.84/16)

E_L = 5.6 mm/day

Evaporated Volume per day = 5700 x 0.0056 = 32m^3/day or 32 KLD

The total quantity of rain water to be stored in quarried pit is 4275m^3. The evaporation rate of water per day is 32 m^3 based on the average temperature during May month in Krishnagiri district. It takes nearly 4 to 6 months for the complete evaporation of water. Before that the stored water will be used to irrigate the crop around the quarry area.

Other benefits are that the water will be used for the domestic purposes after the water properly treated by Sedimentation-Filtration processes. A higher quantity of about 20 liters **per capita per** day should be assured to take care of basic hygiene needs and basic food hygiene.

Thereby this existing quarry benefits the daily needs of water to so many families around the quarry area for every year. This is very important **positive impact** of the proposed Grey Granite quarry of Thiru.E.Jagadeesan.

7.5 Plastic/Micro plastic waste Management Plan

This is Grey Granite quarry. So the project does not need any plastic related material for quarry operations. The plastic materials will be used by the employee and labours in the form of carry bags, water bottles, etc. To avoid such situations the employees and labours will be strictly instructed to avoid the plastic materials in the lease area. Moreover they will be advised to use cloth bags, jute bags and bring the food by Steel Tiffin box.

Water will be provided by the project proponent for both drinking and domestic purposes. So the dustbins will not be needed in the quarry. To manage the unavoidable situations, Dustbins will be placed in the quarry for both decompose and non-decompose waste separately of Municipal solid waste. The collected waste will be disposed periodically as instructed by TNPCB. The board with the instruction "**Avoid plastics"** is placed in the two sides of quarry and awareness program will be conducted to the labours monthly once.

Micro plastics are small pieces of plastics less than 5mm. As usage of plastics is totally devoid in the quarry premise, the chance of Micro plastic pollution is negligible inside the lease area.


No Plastic Bags


PLASTIC
FREE ZONE


SAY NO TO
PAPER & PLASTIC
USE
CLOTH BAGS

CHAPTER – 8: PROJECT BENEFITS

Mining activity will help in improving the socio–economic benefits in areas like employment, communication and infrastructure development etc.

8.1 Physical Infrastructure

The Grey Granite project located in Jagadevipalayam Village of Krishnagiri District has well established roads, communications and other facilities. The impact on the civic amenities will be substantial after increasing the mining capacity.

The following physical infrastructure facilities will further improve due to mine.

- Afforestation
- Road Transport facilities
- Communications
- Housing facilities
- Water supply and sanitation
- Medical, Educational and social benefits will be made available to the nearby Civilian population in addition to the workmen employed in the mine.

Under plantation program, it is suggested to develop green belt further all along the boundary of mining lease area. The species to be grown in the areas will be dust tolerant and fast growing species so that a permanent green belt is created. Apart from the green belts and aesthetic plantation for eliminating fugitive emission and noise control, all other massive plantation efforts will be executed with the assistance of experts and cooperation of the local community.

8.2. Social Infrastructure

The mining activity will create rural employment. It has been observed that local people mainly depend upon agricultural, where the income is irregular and low. The mining activity in the region will have positive impact on the social economic condition of the area by way of providing employment to the local in–habitants; wages paid to them will increase the per capita income, housing, education, medical and transportation facilities, economic status, health and agriculture by improving the life style of the people. 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. Part of the royalty is given to local bodies by the State Govt. for the welfare and development of the village, District Mineral Fund @30% of the Royalty shall be given to the Dept. of Geology and Mining, Krishnagiri District. The State Government

will also benefit directly from the mine, through increased revenue from royalties, excise duty and etc…

8.3 Employment Potential

The two quarry proponent employed about 45 persons for carrying out the mining operations of which 2 are skilled, 7 semi-skilled, 28 unskilled workers and 8 Management and supervisory staff personnel. In addition there will be indirect employment to many more people in the form of contractual jobs like construction of infrastructural facilities, transportation of Grey Granites to destinations, sanitation, supply of goods and services to the mine and other community services, etc…The local population will have preference to get an employment. The economic status of the local people will be enhanced due to mining project.

8.4 Other tangible benefits

8.4.1 Corporate Social Responsibility

Corporate Social Responsibility (CSR) refers to voluntary actions undertaken by the project proponent either to improve the living conditions (economic, social, environmental) of local communities or to reduce the negative impacts of mining activity. By definition, voluntary actions are those that go beyond legal obligations, contracts, and license agreements.

CSR programs usually invest in infrastructure (potable water, electricity, schools, roads, hospitals, hospital equipment, drainage repairs, etc.), building social capital (providing high-school and university education, providing information on HIV prevention, workshops on gender issues, information on family planning, improving hygiene, etc.), and building human capital (training local people to be employed by the mining enterprise or to provide outsourced services, promote and provide skills on micro business, aquaculture, crop cultivation, animal rearing, textile production, etc.)

8.4.2 CSR activities

The following activities which may be included by companies in their Corporate Social Responsibility Policies are notified as CSR activities under Schedule VII ((See section 135) of the Companies Act 2013:

i. eradicating extreme hunger and poverty;
ii. promotion of education;
iii. promoting gender equality and empowering women;

iv. reducing child mortality and improving maternal health;
v. combating human immunodeficiency virus, acquired immune deficiency syndrome, malaria and other diseases;
vi. ensuring environmental sustainability;
vii. employment enhancing vocational skills;
viii. social business projects;
ix. contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government or the State Governments for socio-economic development and relief and funds for the welfare of the Scheduled Castes, the Scheduled Tribes, other backward classes, minorities and women; and
x. Such other matters as may be prescribed.

The Board of every company referred to in sub-section (*1*), shall ensure that the company spends, in every financial year, at least 2% of the average net profits of the company made during the three immediately preceding financial years, in pursuance ofits Corporate Social Responsibility Policy. Provided that the company shall give preference to local area and areas around it, where it operates for spending the amount earmarked for Corporate Social Responsibility activities. Provided further that if the company fails to spend such amount, the Board shallreport under clause (*o*) of sub-section (*3*) of section 134, specify the reasons for not spending the amount.

Explanation: For the purposes of this section "average net profit" shall be calculated in accordance with the provisions of section 198.

8.4.2.1 CSR Cost Estimation for proposed project of Tvl. Everking Granites (an Extent of 3.19.5Ha), Grey Granite Quarry.

CSR activities will be taken up in the nearby villages 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.

i)	Sale value	=	Rs 18000 per MT
ii)	Production cost	=	Rs 15000 per MT
iii)	Profit	=	Rs 3000 per MT
iv)	Production	=	15062 MT/year
v)	Hence, Total Profit	=	15062 x 3000/MT
		=	Rs. 4,51,86,000/-
vi)	CSR @ 2.5 % Profit	=	Rs. 4,51,86,000x 2.5%
		=	Rs 11.3 Lakhs/Year

(As per the Companies Act, 2013 and CSR Rules, 2014)

8.4.2.2 CSR Cost Estimation for proposed project of Thiru.E.Jagadeesan (an Extent of 1.56.5 Ha), Grey Granite Quarry.

CSR activities will be taken up in the nearby villages 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.

i.	Sale value	=	Rs 18000 per MT
ii.	Production cost	=	Rs 15000 per MT
iii.	Profit	=	Rs 3000 per MT
iv.	Production	=	7765 MT/year
v.	Hence, Total Profit	=	7765 x 3000/MT
		=	Rs. 2,32,95,000/-
vi.	CSR @ 2.5 % Profit	=	Rs. 2,32,95,000 x 2.5%
	i.	=	Rs 5,82,375/Year

(As per the Companies Act, 2013 and CSR Rules, 2014)

Under this programme, the project proponents will take-up following activities for social and economic development of villages through local panchayat.

- Employment to eligible persons during operational phase of the mine
- Conducting Medical Camps
- Infrastructure Development like repair of roads, renovation of ponds, rainwater harvesting schemes, etc…
- Financial grant to the existing educational institutions for development of physical infrastructures
- Training for Self Employment
- Plantation in villages and all along roads.
- Providing solar lamps to nearby schools and villages by going eco-friendly.

8.4.3 Corporate Environment Responsibility (CER) for proposed project of Tvl. Everking Granites (an Extent of 3.19.5Ha), Grey Granite Quarry.

CER Activity	Project Cost (Rs. In Lakhs)	CER Cost (Rs in Lakhs)
Developing Sanitary facilities and Library Facilities, RO Water supply system, tree plantation and environmental awareness sign Boards to Government Boys High School, Jagadevipalayam Village.	84.0	5.0
Total Cost Allocation	84.0	5.0

8.4.4 Corporate Environment Responsibility (CER) for proposed project of Thiru.E.Jagadeesan (an Extent of 1.56.5 Ha), Grey Granite Quarry.

CER Activity	Project Cost (Rs. In Lakhs)	CER Cost @ 2% of Project Cost (Rs. In Lakhs)
Developing Sanitary facilities and Library Facilities, RO Water supply system, tree plantation and environmental awareness sign Boards to Government Girls High School, Jagadevipalayam Village.	78.0	5.0
Total Cost Allocation	78.0	5.0

CHAPTER – 9: ENVIRONMENTAL COST BENEFIT ANALYSIS

9.0 PROJECT COST

After making exhaustive study, it is considered that the mining project may be implemented.

a) Tvl. Everking Granites (3.19.5 Ha), Grey Granite Quarry.

Project cost for the existing Grey Granite Quarry over an area of 3.19.5Ha falling in Village Jagadevipalayam, District Krishnagiri is Rs. 84,00,000/- and EMP Cost is Rs. 7,25,000/-

This project provides direct employment to 24 people and indirect employment to nearly 20 people. In a family 4 persons, totally 176 persons will get benefit because of the project.

b) Thiru.E.Jagadeesan (an Extent of 1.56.5 Ha), Grey Granite Quarry.

Project cost for the proposed Grey Granite Quarry over an area of 1.56.5Ha falling in Village Jagadevipalayam, District Krishnagiri is Rs. 78,00,000/- and EMP Cost is Rs. 9,50,000/-

This project provides direct employment to 21 people and indirect employment to nearly 20 people. In a family 4 persons, totally 164 persons will get benefit because of the project.

The quarrying activity will definitely benefit the people (directly as well as indirectly) as follows

- Granite is used as construction material. So Surrounding dealer and building contractor get granite easily with less transportation cost.

- The Management will ensure good production and in turn there will be good revenue to the Government of Tamil Nadu and Government of India through taxes. The industry is an asset to the nation.

- At the end of the project the pit will act as rain water harvesting tank which is useful for agricultural purpose. Thereby it will increase the survival of people around the quarry.

CHAPTER - 10: ENVIRONMENTAL MANAGEMENT PLAN

The **Environment Management Plan (EMP)** is required to ensure sustainable development in the study area. Hence it needs to be a comprehensive plan for which the industry, Government, Regulating agencies likes Pollution Control Board working in the region and more importantly the population of the area need to extend their co-operation and contribution.

It has been evaluated that the project area will not be affected significantly due to mining activity. Mitigation measures at the source level and an overall Management Plan at the site level are elicited so as to improve the surrounding environment.

Table 10.1 Environmental Management Plan			
S.No	**Parameters**	**Mining Activity**	**Mitigation measures**
1	Air Environment	Drilling	o Dust extractor or wet drilling to be followed to control dust at source of emission o Use of Sharp drill bits for drilling holes and charging the holes by using optimum charge and using time delay detonator
		Blasting	o Regular water sprinkling on blasted heaps at regular intervals will help in reducing considerable dust pollution
		Loading	o Water sprinkling be done before loading by making it moist
		Transportation	o Water sprinklers along the sides of haul road shall be fixed to control fly of dust while transporting minerals and waste o Overloading will be prevented o Trucks/Dumpers covered by tarpaulin covers
		DG Sets	o DG sets will be used only during power failure o Adequate stack height for DG sets will be provided as per CPCB norms
		General measures	o Avenue trees along roads around ML boundary shall be planted as per the norms of MoEF to control fly of dust. o Labours engaged in such dust prone areas should be provided with safety devices like ear muff, mask, and goggles as per the MMR, 1961 amendments and circulars of DGMS. o Regular health check–up of workers and nearby villagers in the impacted area should be carried out and also regular occupational health assessment of employees should be carried

			out as per the Factories Act o Ambient Air Quality Monitoring will be conducted on regular basis to assess the quality of ambient air.
2	Water Environment	Surface water	o Wastewater discharge from mine if any will be treated in settling tanks before using for dust suppression and tree plantation purposes.
		Ground water	o The mining activity will not intersect the ground water table o De silting will be carried out before and immediately after the monsoon season
		Stormwater	o Pit will be used for Storage of rainwater o Rain water will be collected in sump in the mining pit and will be allowed to store and pumped out to surface setting tank of 15 m x 10m x 3m to remove suspended solids if any. This collected water will be judiciously used for dust suppression onwards and such sites where dust likely to be generated and for developing green belt. o The proponent will collect and judicially utilize the rainwater as part of rain water harvesting
		General measures	o Regular monitoring and analyzing the quality of water
3	Noise Environment	Drilling	o Limiting time exposure of workers to excessive noise
		Blasting	o Carrying out blasting only during day time and not on cloudy days o Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent

			blow out of holes. o Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment
		Transportation	o Proper and regular maintenance of vehicles, machinery and other equipments. o The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments. o Speed of trucks entering or leaving the mine will be limited to moderate speed to prevent undue noise from empty vehicles. o Adequate silencers will be provided in all the diesel engines of vehicles. o Minimum use of horns and speed limit of 10 km/hr in the village area. o It will be ensured that all transportation vehicles carry a valid PUC Certificates
		General measures	o Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas o Provision of Quiet areas, where employees can get relief from workplace noise. o The development of green belts around the periphery of the mine to attenuate noise. o Regular medical check–up and proper training to personnel to create awareness about adverse noise level effects.
4	Vibration	Blasting	o No deep holes blasting envisaged.

			○ Small dia shot holes are used for breaking boulders. ○ Specific charge pattern has to be designed by proper trial vibration studies with varying charge ratios. ○ If the vibration still exceeds the limit a long Trench to a depth of 6m may cut in the direction of wave's movement to break longitudinal waves which travel close to surface, preferably near mine buffer zone ○ In spite of all measures periodical testing of vibration and noise using approved seismograph by DGMS has to be followed as a part of Environmental monitoring
5	Soil Environment	Topsoil	○ Humus top soil shall be preserved for reuse in afforestation and agriculture ○ Top soil should not be mixed with other waste or reject materials. It should be conserved by judicious utilization in the mine premises ○ Garland drains will be provided around the mine and dumps to arrest any soil from the mine area being carried away by the rain water. This will also avoid the soil erosion and siltation in the mining pits and maintaining the stability of the benches
6	Waste Dump	Stabilization of Dumps	○ The rejects\ waste dump shall be properly terraced in to 1.5m benches with proper repose angle and then the top soil shall be spread over the dumps and slope to make them humus for some time, after the soil suitable for water retention trees will be planted at the top, slope and toe of the stabilized dumps to form

			vegetation. o Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse o Dump should be terraced for every 5m height and stabilized
7	Plantation	Mine lease boundary and waste dump	o Provision of green belt all along the periphery of the lease area for control of dust and to attenuate noise o Stabilization of Dump with plantation o It is strongly recommended that the loss of plant in each year will be counted and again planted in subsequent plantation. o The plant should be planted taken from nursery, where the survival rate is high.
8	Land Environment		o The restoration of the degraded land would cover backfilling and terracing with the overburden / wastes and surfacing the same with top soil. o Provision of Garland drainage around the dumps o Fast growing trees and other native shrubs would be planted to stabilize the reclaimed land o Appropriate measures will be taken for Green belt development. o The rain water will be stored in the pit which will recharge the ground water as a part of rain water harvesting scheme for irrigating the nearby agricultural lands.
9	Socio Economic		o Good maintenance practices will be adopted for 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. ○ Drilling, blasting etc at specified location will be followed with proper schedule. ○ Appropriate air pollution control measure will be taken so as to minimize the environmental impact within the core zone. ○ An emergency preparedness plan will be prepared in advance, to deal with firefighting, evacuation and local communication. ○ For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices has been provided which meet 'BIS' (Bureau of Indian Standards). ○ As a part of CSR activities, community welfare activities will be undertaken by the proponent which leads to socio economic development
10	Occupational Health	○ First-aid facilities as per provisions under Rule (44) of Mines Rules 1955 ○ Initial and Periodical medical examination shall be conducted for the employees under Rule 29B & 45 (A). ○ Insurance will be taken in the name of the labourers working in the mines ○ Workers involved in mining work shall be provided protective equipments such as Thick Gloves, Goggles, ear plugs, safety boot wears, etc…

10.1 Description of the administrative aspects of Tvl. Everking Granites (an Extent of 3.19.5Ha), Grey Granite Quarry ensuring that mitigative measures are implemented and their effectiveness monitored, after approval of EIA

Regular monitoring network to maintain environmental quality will be implemented.

Table 10.2 EMP Budget for Plan period

S. No	Description	Budget
1.	Personal protective equipment	Rs 2,00,000
2.	Environmental Monitoring	Rs 2,25,000
3.	Occupation Health	Rs 2,00,000
4.	Green Belt & Dust suppression	Rs 1,00,000
	Total	**Rs 7.25 lakhs**

Table 10.3 Budget Allocation for Mine Closure Plan as per ToR

S. No	Description	Budget
1.	Parapet wall around dump (1m = Rs 500)	Rs 1,00,000
2.	Fencing around mines	Rs 2,00,000
3.	Making Pit for pond after the activity of mines	Rs 50,000
4.	Green belt development	Rs 1,00,000
	Total	**Rs 4.5 lakhs**

Apart from the afforestation plan given in Mining plan, the above table depicts the budget allocated for additional green belt development as specified by ToR.

10.2 Description of the administrative aspects of Thiru.E.Jagadeesan (an Extent of 1.56.5Ha), Grey Granite Quarry ensuring that mitigative measures are implemented and their effectiveness monitored, after approval of EIA

In order to maintain the environmental quality within the standards, regular monitoring network to maintain environmental quality will be implemented.

Table 10.4 EMP Budget for Plan period

S. No	Description	Budget
1.	Personal protective equipment	Rs 1,00,000
2.	Environmental Monitoring	Rs 2,25,000
3.	Occupation Health	Rs 1,00,000
4.	Green Belt & Dust suppression	Rs 4,00,000
5.	Tyre/Wheel washing station	Rs 1,00,000
6.	Sign Boards	Rs 25,000
	Total	**Rs 9.5 lakhs**

Table 10.5 Budget Allocation for Mine Closure Plan as per ToR

S. No	Description	Budget
1.	Parapet wall around dump (1m = Rs 500)	Rs 1,00,000
2.	Fencing around mines	Rs 2,00,000
3.	Making Pit for pond after the activity of mines	Rs 50,000
4.	Green belt development	Rs 1,00,000
	Total	**Rs 4.5 lakhs**

Budget is allotted for additional green belt development as specified by ToR in addition to budget allotted for afforestation plan given in Mining Plan.

CHAPTER – 11: SUMMARY AND CONCLUSIONS

11.0 Introduction

Tvl. Everking Granites having administrative office at No:1/161,T.N.H.B Phase-II, Krishnagiri, Tamil Nadu-635002 represented by Managing partner, S.S. Jamaludeen (Lessee) and the Lessee Thiru.E.Jagadeesan, S/o. Egananthan, residing at No.5/50, Thiruvalluvar Nagar, Krishnagiri District, Tamil Nadu has obtained quarry lease from the State Government under **G.O.(3D).NO. 20 Industries (MME.2) Dept. dated 22.03.2018** and **G.O. (3D).No: 42 Industries (MME.2) Dept. dated 20.09.2018** respectively for quarrying grey granite over an extent of 3.19.5 hectares and 1.56.5 hectares in S.F. Nos 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C and 348/6D1 and in S.F. Nos 353/2A1B, 2A7, 2B, 2C1 & 2E1A respectively located in Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu for the period of 20 years.

The mining plan for grey granite quarry of Tvl. Everking Granites (3.19.5 Ha) and Thiru.E.Jagadeesan (1.56.5 Ha) was approved by Commissioner of Geology and Mining, Chennai vide letter **No. 992/MM5/2017, dated 22.01.2018** and vide letter **No. 993/MM5/2017, dated 13.02.2018.**

An environment clearance for Tvl. Everking Granites and Thiru.E.Jagadeesan was obtained from District Environmental Impact Assessment Authority vide letter **No.36/DEIAA-KGI/EC NO.25/2018 Dated: 27.02.2018** and letter **No. 03/DEIAA-KGI/EC No. 104/2018, dated 27.08.2018** for operating grey granite quarry for the period of five years. For the lease area 3.19.5 Ha, the lease deed was executed on 28.05.2018 and will expire on 27.05.2038 and for the lease area 1.56.5 Ha, the lease deed was executed on 09.11.2018 and will expire on 08.11.2038.

Scheme of mining has to be prepared under Rule 18 (3) of GCDR, 1999 and Rule 41 of TNMMCR, 1959 for the existing mining lease once in five years for systematic and scientific development of quarry. Accordingly, the 1st scheme of mining has been prepared for both the lease areas 3.19.5 Ha and 1.56.5 Ha for the period from 2023-2024 to 2027-2028 and it has been approved by Commissioner, Department of Geology and Mining, Guindy, Chennai vide letter **Rc.No.5253/MM4/2022 dated 14.10.2022** and vide letter **No. 5254/MM4/2022 dated 14.10.2022**.

Recently MoEF&CC has issued OM vide F.No.IA3-22/11/2023-IA.III (E-208230) dated 28.04.2023. In this notification, it is stated that the EC issued by DEIAA between 15.01.2016 and 13.09.2018 shall be reappraised through SEAC/SEIAA and EC shall be issued by SEIAA within the period of 1 year.

As per the cluster letter issued by Deputy Director, Department of Geology and Mining, Krishnagiri vide Rc.No.1200/2022/Mines dated 28.10.2022 for Tvl. Everking Granites (3.19.5 Ha) and vide Rc.No.1201/2022/Mines dated 28.10.2022 for Thiru.E.Jagadeesan (1.56.5 Ha), six existing granite quarries including grey granite quarry of Tvl. Everking Granites and Thiru.E.Jagadeesan comes within cluster of 500m radius. The total area of cluster is 13.14.5 Ha. The extents of lease area of all lessees as per cluster letter of Thiru.E.Jagadeesan (1.56.5 Ha), are given below.

Existing Quarries

1. Thiru.E.Jagadeesan – 1.56.50 Ha
2. M/s.Everking Granites – 3.19.50 Ha
3. Tvl.M.P.Granite – 1.85.50 Ha
4. M.P. Mining and Leasing Company – 1.84.00 Ha
5. S.S.Jameeluddin – 1.25.00 Ha
6. Thiru.A.V.Elamurugu – 1.01.50 Ha
7. Thiru.A.V.Elamurugu – 2.42.50 Ha

Based on MoEF&CC OM vide F.No.IA3-22/11/2023-IA.III (E-208230) dated 28.04.2023 and cluster issued by Deputy Director, Department of Geology and Mining, Krishnagiri, the two lessee made TOR application individually through PARIVESH website to carry out EIA Studies for obtaining Environmental clearance. The details are given in below Table 11.1.

Table 11.1 Details on Terms of Reference

S. No	Name of Applicant	ToR Application No	SEAC and SEIAA Meeting No	TOR Letter No
1	Tvl. Everking Granites	SIA/TN/MIN/404966/ 2022 dated 04.11.2022	346th SEAC Meeting, dated 12.01.2023 and 591st SEIAA Meeting dated 10.02.2023 361st SEAC meeting dated 10.03.2023 and 607th SEIAA Meeting dated 03.04.2023	Lr.No.SEIAA-TN/F.No.9549/SEAC/ ToR-1513/2023 dated 01.08.2023
2	Thiru.E.Jagadeesan	SIA/TN/MIN/404965/ 2022 dated 04.11.2022	393rd SEAC Meeting, dated 20.07.2023 and 643rd SEIAA Meeting dated 01.08.2023	Lr.No.SEIAA-TN/F.No9550/ToR-1514/2022 dated 01.08.2023

In TOR letters, it is mentioned that public hearing needs to be conducted for the existing grey granite quarries of two applicants for obtaining EC. In MOEF&CC SO 141 (E) dated 15.01.2016-Appendix XI, it is mentioned that there shall be one public consultation for entire cluster after which the final Environmental Impact Assessment Report or Environmental Management Plan report for the cluster shall be prepared. Based on the OM issued by MOEF & CC, the combined Draft EIA/EMP report has been prepared for the two existing quarries in the cluster of 13.14.5 Ha for conducting public hearing. The points raised in the public hearing and the commitments of the project proponent will be given detail in the Final EIA Report which will be submitted to SEAC/SEIAA, TN for obtaining environmental clearance.

11.1 Details of Project and Project Proponent

Table No 11. 2 Details on Project and Project Proponent

A. Proposed Projects to Conduct Public Hearing	
1. M/s. Tvl. EVERKING GRANITES	
Particulars	**Details**
Address of the Project Proponent	**M/s. Tvl. EVERKING GRANITES** The Managing Partner: S.S.Jameeluddin No:1/161, T.N.H.B Phase-II, Krishnagiri, Tamil Nadu-635002, E.mail: jameel.rkf@gmail.com Mob: +919994433007, +919443632513
Lease Area	3.19.5 Hectares (Patta Land)
Site Location	S.F.No: 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C and 348/6D1, Jagadevipalayam village, Bargur Taluk, Krishnagiri District, Tamil Nadu
Geographical Co-ordinates	Latitude: N12°28'39.72981"to N12°28'50.35514" Longitude: E78°21'06.95056" to E78°21'15.36719".
Toposheet No.	57L/7
Elevation	Elevation of the area is 451m above MSL
Government Order	G.O.(3D).NO. 20 Industries (MME.2) Dept. dated 22.03.2018
Precise Area Communication	letter No. 3809/MME.2/2017-1, dated 06.09.2017
Mining Plan Approval Details	letter No. 992/MM5/2017, dated 22.01.2018
EC letter from DEIAA	letter No. 36/DEIAA-KGI/EC NO.25/2018 Dated: 27.02.2018.
Period of Lease	20 years (28.05.2018 to 27.05.2038)
Approval of Scheme of mining	Rc.No.5253/MM4/2022 dated 14.10.2022

AD Cluster letter	Rc.No.1200/2022/Mines dated 28.10.2022.
2. Thiru.E.Jagadeesan	
Particulars	**Details**
Address of the Project Proponent	**Thiru.E.Jagadeesan** S/o. Egananthan, No.5/50,Thiruvalluvar Nagar, Krishnagiri District, Tamil Nadu - 635001. E.mail: jameel.jk@gmail.com Mob: +9994433007.
Lease Area	1.56.5 Hectares (Patta Land)
Site Location	S.F.Nos. 353/2A1B, 2A7, 2B, 2C1 & 2E1A, Jagadevipalayam Village, Bargur Taluk, Krishnagiri District and Tamil Nadu.
Geographical Co-ordinates	Latitude: 12°28'34.91765" N to 12°28'40.90210"N Longitude: 78°21'11.18021" E to 78°21'17.84397"E
Toposheet No.	57 L/7
Elevation	Elevation of the area is 453m above MSL
Government Order	G.O. (3D).No: 42 Industries (MME.2) Dept. dated 20.09.2018.
Period of Lease	20 years (09.11.2018 to 08.11.2038)
Precise Area communication	letter No. 5137/ MME.2 / 2017-1, dated 08.09.2017
Mining Plan Approval Details	letter No. 993/MM5/2017, dated 13.02.2018
EC letter from DEIAA	letter No. 03/DEIAA-KGI/EC No. 104/2018, dated 27.08.2018
Period of Lease	20 years (09.11.2018 to 08.11.2038)
Approval of Scheme of mining	Rc.No. 5254/MM4/2022 dated 14.10.2022
AD Cluster letter	Rc.No.1201/2022/Mines Dated 28.10.2022
B. Other Existing Quarries within 500m radius	
1.Tvl. M.P Granites	
Address of the Project Proponent	Tvl.M.P Granite, No.131/29, R.R. Complex, Kollapatti, Animoor Post, Tiruchengode.
Government Order	GO (3D) No.07 Ind.(MME-2) Dept. dated 18.01.2016
Village and Taluk	Jagadevipalayam Village, Bargur Taluk.
S.F.No	266/1, 266/1AC, 268/1AD
Extent in Ha	1.85.50 Ha
Lease period	03.02.2016 to 02.02.2023

2. M.P Mining and Leasing Company	
Address of the Project Proponent	M.P Mining and Leasing Company, No.2/226, Karisalkulam Road, Vakkanangundu, Kariyapatti, Virudhunagar.
Government Order	GO (3D) No.72 Ind.(MME-2) Dept. dated 01.12.2016
Village and Taluk	Jagadevipalayam Village, Bargur Taluk.
S.F.No	268/1Y, 268/1Z, 268/2K, 268/1AB
Extent in Ha	1.84.00 Ha
Lease period	10.02.2017 to 09.02.2037
3. S.S.Jameeluddin	
Address of the Project Proponent	S.S. Jameeluddin S/o. S.S. Salauddin, No. 449/1, New Housing Board, II Phase, Krishnagiri.
Government Order	GO (3D) No.17 Ind.(MME-2) Dept. dated 08.04.2008
Village and Taluk	Jagadevipalayam Village, Bargur Taluk.
S.F.No	372/3A
Extent in Ha	1.25.00 Ha
Lease period	22.12.2008 to 21.12.2028
4.Thiru.A.V.Elamurugu	
Address of the Project Proponent	Thiru.A.V.Elamurugu, No.8, Ramakrishnapuram, 30Ft road, Karur Town, Karur.
Government Order	GO (3D) No.03 Ind.(MME-2) Dept. dated 25.01.2011
Village and Taluk	Jagadevipalayam Village, Bargur Taluk.
S.F.No	372/3B5, 372/3B6
Extent in Ha	1.01.50 Ha
Lease period	28.02.2011 to 27.02.2031
5.Thiru.A.V.Elamurugu	
Address of the Project Proponent	Thiru.A.V.Elamurugu, No.8, Ramakrishnapuram, 30Ft road, Karur Town, Karur
Government Order	GO (3D) No.19 Ind.(MME-2) Dept. dated 12.02.2016
Village and Taluk	Jagadevipalayam Village, Bargur Taluk.
S.F.No	372/3B2(P), 372/3B4(P), 372/3B5(P), 377/1A(P)
Extent in Ha	2.42.50 Ha
Lease period	29.02.2018 to 8.02.2036

11.2 SCOPE OF THEPROJECT

The proposal for Environmental Clearance of Existing Grey Granite quarry of **Tvl. Everking Granites (3.19.5 Ha) and Thiru.E.Jagadeesan (1.56.5 Ha)** require EIA/EMP Report as per respective Terms of Reference for conducting public hearing and obtaining environmental clearance from SEAC/SEIAA.

11.3 ENVIRONMENTAL SETTINGS & MINING DETAILS

Table No 11.3 Accessibility

Nearest Village	Bagimanur • For Lease Area of 3.19.5 Ha – 0.42km – NE • For Lease Area of 1.56.5- 0.70km – NE
Nearest Settlement	
Nearest Town	Krishnagiri– 15 km - NW
Nearest Roadway	MDR-157– Kaveripattinam to Badanavadi – 7.5km - S NH -77 – Krishnagiri to Sinagarapettai – 1.7 km - southwest SH-131 – Bargur to Tirupattur – 5.4 km – NE Bagimanur Village road – 150km - E
Nearest Railway station	Patchur Railway Station– 17.2 km –NE Tirupattur Railway Station – 22.7km - E
Nearest Airport	Kampegowda International Airport, Bengaluru –104km – NW

S.no	Village Name	Total population as per 2011 census	Distance with Direction
1	Jagadevipalayam	6747	4.7 km-W
2	Gangavaram	3122	8.6 km-S
3	Orappam	3512	7.4 km-SW
4	Sigaralapalli	7765	6.9km-E
5	Kandikuppam	5734	7.6 km-NW
6	Gandhinagar	9114	4.0km-S
7	Oppathavadi	9604	7.5km-NE
8	Batlapalli	3724	6 km-SE
9	Pasinayanapalli	20749	6.57 km-SE
10	Kannandahalli	8562	9.53 km-S

Table No 11.4 Environmental Sensitiveness

Interstate Boundary	Tamil Nadu –Andhra Pradesh Interstate boundary –16.6km (NE)
Coastal Zone	Bay of Bengal – 172km – Southeast
Reserve Forest	1. Thogarapalli R.F. -1.7km – S 2. Bargur R.F – 6.9km – NE 3. Varatanapalli – 8.0km – NW 4. Nandibanda R.F – 8.2km – NE 5. Neralakotta R.F – 10.4km - N The proposed projects site does not attract Forest Conservation Act, 1980.
Wildlife sanctuary	Nil within 10km radius. Cauvery Wildlife Sanctuary – 41.2km – W The Proposed projects site does not attract the Wildlife (Protection) Act, 1972.
Water bodies	1. Mattur Stream – 780m – SW 2. A lake – 1.5m – SW 3. A lake near Gettur village – 4.8km – NW 4. A lake near Balinayanapalli village – 7.1km – NW 5. A lake near Simanur Village– 5.4km - NW 6. Bargur River – 4.0km - NE
Defense Installations	Nil within 10km radius
Critically Polluted area	Nil within 10km radius
Seismic zone	Zone-III, Moderate damage risk zone as per BMTPC, Vulnerability atlas Seismic zone of India IS: 1893-2002

Table No 11.5 Mining Details – Tvl. Everking Granites (3.19.5 Ha)

Method of Mining	Open cast Mechanized method of mining
Geological resources	3,94,694m^3
Mineable reserves	2,12,420m^3
Run of Mine(ROM)	1,00,413m^3 for plan period (2023-24 to 2027-28)
Production (30%)	30,124m^3 for five years or 6025 m^3/annum(Avg)
Reject (70%)	70289 m^3
Top soil	1278m^3 for plan period (2023-24 to 2027-28)
Weathered Rock	9647m^3 for plan period (2023-24 to 2027-28)
Ore: Waste ratio	1: 2.69
Depth of Mining	30m bgl
Water Table	40 m bgl
Road design	1: 10 inside the pit and ramp

	1:16 for transport
Overall Pit Slope	45°
Period of Lease	20 years (28.05.2018 to 27.05.2038)
Existing pit dimension	**Pit** | **L(m)** | **W(m)** | **Max.D(m)** I | 125m | 65m | 12m (RL 452 – 440)
Existing dump dimension	**S.No** | **L(m)** | **W(m)** | **Depth in (m)** I | 73m | 64m | 8m (RL 456-448)
Project Cost	Rs 84.0 Lakhs
EMP Cost	Rs 7.25 lakhs
CER Cost	Rs. 1.68 lakhs

Table No 11.6 Mining Details – Thiru.E.Jagadeesan (1.56.5 Ha)

Method of Mining	Open cast Mechanized method of mining
Geological resources	203274m^3
Mineable reserves	90994m^3
Run of Mine(ROM)	51764m^3 for plan period (2023-24 to 2027-28)
Production (30%)	15,529m^3 for five years or 3106 m^3/annum(Avg)
Reject (70%)	36235 m^3
Top soil	1131m^3 for plan period (2023-24 to 2027-28)
Weathered Rock	4484m^3 for plan period (2023-24 to 2027-28)
Ore: Waste ratio	1: 2.7
Depth of Mining	36m bgl.
Water Table	40m bgl
Road design	1: 10 inside the pit and ramp 1:16 for transport
Overall Pit Slope	45°
Period of Lease	20 years (09.11.2018 to 08.11.2038)
Existing pit dimension	**Pit** | **L(m)** | **W(m)** | **Depth in (m)** I | 95m | 40m | 11m
Project Cost	Rs 78.0 lakhs
EMP Cost	Rs 9.5 lakhs
CER Cost	Rs.1.56 lakhs

11.4 Description of the environment

11.4.1 Base line environmental study

Collection of base line data is an integral part of the preparation of environmental impact assessment reports. The baseline monitoring study has been carried out during March 1st 2023 – May 31st 2023 to assess the existing environmental scenario in the area. For the purpose of EIA studies, mine lease area was considered as the core zone and area outside the mine lease boundary up to 10km radius from the lease boundary was considered as buffer zone.

Table No 11.7 Baseline Data

Particulars	Details	Standards
Meteorology (March 1st 2023 – May 31st 2023)		
Rainfall (Avg.)	173.3 mm	--
Temperature (Avg.)	20-38°C	--
Wind speed	2.2 m/s	--
Wind Direction	From west to east directions	
Ambient Air Quality (NAAQS)		
PM_{10}	38-52 µg/m^3	100 µg/m^3
$PM_{2.5}$	17.0 – 30.0 µg/m^3	60 µg/m^3
SO_2	3.0-13.0 µg/m^3	80 µg/m^3
NO_x	7.0-18.0 µg /m^3	80 µg/m^3
Noise Level (CPCB Standards)		
Day time (6:00 am - 10:00 pm)	Core zone – 36.2 - 41.3 dB (A) Buffer zone – 41.9- 47.4 dB (A))	**Industrial Area** Day Time - 75 dB (A) **Residential Area** Day Time – 55 dB (A)
Night time (10:00 pm - 06:00 am)	Core zone – 35.5 – 40.9 dB (A) Buffer zone – 34.5-40.2 dB(A)	**Industrial Area** Night Time – 70 dB(A) **Residential Area** Night Time – 45 dB (A)
Water Quality IS 10500:2012 (Desirable limits)		
pH	7.08 – 7.59	6.5 to 8.5
TDS	600-1020 mg/l	500 mg/l
Electrical conductivity at 25˚C	991-1661 micromhos/cm	
Total Hardness as $CaCO_3$	228-500 mg/l	200 mg/l

Total suspended solids	1-2 mg/l	IS 3025:P.17: 1984:R.2017
Chlorides Cl	57-505mg/l	250
Total iron Fe	0.06 – 0.08	0.3mg/l
Sulfates SO_4	12-24mg/l	200 mg/l
Soil Quality		
pH	6.78-8.91	Neutral to slightly alkaline
Bulk density	1.09-1.4 g/cc	Favorable physical condition for plant growth.
Hydro Geology		
Water Table	40-42 m bgl	

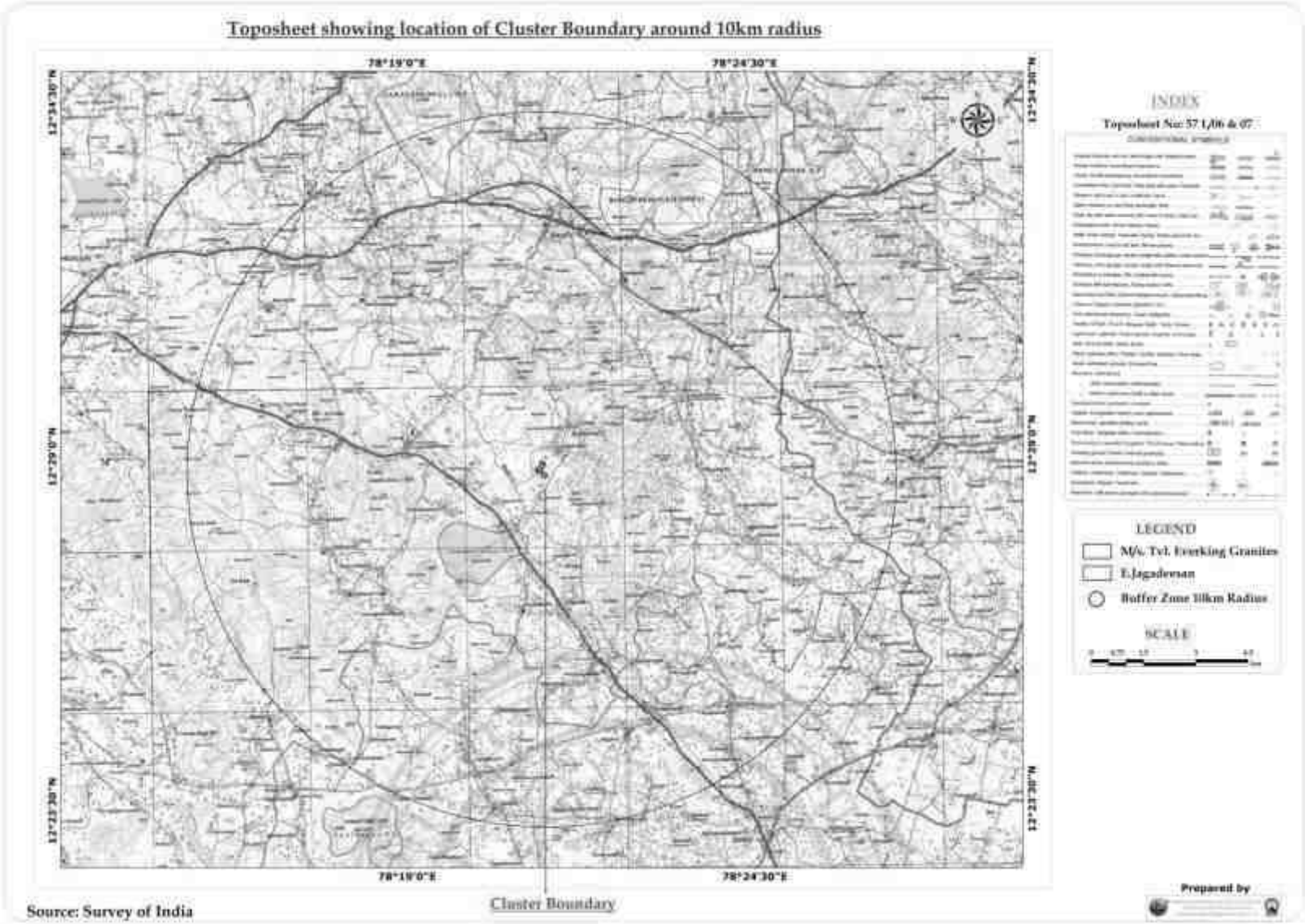


Fig No 11.1 Toposheet showing location of the lease area

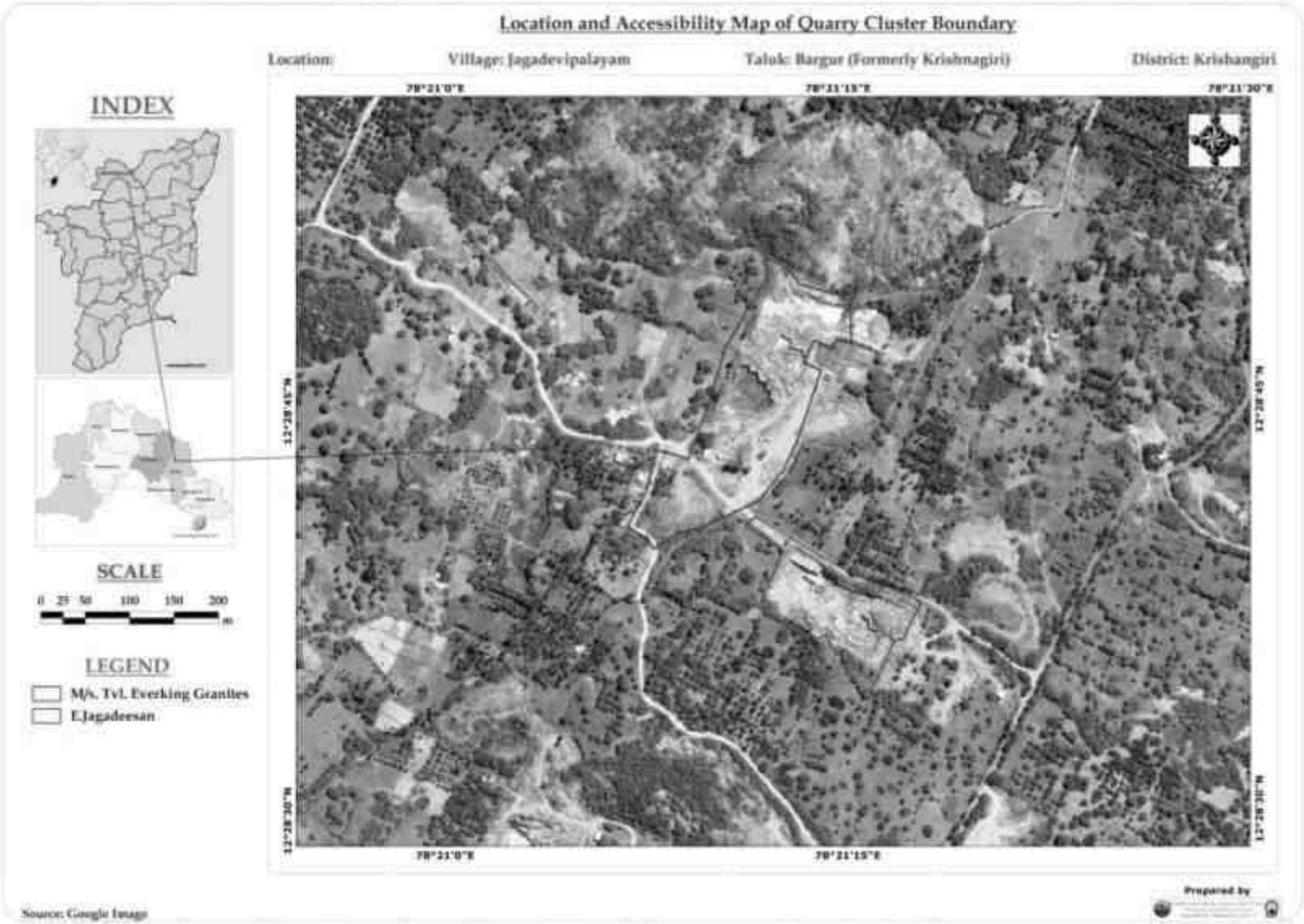


Fig No 11.2 Map Showing the Location and Accessibility of Quarry Lease Boundary

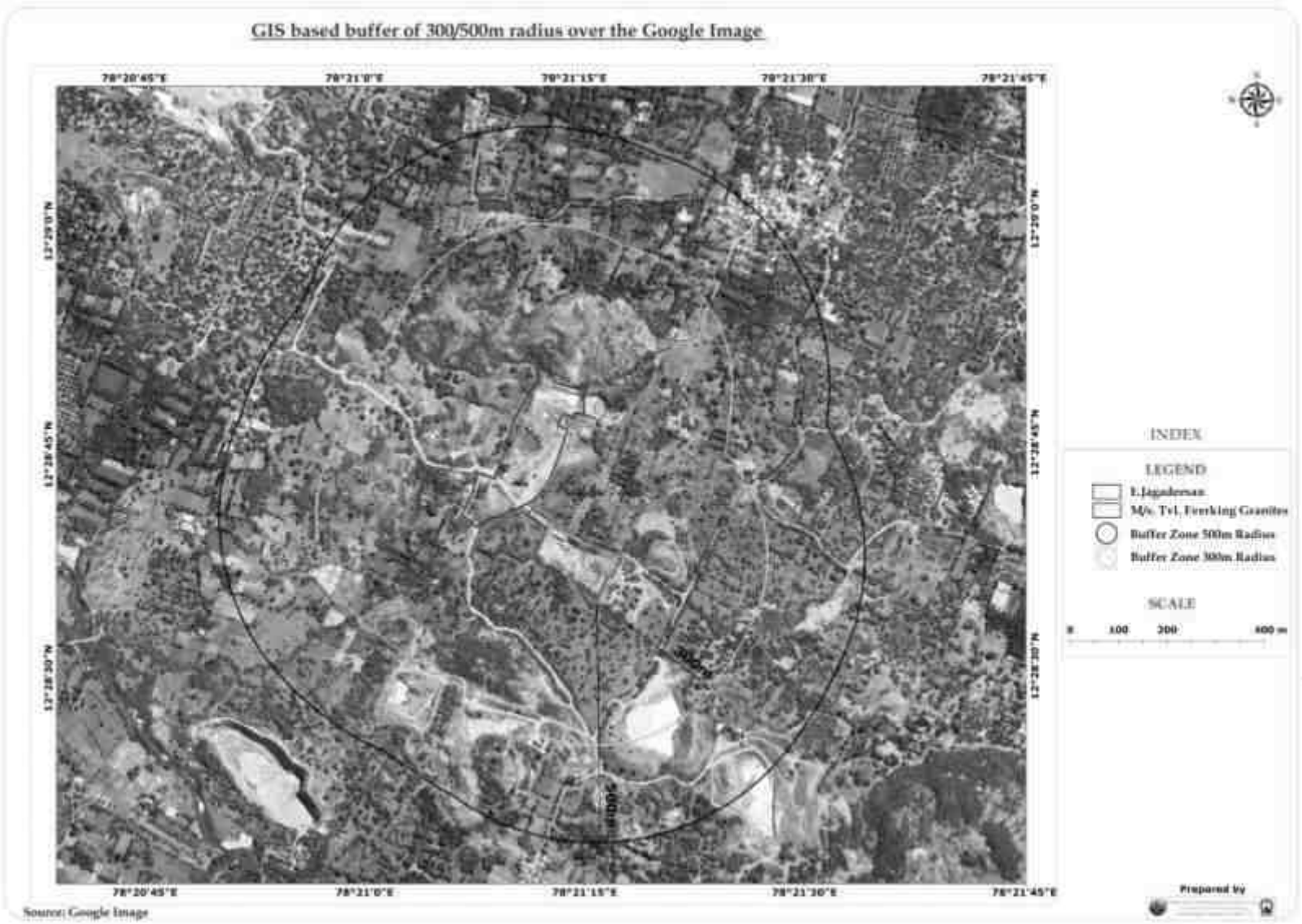


Fig No 11.3 Google Earth Image showing 300m and 500m radius around lease area

11.5 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

11.5.1 Air Environment

The air borne particulate matter is the main air pollutant by opencast mining. The mining operation will be carried out by adopting semi–mechanized methods which involves Jack Hammer drilling and blasting, excavation, loading and transportation.

AERMOD was used for prediction of impact of PM_{10} during conditions i) Loading/unloading and transportation of granite and weathered rock by trucks on Haul ii) During blasting of minerals. Total predicted 24-h maximum GLC of PM_{10} at project site for scenario 1 i.e loading-unloading and transportation and scenario 2 i.e. Blasting was 71.83µg/m^3 and 53.28 µg/m^3 occurred at the project site after superposition of base-line value 44 µg/m^3 over the incremental value of 27.83µg/m^3 and 9.28µg/m^3 due to combined impact of loading and unloading and transportation over the haul road and due to blasting.

When all the quarries in the cluster area are working together the incremental GLC will be high and it may cross the prescribed limits by NAAQS. To overcome such situation, cluster committee should be formed and adopt the environmental management plan effectively as per EIA report.

11.5.2 Noise Environment

Noise pollution poses a major health risk to the mine workers. The sources of noise in the proposed open cast rough stone & gravel quarry are such as Drilling, Blasting, and during movement of vehicles.

The noise generated by the mining activity is dissipated within the core zone. This is because of distance involved and other topographical features adding to the noise attenuation. From the results, it can be seen that the ambient noise levels (day time and night time) at all the locations will remain within permissible limits prescribed by CPCB and 90dB (A) norms of DGMS. At present there is no mining activity carried out. However, the expected noise levels are not likely to have any effect. Precaution will be made to keep down the noise exposure level of 85 dB (A) to the operating personnel for 8 hrs duration.

11.5.3 Ground Vibration

a) Tvl. Everking Granites 3.19.5 Ha – Existing Grey Granite Quarry

The charge per blast of 24kg is above the Peak Particle Velocity of 5mm/s for the habitation located at the distance of 137m. So the project proponent (Tvl. Everking Granites) is recommended to adopt delay detonators to keep PPV of ground vibration below 5mm/s. The nearest habitation is 137m –SW.

b) Thiru.E.Jagadeesan 1.56.5 Ha – Existing Grey Granite Quarry

The charge per blast of 12kg is well below the Peak Particle Velocity of 5mm/s for the habitation located at the distance of 202m.

11.5.4 Water Environment

Mining operations can affect groundwater quality in several ways. The most obvious occurs in the mining below the water table, either in underground workings or open pits. This provides a direct conduit to aquifers. Groundwater quality is also affected when waters (natural or process waters or wastewater) infiltrate through surface materials (including overlying waste or other material) into ground water. But this grey granite quarry mine is devoid of any such impacts.

The impact due to mining on the water quality is expected to be insignificant because of no use of chemicals or hazardous substances during mining process. The depths of mining of two existing grey granite quarries are above the ground water table and it will not intersect ground water table. The value of TH, TDS of water sample from all the locations are beyond the acceptable limits. Water sample from Sekilnatham village and Gandhi Nagar has high Chlorides. Based on the Water Quality Index calculated, water qualities from all core zone, Jagadevipalayam and Sekilnatham village are found good. In Gandhi nagar and MGR Nagar the water quality is found to be poor. For excellent quality, the water should be treated by reverse osmosis to reduce dissolved solids and total hardness to the required rate. Boiling of water will remove the microorganisms effectively from all waters in the above said villages and core zone making the water aseptically fit for drinking purposes. Prolonged consumption of water containing high TH causes Cardio vascular problems, diabetes, skin diseases, rashes, reproductive failure and renal failure. For the excellent quality of drinking the water must be treated with reverse osmosis process to overcome above mentioned such impacts on human body. Boiling of water will remove the microorganisms effectively from all waters in the above said villages and core zone making the water aseptically fit for drinking purposes.

11.5.5 Soil Environment

a) Tvl. Everking Granites -3.19.5 Ha

For the plan period 2023-2028, the generation of top soil is estimated as 1278 m^3. It will be dumped along mining lease boundary as earth bund and it will be utilized for green belt development within the lease area. No chemical or toxic elements will be used during mining activity. So the health of soil in and around the quarry will not be affected.

b) Thiru.E.Jagadeesan -1.56.5Ha

For the plan period 2023-2028, the generation of top soil is estimated as 1131m^3. It will be dumped along mining lease boundary as earth bund and it will be utilized for green belt development within the lease area. No chemical or toxic elements will be used during mining activity. So the health of soil in and around the quarry will not be affected.

11.5.6 Waste Dump

a) Tvl. Everking Granites -3.19.5 Ha

The proposed rate of production of Grey granite for five years is about 30124m^3 at the rate of 30% recovery up to permissible depth. The 70% reject of 70,289 m^3 shall be dumped over existing dump in South west side and on virgin barren land in east side as per approved scheme of mining. During monsoon seasons, the runoff from the dump will carry silts and small stones and it affect the land use around the project site which means it may affect the carrying capacity of stream, water holding capacity of lakes and affect nearest agricultural lands.

b) Thiru.E.Jagadeesan -1.56.5Ha

The proposed rate of production of Grey granite for five years is about 15,529m^3 at the rate of 30% recovery up to permissible depth. The 70% reject of 36,235m^3 shall be dumped in virgin barren land in north, northeast and east side as per approved scheme of mining. All rejects and waste materials dumped will be backfilled at the end of mine life.

11.5.7 Biological Environment

There are no notified endangered species in the area, which may be affected due to the quarry activities; therefore the biological environment will not have significant impact due to quarrying activity. The impact on the biological environment due to

amount of dust generation is minimized by well-developed green belt in and around the quarry lease area.

11.5.8 Land Environment

Grey granite Quarry project will result in disturbance of the land use pattern of the mine lease area. The impact on the topography in the form of changed landscape is unavoidable during mining activities like excavation, overburden dumping, soil extraction etc. Land requirement for the project has been assessed considering functional needs. So reclamation of mined out land will be given due importance as a step for sound land resource management. There is no release of toxic elements into the ground. No adverse impact is anticipated on land use of buffer zone associated due to the mining activity, as all the activities will be confined within the project site. The mining operations will impact the land usage and land aesthetics of quarry lease area. The land use analyses show that the mango plantation was done around the mining lease area of Tvl.Everking Granites and Thiru.E.Jagadeesan. The rate of plantation increases over a period of time due to quarry activity. At the end of the project, the quarried pit will be act as water storage pond. The stored water will be used for developing mango plantation around the mining lease area. It will improve the livelihood of village people. The evaporation rate of the water in the pit is given detail in the report.

11.5.9 Socio Economic Environment

The quarrying activity will definitely increase the employment opportunity (directly as well as indirectly) in the project area. Some of these impacts would be beneficial. The expectation of the people of area is concerned towards employment, education, road and health facilities. The literacy rate may be increased with the economic benefits which may arise from the quarrying activities.

a) Tvl. Everking Granites (3.19.5 Ha) – Grey Granite Quarry

Direct Employment - 24persons
Indirect Employment - 20 persons

b) Thiru.E.Jagadeesan (1.56.5 Ha) – Grey Granite Quarry

Direct Employment - 21persons
Indirect Employment - 20 persons

Table 11.8 Environmental Management Plan

S.No	Parameters	Mining Activity	Mitigation measures
1	Air Environment	Drilling	○ Dust extractor or wet drilling to be followed to control dust at source of emission ○ Use of Sharp drill bits for drilling holes and charging the holes by using optimum charge and using time delay detonator
		Blasting	○ Regular water sprinkling on blasted heaps at regular intervals will help in reducing considerable dust pollution
		Loading	○ Water sprinkling be done before loading by making it moist
		Transportation	○ Water sprinklers along the sides of haul road shall be fixed to control fly of dust while transporting minerals and waste ○ Overloading will be prevented ○ Trucks/Dumpers covered by tarpaulin covers
		DG Sets	○ DG sets will be used only during power failure ○ Adequate stack height for DG sets will be provided as per CPCB norms
		General measures	○ Avenue trees along roads around ML boundary shall be planted as per the norms of MoEF to control fly of dust. ○ Labours engaged in such dust prone areas should be provided with safety devices like ear muff, mask, goggles as per the MMR, 1961 amendments and circulars of DGMS. ○ Regular health check–up of workers and nearby villagers in the impacted area should be carried out and also regular

			occupational health assessment of employees should be carried out as per the Factories Act o Ambient Air Quality Monitoring will be conducted on regular basis to assess the quality of ambient air.
2	Water Environment	Surface water	o Wastewater discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.
		Ground water	o The mining activity will not intersect the ground water table o Desilting will be carried out before and immediately after the monsoon season
		Storm water	o Pit will be used for Storage of rainwater o Rain water will be collected in sump in the mining pit and will be allowed to store and pumped out to surface setting tank of 15 m x 10m x 3m to remove suspended solids if any. This collected water will be judiciously used for dust suppression onwards and such sites where dust likely to be generated and for developing green belt. o The proponent will collect and judicially utilize the rainwater as part of rain water harvesting
		General measures	o Regular monitoring and analyzing the quality of water
3	Noise Environment	Drilling	o Limiting time exposure of workers to excessive noise
		Blasting	o Carrying out blasting only during day time and not on cloudy days o Noise levels will be controlled by using optimum explosive charge, proper delay detonators and proper stemming to

			prevent blow out of holes. o Providing proper noise proof enclosure for the workers separated from the noise source and noise prone equipment
		Transportation	o Proper and regular maintenance of vehicles, machinery and other equipments. o The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments. o Speed of trucks entering or leaving the mine will be limited to moderate speed to prevent undue noise from empty vehicles. o Adequate silencers will be provided in all the diesel engines of vehicles. o Minimum use of horns and speed limit of 10 km/hr in the village area. o It will be ensured that all transportation vehicles carry a valid PUC Certificates
		General measures	o Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas o Provision of Quiet areas, where employees can get relief from workplace noise. o The development of green belts around the periphery of the mine to attenuate noise. o Regular medical check–up and proper training to personnel to create awareness about adverse noise level effects.
4	Vibration	Blasting	o Specific charge pattern has to be designed by proper trial

			vibration studies with varying charge ratios. o Milli second detonators shall be used preferably 25–50ms per delay to control vibrations o If the vibration still exceeds the limit a long Trench to a depth of 6m may cut in the direction of wave's movement to break longitudinal waves which travel close to surface, preferably near mine buffer zone o In spite of all measures periodical testing of vibration and noise using approved seismograph by DGMS has to be followed as a part of Environmental monitoring
5	Soil Environment	Topsoil	o Humus top soil shall be preserved for reuse in afforestation and agriculture o Top soil should not be mixed with other waste or reject materials. It should be conserved by judicious utilization in the mine premises o Garland drains will be provided around the mine and dumps to arrest any soil from the mine area being carried away by the rain water. This will also avoid the soil erosion and siltation in the mining pits and maintaining the stability of the benches
6	Waste Dump	Stabilization of Dumps	o The rejects\ waste dump shall be properly terraced in to 1.5m benches with proper repose angle and then the top soil shall be spread over the dumps and slope to make them humus for some time, after the soil suitable for water retention trees will be planted at the top, slope and toe of the stabilized dumps to

			form vegetation o Garland drainage around dump shall prevent under wash of dump by hydrostatic pressure to be developed by surface water and control wash outs and collapse
7	Plantation	Mine lease boundary and waste dump	o Provision of green belt all along the periphery of the lease area for control of dust and to attenuate noise o Stabilization of Dump with plantation o It is strongly recommended that the loss of plant in each year will be counted and again planted in subsequent plantation. o The plant should be planted taken from nursery, where the survival rate is high.
8	Land Environment		o The restoration of the degraded land would cover backfilling and terracing with the overburden / wastes and surfacing the same with top soil. o Provision of Garland drainage around the dumps o Fast growing trees and other native shrubs would be planted to stabilize the reclaimed land o Appropriate measures will be taken for Green belt development. o The rain water will be stored in the pit which will recharge the ground water as a part of rain water harvesting scheme for irrigating the nearby agricultural lands.
9	Socio Economic		o Good maintenance practices will be adopted for machinery and equipment, which will help to avert potential noise problems. o Green belt will be developed in and around the project site as

			per Central Pollution Control Board (CPCB) guidelines. o Drilling, blasting etc at specified location will be followed with proper schedule. o Appropriate air pollution control measure will be taken so as to minimize the environmental impact within the core zone. o An emergency preparedness plan will be prepared in advance, to deal with firefighting, evacuation and local communication. o For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices has been provided which meet 'BIS' (Bureau of Indian Standards). o As a part of CSR activities community welfare measures will be taken by Proponent through local Panchayat
10	Occupational Health		o First-aid facilities as per provisions under Rule (44) of Mines Rules 1955 o Initial and Periodical medical examination shall be conducted for the employees under Rule 29B & 45 (A). o Insurance will be taken in the name of the labourers working in the mines o Workers involved in mining work shall be provided protective equipments such as Thick Gloves, Goggles, ear plugs, safety boot wears, etc…

11.6 Analysis of Alternatives

The quarrying site is dependent on the geology and mineral deposition of the area. Hence, this project is, mineral and site specific and no alternative site considered for this project.

11.7 Environmental Monitoring Program

Success of any environmental management programme depends upon the efficiency of the organizational set up responsible for the implementation of the programme. Regular monitoring of the various environmental parameters is also necessary to evaluate the effectiveness of the management programme. Environmental Monitoring Programme will be conducted for various environmental components as per conditions stipulated in the Environmental Clearance Letter issued by SEIAA & Consent to Operate issued by TNPCB.

Table No: 11.9 Post Project Environmental Monitoring Program

S. No.	Environment Attributes	Location	Monitoring		Remarks
			Duration	Frequency	
1	Meteorology and Air Quality	Continuous monitoring weather station in core zone/ nearest IMD station	24 hours	Monthly Once	Wind speed, direction, Temperature, Relative humidity and Rainfall.
2	Air Pollution Monitoring – $PM_{2.5}$, PM_{10}, SO_2 and NO_x	5 locations (One station in the core zone and at least one in nearby residential, area, one in the upwind, two station on the downwind direction and one in cross wind direction)	8 hours	Once in six months	Fine Dust Sampler and Respirable Dust Sampler
3	Water Pollution Monitoring	Mine effluents, Set of grab samples during pre and post monsoon for ground and surface water in the vicinity.	–	Once in six months	Phyiso–chemical, microbiological characteristics

4	Hydrogeology	Water level in open wells in buffer zone around 1km at specific wells	-	Once in six months	Water level monitoring devices may be used.
5	Noise	Mine Boundary, high noise generating areas within the lease and at the nearest residential area	24 hours	Monthly Once	Sound level meter
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting operation	Digital Seismograph
7	Soil	Core Zone and Buffer zone (Grab samples)	–	Once in six months	Physical and Chemical characteristics

11.8 Project Benefits

The proponents, **Tvl. Everking Granites and Thiru.E.Jagadeesan** are very much conscious of his obligations to society at large. Under plantation programme, it is suggested to develop green belt further all along the boundary of the quarry lease area. Apart from the green belts and aesthetic plantation for eliminating fugitive emissions and noise control, all other massive plantation efforts will be executed with the assistance of experts and cooperation of the local community. The quarrying activity will create rural employment. In addition there will be indirect employment to many more people in the form of contractual jobs like construction of infrastructural facilities, transportation of Granite and gravel to destinations, sanitation, supply of goods and services to the quarry and other community services etc. The local population will have preference to get an employment. The proponent will help in socio economic development of the village by providing educational facilities to children, and welfare amenities like drinking water to school; road and medical facilities to villages and employment opportunities to nearby villagers. CSR budget is allocated as 2.5% of the profit.

11.9 Conclusion

As discussed, it is safe to mention that the project is not likely to cause significant impacts on the ecology and environment of the area, as adequate preventive measures will be adopted to contain the pollutants within permissible limits. The total operations shall be carried out with ease & minimum risk to the workers. The

proposed Environmental Management Plan will keep the area in a safe environment with negligible impact on the environment. Plantation will substantiate the impact due to the quarrying activity. Quarrying activity will help in improving the socio–economic benefits in areas like employment, communication and infrastructure development.

CHAPTER - 12: DISCLOSURE OF CONSULTANTS ENGAGED

AADHI BOOMI MINING AND ENVIRO TECH (P) LTD, a QCI/NABET Accredited EIA Consultant Organization having it's Registered Office at Salem and Branch at Porur, Chennai were promoted by a team of professional Geologists\ Mining\ Environment\ Civil\ Mechanical\ Chemical Engineers\Scientists. The company has vast experience in various disciplines including Exploration and mining of minerals and was incorporated in 2002 in the name of Suriya Mining Services providing expert advice and solutions for clients' requirement in the field of Mineral prospecting, Exploration, Mining, Geo-technical, Techno economic Feasibility reports\evaluation, Mineral Engineering, Environment Impact Assessment (EIA), Environment Management Plan (EMP), Environment Monitoring and related liaison jobs like Environment Clearance, Wild life and Forest clearance from DEIAA/SEIAA/NBWL/CRZ, MoEF& CC etc of all accredited sectors.

12.1 SCOPE

- EIA & EMP for all accredited sectors and Monitoring as per SPCB/CPCB/MoEF & CC
- Environment/ Wild life/ CRZ/ Forest Clearance
- Social Impact Analysis (SIA) and Eco-Biodiversity studies for Mine Closure Plan
- Remote Sensing & GIS including Satellite data processing, ASTER, DEM etc for application in Forest, Agriculture, Disaster, Mineral Exploration, Environment Modelling, Town planning etc
- Geological Surveying, Mapping, Exploration and Project Management
- Geophysical, Geochemical & Geotechnical studies to locate concealed deposit\ formation including structural studies
- Noise and Vibration studies as per DGMS\MoEF & CC to design controlled blasting where inhabitations are located within 300m
- Mine Design and costing, selection of Machineries and Project Evaluation
- Statutory Mine Plans & Sections, Mining Plan and other mandatory projects
- Design and development of Mineral Beneficiation Plant including mineral separation studies.

12.2 INFRASTRUCTURE

- Our Human resources are well expertise in all functional areas as per Ver. 3 of NABET\QCI. Our Hi Tech ISO certified Office and Lab are accredited by NABL and MoEFCC.

- And have latest field Investigation devices like Respirable and Fine Dust Samplers, Digital Seismograph, DDR3 Resistivity Meter, Echo sounder, DGPS, Total Station, Water level monitoring meters, GPS 62S, Sound Level Meter etc.

12.3 DISCLOSURE OF CONSULTANT FOR EIA STUDY

The Applicants, **Tvl. EVERKING GRANITES AND THIRU.E.JAGADEESAN** appointed **AADHI BOOMI MINING AND ENVIRO TECH PRIVATE LTD**, having its office at 3/216, K.S.V Nagar, Narasothipatti, Alagapuram, Salem – 636 004, Tamil Nadu, for preparation of EIA/EMP report for obtaining Environment Clearance from SEIAA/SEAC, Tamil Nadu.

AADHI BOOMI MINING AND ENVIRO TECH PRIVATE LTD has MOU with **EKDANT ENVIRO SERVICES (P) LTD** laboratory at Chennai and has own Laboratory named **ABM ENVIRONMENTAL AND ANALYTICAL LABORATORY, accredited by NABL** for sampling and testing of air, water, noise and soil samples. Ekdant Enviro Services are recognized by the Ministry of Environment and Forests, Government of India under the relevant provision of Environment (Protection) Act 1986 and Accredited by NABL and NABET, Quality Council of India, New Delhi.

S. No.	Study	Consultants/LAB
1	Generation of Base Line Data	Aadhi Boomi Mining & Enviro Tech P Ltd, Salem
2	Remote Sensing and Land use/Land cover Studies	Aadhi Boomi Mining & Enviro Tech P Ltd, Salem
3	Preparation of EIA and EMP Report	Aadhi Boomi Mining & Enviro Tech P Ltd, Salem

12.4 DECLARATION OF EXPERTS INVOLVED IN THE EIA REPORT PREPARATION

Names of the EIA coordinator, Functional Area Experts and other Team Members engaged and nature of consultancy rendered is provided in NABET Annexure –VII of EIA report. The multidisciplinary team comprises of Environmental Engineers, Geologists and Geographers who involved in preparation of Environmental Impact Assessment Report and Environment Management Plan for various functions like Air quality, Water quality, Noise levels, Soil Conservation, Hydro geology, Ecology and bio-diversity, Land use and Socio–Economics.

Table 12.1: Declaration of Experts

S.No	Name of the Expert	Category	Functional Areas	Signature
1.	Mr.S.Suriyakumar	A	EIA Co-ordinator	
		A	Solid and Hazardous Waste SHW*-HW* only	
		A	Risk Assessment and Hazard Management (RH)	
		A	Land Use (LU)	
		A	Soil Conservation (SC)	
2.	Mrs. S. Santhi	B	Land Use (LU)	
		B	Socio Economics (SE)	
3.	Dr. Nithia Priya P.M	B	Air Pollution, Monitoring, Prevention and Control (AP)	
		B	Water Pollution Monitoring, Prevention and Control (WP)	
4.	Mr. M. Venkatesh Prabhu	B	Meteorology, Air Quality Modelling & Prediction (AQ)	
		B	Noise and Vibration (NV)	
5.	Mr. K. Manuraj	B	Geology (GEO)	
			Hydrogeology (HG)	
6.	V.Sudha	B	Ecology and Biodiversity	
Team Member Involved in Report Preparation				
6.	Mrs. S. Sri Vidhya	Team Member	Water Pollution Monitoring, Prevention and Control (WP) under FAE - Dr. Nithia Priya P.M	
			Meteorology, Air Quality Modelling & Prediction (AQ) under FAE - Mr. M. Venkatesh Prabhu	

Annexure of
Tvl. Everking Granites

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

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY-TAMILNADU
3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet,
Chennai - 600 015.
Phone No. 044-24359973
Fax No. 044-24359975

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.9549/SEAC/ToR-1513/2023 Dated: 01.08.2023

To

M/s. Everking Granites,
No.1/161, T.N.H.B Phase-II,
Krishnagiri,
Tamil Nadu - 635 002.

Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with Public Hearing (ToR) for the Existing Grey Granite quarry lease over an extent of 3.19.5 Ha at S.F.Nos. 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C & 348/6D1 of Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu by M/s. Everking Granites – under project category "B1" and Schedule S.No.1(a) – ToR issued along with Public Hearing – preparation of EIA report – Regarding.

Ref:
1. Office Memorandum issued by MoEF & CC vide F. No. IA3-22/11/2023-IA.III (E-208230), dated: 28.04.2023
2. Earlier EC issued by DEIAA vide Lr.No.36/DEIAA-KGI/EC No.25/2018 dated:27.02.2018
3. Online proposal No. SIA/TN/MIN/404966/2022, dated 04.11.2022
4. Your application submitted for Terms of Reference dated: 07.11.2022
5. Minutes of the 346th SEAC meeting held on 12.01.2023
6. Minutes of the 591st SEIAA meeting held on 10.02.2023
7. Minutes of the 361st SEAC meeting held on 10.03.2023
8. Minutes of the 607th SEIAA meeting held on 03.04.2023

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9. Request letter from the proponent for re-appraisal dated 12.05.2023 as per MoEF & CC O.M dated 28.04.2023
10. Minutes of the 393rd SEAC meeting held on 20.07.2023
11. Minutes of the 643rd SEIAA meeting held on 01.08.2023

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

The proponent, M/s. Everking Granites has submitted application for Terms of Reference (ToR) on 07.11.2022, in Form-I, Pre-Feasibility report for the Existing Grey Granite quarry lease over an extent of 3.19.5 Ha at S.F.Nos. 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C & 348/6D1 of Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu.

Discussion by SEAC and the Remarks:-

Existing Grey Granite Quarry lease over an extent of 3.19.5 Ha at S.F.Nos. 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C & 348/6D1 of Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu by M/s. Everking Granites - For Terms of Reference

The proposal was placed in the 393rd SEAC Meeting held on 20.07.2023. The details of the project are available in the website (parivesh.nic.in).

The SEAC noted the following:

1. The project proponent, M/s. Everking Granites has applied for Terms of Reference for the existing Grey Granite Quarry lease over an extent of 3.19.5 Ha at S.F.Nos. 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C & 348/6D1 of Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, 2006.
3. Earlier, EC was issued vide DEIAA Lr.No.36/DEIAA-KGI/EC No.25/2018 dated:27.02.2018 for Grey Granite Quarry lease over an extent S.F.Nos. 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C & 348/6D1 of Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu. The EC is valid upto 26.08.2023. The production as per the EC is 52,459m^3 of Grey Granite upto the depth of 30m.
4. Validity of lease is upto 27.5.2038
5. MoEF&CC Notification S.O. 221(E), Dt :18.01.2021.

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6. MoEF&CC Notification S.O. 1807(E), Dt: 12.04.2022.
7. MoEF&CC O.M. Dt:13.12.2022.
8. MoEF&CC O.M dated.28.04.2023
9. The total production for the 5 years (2023-24 to 2027-28) is RoM: 1,00,413m^3 which includes Grey Granite (30% recovery) - 30124 m^3 & rejects (70%) upto the depth of 30m.
10. Earlier, the proposal was placed in 346th SEAC meeting held on 12.01.2023. During the meeting, the proponent stated that he had requested for an automatic extension as per the MoEF&CC notification dated 12.04.2022 and O.M dated 13.12.2022 and hence requested for the same.

    SEAC noted that as per OM Dated 13.12.2022, Clarification on the amendment to EIA Notification 2006 issued vide S.O. No. 1807(E) dated 12.04.2022 with regard to validity of Environment Clearance, para 2 (ii) states that…

    "The Environment Clearances for which the project proponents have submitted the application for extension of validity as per the provisions of the EIA Notification 2006 as on the date of publication of Notification i.e., 12.04.2022 shall stand automatically extended to respective increased validity as mentioned at Para no. 1 column (C) above."

    Based on the presentation made by the proponent and the facts made available by the PP, the SEAC decided to confirm that the proposal is eligible for 'automatic extension' as per the aforementioned OM issued by the MoEF & CC.
11. Subsequently, it was placed in 591st Authority meeting held on 10.02.2023, and *the authority after detailed discussion decided that the automatic extension of validity of prior Environmental Clearance should be based on approval mining plan. Also, the project proponent has filed application seeking Terms of Reference (ToR) vide online proposal No.SIA/TN/MIN/404966/2022, dated: 04.11.2022 only and not for Extension validity of Environmental Clearance. In view of the above, SEIAA has decided to refer back the proposal to SEAC and SEAC is requested consider approved mining plan and to recommended approval of ToR.*
12. It is again been placed in 361st SEAC meeting held on 10.03.2023. During the meeting the PP/EIA Co Ordinator stated that they would like to withdraw this proposal quoting with MOEF&CC O.M dated 13.12.2022. Hence, the SEAC has decided to defer the proposal and requested the SEIAA to take further action accordingly.

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13. Subsequently, based on the MoEF&CC O.M dated.28.04.2023, the proponent vide letter dated.04.05.2023 requested to re-consider and process the ToR proposal.

14. In this regard, the proposal is again placed in this 393rd SEAC meeting held on 20.07.2023.

Based on the presentation made by the proponent, **SEAC decided to recommend the proposal for Terms of Reference (TOR) with Public Hearing subject to the following additional 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 give an Affidavit before the issuance of ToR from SEIAA-TN stating that the mining operations will remain suspended till they obtain the EC granted by the SEIAA after the reappraisal process as per MoEF &CC OM F.No. IA3-22/11/2023-IA.III (E-208230), dated. 28.04.2023.**
2. The project proponent shall submit a Certified Compliance Report as per the MoEF&CC O.M dated.08.06.2022 for the previous EC obtained from DEIAA.
3. The proponent shall furnish a letter obtained from AD/DD of Geology & Mining Department stating the following details:
    i. Original pit dimension
    ii. Quantity achieved Vs EC Approved Quantity
    iii. Balance Quantity as per Mineable Reserve calculated.
    iv. Mined out Depth as on date Vs EC Permitted depth
    v. Details of Mineral Rejects – Quantity & Place of location
    vi. Any Violations observed in the quarry during the past working.
    vii. Quantity of material mined out outside the mine lease area, if any
    viii. Condition of Safety zone/benches as on date.

ANNEXURE-I

1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:
    (i) Original pit dimension
    (ii) Quantity achieved Vs EC Approved Quantity
    (iii) Balance Quantity as per Mineable Reserve calculated.
    (iv) Mined out Depth as on date Vs EC Permitted depth
    (v) Details of illegal/illicit mining
    (vi) Violation in the quarry during the past working.

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(vii) Quantity of material mined out outside the mine lease area

(viii) Condition of Safety zone/benches

(ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.

2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.

3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.

4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.

5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.

6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.

7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.

8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.

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9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.
10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
14. Quantity of minerals mined out.
    - Highest production achieved in any one year
    - Detail of approved depth of mining.
    - Actual depth of the mining achieved earlier.
    - Name of the person already mined in that leases area.
    - If EC and CTO already obtained, the copy of the same shall be submitted.
    - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,
17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.

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18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.
19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

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25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
28. Impact on local transport infrastructure due to the Project should be indicated.
29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner

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34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.
42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

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Appendix

List of Native Trees Suggested 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 axillaris*** - 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
20. ***Dillenia pentagyna*** – Siru Uva, Sitruzha
21. ***Diospyros ebenum*** - Karungali
22. ***Diospyros chloroxylon*** – Vaganai
23. ***Ficus amplissima*** – Kal Itchi
24. ***Hibiscus tiliaceus*** – 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

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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
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. **Walsuratrifoliata** – valsura
60. **Wrightia tinctoria** – Veppalai
61. **Pithecellobium dulce** – Kodukkapuli

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Discussion by SEIAA and the Remarks:-

The proposal was placed in the 643rd Authority meeting held on 01.08.2023. The authority noted that this proposal was placed for appraisal in 393rd SEAC meeting held on 20.07.2023. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions in addition to the conditions in **'Annexure B'** of this minutes.

Annexure 'B'

Cluster Management Committee

1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.
2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,
3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.
4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.
7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.
8. The committee shall furnish the Emergency Management plan within the cluster.
9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.

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10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.

Impact study of mining

12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following
    a) Soil health & soil biological, physical land chemical features.
    b) Climate change leading to Droughts, Floods etc.
    c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
    d) Possibilities of water contamination and impact on aquatic ecosystem health.
    e) Agriculture, Forestry & Traditional practices.
    f) Hydrothermal/Geothermal effect due to destruction in the Environment.
    g) Bio-geochemical processes and its foot prints including environmental stress.
    h) Sediment geochemistry in the surface streams.

Agriculture & Agro-Biodiversity

13. Impact on surrounding agricultural fields around the proposed mining Area.
14. Impact on soil flora & vegetation around the project site.
15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.
16. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.
17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
18. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.

Forests

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

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20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.

Water Environment

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

Energy

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

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Climate Change

32. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.
33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.

Mine Closure Plan

34. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.

EMP

35. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.
36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.

Risk Assessment

37. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.

Disaster Management Plan

38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.

Others

39. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.
40. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.

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41. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

A. STANDARD TERMS OF REFERENCE

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

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Report.

8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.

12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site

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

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

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22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water

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should also be obtained and copy furnished.

29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

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37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed:-

a) Executive Summary of the EIA/EMP Report

b) All documents to be properly referenced with index and continuous page numbering.

c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.

e) Where the documents provided are in a language other than English, an English translation should be provided.

f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

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h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA.II (I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

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

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be 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

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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 is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest , eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.

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

MEMBER SECRETARY
SEIAA-TN

Copy to:

1. The Additional Chief Secretary to Government, Environment, Climate Change and Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
3. The Chairman, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai - 600 032.
4. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan, CGO Complex, New Delhi - 110 003.
5. The District Collector, Krishnagiri District.
6. Stock File.

ABSTRACT

Mines and Minerals – Minor Mineral – Grey Granite –Krishnagiri District – Bargur Taluk - Jegadevipalayam Village - Over an extent of 3.19.5 hectares of patta lands in S.F. Nos. 347/1 (0.33.0), 347/2 (0.65.0), 347/4 (0.23.5), 347/5 (1.06.0), 348/4 (0.32.0), 348/5 (0.20.0), 348/6B1 (0.16.2), 348/6C (0.10.5) and 348/6D1 (0.13.3) – Quarry Lease Application of Tvl.Everking Granites – Grant of quarry lease - Sanctioned – Orders – Issued.

INDUSTRIES (MME.2) DEPARTMENT

G.O. (3D) No.20

Dated: 22.03.2018
திருவள்ளுவர் ஆண்டு 2049,
ஹேவிளம்பி வருடம், பங்குனி 8.

Read:

1) From Tvl.Everking Granites (Tvl.S.S.Jamaludeen and E.Jagadeesan- partners) Quarry Lease Application dated: 07.09.2016.
2) From the District Collector, Krishnagiri, Letter Roc.500/2016/Mines-1, dated: 30.1.2017 and 17.02.2017.
3) From the Commissioner of Geology and Mining, File No.992/MM5/2017, dated: 1.3.2017.
4) Government Letter No.3809/MME.2/2017-1, Dated 6.09.2017.
5) From the Commissioner of Geology and Mining Letter No.992/MM5/2017, dated 21.01.2018.
6) From the Chairman, DEIAA/District Collector, Krishnagiri Letter No. 36/DEIAA – KGI/EC No.25/ 2018, dated 27.02.2018.

ORDER:

In the reference first read above, Tvl.Everking Granites (Tvl.S.S.Jamaludeen and E.Jegadeesan-Partners) have applied in the name of Tvl.Everking Granites for grant of lease for quarrying Grey Granite over an extent of 3.19.5 hectares of patta lands in S.F. Nos. 347/1 (0.33.0), 347/2 (0.65.0), 347/4 (0.23.5), 347/5 (1.06.0), 348/4 (0.32.0), 348/5 (0.20.0), 348/6B1 (0.16.2), 348/6C (0.10.5) and 348/6D1 (0.13.3) of Jegadevipalayam Village, Bargur Taluk, Krishnagiri District for a period of 20 years under rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959.

2. In the reference second and third read above, the District Collector, Krishnagiri and the Commissioner of Geology and Mining have recommended and forwarded the quarry lease application of Tvl.Everking Granites to the Government for passing orders.

3. Based on the reports of the District Collector, Krishnagiri and the Commissioner of Geology and Mining, the Government have examined the quarry lease application of the applicant and communicated the area recommended by the Commissioner of Geology and Mining as precise area and requested the applicant in the reference fourth read above to furnish the approved Mining Plan as per sub-rule (13) of rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959 through the Commissioner of Geology and Mining and to produce environmental clearance certificate from the DEIAA. The Commissioner of Geology and Mining in his reference 5th read above has approved the mining plan as per sub-rule (13) of rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959, subject to the condition that the applicant company shall obtain the Environmental Clearance as per the orders of the Hon'ble Supreme Court of India dated: 27.2.2012 in I.A. No.12-13/2011 in SLP (C) No.19629/2009 and as per the Office Memorandum No.L11011/ 47/2011-1A II(M), dated: 18.5.2012 of Ministry of Environment and Forest, Government of India. The District Level Environment Impact Assessment Authority in their reference 6th read above have accorded Environment Clearance for mining in the above said area subject to certain conditions.

4. In the circumstances detailed above, the Government after careful examination have decided to grant lease to quarry Grey Granite to Tvl.Everking Granites in the above patta lands. Accordingly, in exercise of the powers conferred under Rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959, the Governor of Tamil Nadu hereby grant quarry lease to Tvl.Everking Granites for quarrying Grey Granite over an extent of 3.19.5 hectares of patta lands in S.F. Nos. 347/1 (0.33.0), 347/2 (0.65.0), 347/4 (0.23.5), 347/5 (1.06.0), 348/4 (0.32.0), 348/5 (0.20.0), 348/6B1 (0.16.2), 348/6C (0.10.5) and 348/6D1 (0.13.3) of Jegadevipalayam Village, Bargur Taluk, Krishnagiri District for a period of twenty years, subject to the conditions specified in the annexure to this order and also the following special conditions along with all the conditions imposed by the District Level Environment Impact Assessment Authority in the reference 6th read above:

(i) A safety zone of 7.5 meters should be left out for the adjacent patta lands.

(ii) A safety distance of 10 meters should be left out for the Paral poramboke situated in S.F.No.344.

(iii) A safety zone of 50 meters should be left out for the Oni situated in S.F.Nos.350 and 351.

(iv) A safety zone of 50 meters should be left out for the E.B line passing north - south direction is situated at a distance of 39 meters from the Eastern boundary of applied area in S.F.No.347/2.

(v) A safety zone of 50 meters should be left out for the agricultural well and a E.B. line passing north-south direction is situated at the distance of 35 meters from the western boundary of applied area in S.F.No.347/5.

(vi) No hindrance shall be caused to the adjacent pattadars lands and to the Government parai poramboke lands while quarrying and transportation of granite.

(vii) Blasting of rocks and transportation of vehicles carrying granite should not carried out from 6PM to 6AM.

(viii) The conditions mentioned in G.O.(Ms)No.79 Industries Department dated 06.04.2015 should be complied with.

(ix) The applicant firm should produce latest solvency certificate before the execution of lease deed.

(x) The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows:-

- The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.
- The applicant shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan.

(xi) Environment Clearance should be obtained from the State Level Environment Impact Assessment Authority in respect of the subject area as per the orders of the Hon'ble Supreme Court of India, Dated: 27.2.2012 in I.A. No.12-13/2011 in SLP(C) No.19629/2009 and Office Memorandum No.L.11011/47/ 2011-1A II(M), Dated: 18.5.2012 of the Ministry of Environment & Forests, Government of India and as per Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959.

(xii) The lessee shall strictly adhere to the statutory and safety requirements.

(xiii) The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.

(xiv) 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.

(xv) The lease grantee shall submit scheme of mining; mine closure plan and other statutory requirements within the time stipulated for submission of the above, as per rules.

(xvi) The District Collector, Krishnagiri shall obtain a sworn in affidavit from the appellant containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.12789/ MMB.2/ 2002-7, Industries Department, Dated: 9.1.2003 are complied with.

5. The District Collector, Krishnagiri is directed to take necessary further action for the execution of agreement in the prescribed form and communicate the date of execution of agreement to the Government and Director of Geology and Mining.

6. The District Collector, Krishnagiri is also directed to verify and furnish a certificate to the effect that all lease deed conditions and other conditions mentioned in paragraph 4 above have been complied with, duly incorporated in the lease agreement and send it to the Government. The District Collector, Krishnagiri is also instructed to include all the conditions imposed by District Level Environment Impact Assessment Authority in the reference 6th read above.

(BY ORDER OF THE GOVERNOR)

K.GNANADESIKAN
ADDITIONAL CHIEF SECRETARY TO GOVERNMENT

To
The Managing Partner,
Everking Granites,
No.1/161,T.N.H.B,Phase-II
Krishnagiri – 635 002.
The Director of Geology and Mining,
Chennai – 600 032.
The District Collector,
Krishnagiri District.

Copy to:
The Special PA. to Hon'ble Minister for Law,
Courts and Prisons, Chennai-600 009.
The Industries (OP.II) Dept,
Chennai – 600 009.
SF/SC.

// FORWARDED BY ORDER //

22/3/18
SECTION OFFICER

22-3-18

Annexure

G.O.(3D) No.20, Industries (MME.2) Department, Dated: 22.03.2018

1. The applicant shall execute an agreement within one month from the date of receipt of the Government order.

2. The date of commencement of the period of lease shall be the date on which the agreement is executed.

3. The applicant shall pay seigniorage or dead rent whichever is more in respect of the actual quantity of granite removed at the rate prescribed from time to time in Appendix-II of the Tamil Nadu Minor Mineral Concession Rules, 1959.

4. The applicant should keep correct accounts showing the quantities and other particulars of all minerals obtained from the lands permitted to quarry.

5. The applicant should also allow any officer authorized by the District Collector or any other officer authorized by the State Government in this behalf to inspect the area and verify records and accounts and furnish such information under the terms as may be required by them.

6. The applicant shall carry out the quarrying operations in skilful, scientific systematic manner keeping in view, the proper safety of the labour conservation of minerals and preservation of environment ecology.

7. The applicant shall allow any officer authorized by the District Collector and Director of Geology and Mining to enter upon the area and inspect for the purpose mentioned in conditions 4 and 6 above and also carry out the directions issued to the satisfaction of the above said authorities.

8. No quarrying activities connected there to shall be done before the execution of the agreement and registration is at the cost of the applicant.

9. No hindrance shall be caused to the adjoining pattadars or public.

10. The applicant should restrict his mining operation strictly within the permitted area as defined in the sketch.

11. The terms and conditions are also subject to such further modifications, deletion and additions alternation as may be ordered by the Government to be included in the agreement to be executed for this purpose.

12. The applicant should maintain at his cost proper signboards indicating the survey numbers, years of the lease, name of the lease holder and the lease period to the satisfaction of the District Collector, Director of Geology and Mining and maintain it all time at the quarry site.

13. No quarrying shall be done within a distance of 7.5 meters of the boundaries of the permitted area.

14. The applicant should make his own arrangements to form the approach road from the public road to the place of his quarry.

15. The lessee shall strictly adhere to the statutory and safety requirements.

16. The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.

17. 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.

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

19. That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

K.GNANADESIKAN
ADDITIONAL CHIEF SECRETARY TO GOVERNMENT

//True Copy//

Section Officer

22.3.18

S. SURIYAKUMAR
M Sc.,M.Phil (Geo). F.C.C (Mining)
Qualified Person

2649/2018

தமிழ்நாடு தமிலநாடு TAMILNADU

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14.5.2018

Everking Granides
Krishnagiri

B.N. MUNIRAAJ
B.V.Lic: 7353/83
Krishnagiri, Tamilnadu

APPENDIX V

FORM OF JOINT AGREEMENT FOR QUARRYING AND CARRYING AWAY MINOR MINERALS BY LESSEES IN RYOTWARI LANDS IN WHICH THE MINERALS BELONG TO GOVERNMENT.

G.O (3D) No 20 Industries (MME.2) Department Dated 22.03.2018

THIS AGREEMENT MADE THIS 28th day of May 2018 between Thiru 1) E. Jagadeesan S/o. Eganathan, No. 5/50 Thiruvalluvar Nagar, Krishnagiri 635 001 2) S.S Jameeluddin S/o Salavudeen, Muslim D.No. 1/449. TNHB, Phase-II Krishnagiri 635 001 (hereinafter referred to as "the registered holder" which expression shall where the context so admits include also their heirs, exe cutors, administrators, legal representatives and assigns) of the first part and M/s. Everking Grnaite, having administrative Office at No. 1/161, TNHB, Phase-II, Krishnagiri 635 002 represented by its Authorised signatory Managing partner Thiru S.S. Jamaludeen, S/o Salavudeen (hereinafter refereed to as "the lessee" which expression shall where the context so admits shall include heirs, executors, administrators, legal representatives and

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Registered holders

DISTRICT COLLECTOR,
KRISHNAGIRI.

Document No: 2649 Book 1 30

LESSEE

(assigns) of the second part and the Governor of Tamil Nadu (hereinafter referred to as the Government which expression shall where the context so admits shall include his successors in office and assigns) of the third part.

WHEREAS the registered holder holds the lands described in the schedule hereto and intended to leased out to the lessee of the said lands for the purpose of quarrying GREY GRANITE in the said lands and to deposit mining waste in the said lands and has lodged with Collector the lease and accurate map or sketch of the said lands.

AND WHEREAS the lessee or tenant of the registered holder has made application to the Government through the Collector of the district of Krishnagiri (hereinafter referred to as "the Collector") seeking grant of quarrying lease for quarrying GREY GRANITE in the said lands and to deposit mining waste in the said lands and has lodged with the Collector an accurate map or sketch of the said lands;

AND WHEREAS, the Government have granted a quarrying lease to the lessee allowed him to commence quarrying operations for GREY GRANITE in the said lands and to deposit mining waste thereon by the lessee in the G.O (3D) No. 20 Industries (MME.2) Department dated 22.03.2018.

AND WHEREAS, the Collector, is prepared to allow the said registered holder or lessee to commence mining operations and to deposit mining waste in or on the said lands described in the schedule for a term of 20 years beginning on 28th day of May 2018 and ending on

27th day of May 2038 upon the registered holder and the lessee entering into the agreement here in contained.

Registered holders

DISTRICT COLLECTOR,
KRISHNAGIRI.

LESSEE
Managing Partner/Partner.

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Book 1 30 Sheets

Registrar

AND WHEREAS the lessee has deposited with the collector, the sum of Rs. 40,000/- (Rupees fourty thousand only) vide challan No. [illegible] dated 17.05.2018 remitted at state bank of India, Krishnagiri as security for the due performace of the covenants, agreements and provisos or damage which may be incurred to the Government by reason of any of the said lands described in the schedule hereto being rendered unfit for cultivation by the mining operations therein or by the deposit of mining waste thereon by either the registered holders or the lessee.

AND WHEREAS, the lessee has at the request of the registered holder and in consideration of such approval by the Collector of the mining operations as herein before recited agreed to join in these presents for the purpose of entering into covenants, agreements and provisos hereinafter contained as surety for the registered holder.

NOW THESE PRESENTS WITNESS and registered holder and the lessee do hereby jointly and severally and each of them both individually hereby covenant and agree with the Government as follows:-

1. To carry on mining operations during the said term in a proper and workman like manner and to deposit mining waste on the lands described in the schedule hereto and to answer and to account at all reasonable times to Government for all acts and defaults committed by any servants, agents or workmen employed by the registered holders or lessee in carrying on such operaions or in making such deposits.

2. To pay on the day of 2018 next and day on the day of every suceeding year so long as the operations oforesaid are carried on, upto the Treasury/ State Bank of India at Krishnagiri to the credit of the Government in addition to the land assessment for the time being payable in respect of the said lands, seigniorage on the minerals mined or dead rent which ever is higher for every year at the rates prescribed by the Government from time to time in the Appendix II of the TamilNadu Minor Mineral Contession Rules 1959.

Registered holders

DISTRICT COLLECTOR,
KRISHNAGIRI.

For EVERKING [illegible]

LESSEE

Managing Partner/Partner

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Sub-Registrar

3. To abide by the rules prescribed by the Government from time to time regarding quarrying of minor minerals.

4. To keep correct accounts in such form as the collector shall from time to time required and direct showing the quantities and other particulars of all minerals obtained by the registered holders or the lessee from the said lands and also the number of persons employed in carrying on the said mining operations therein and to prepare and maintain from time to time when so directed by the said collector complete and correct plans of all mines and working in the said lands and to allow any officer thereunto authorised by the Commissioner/ Director of Geology and Mining, Tamil Nadu, from time to time and at all times to examine such accounts and any such plans and to supply and furnish when so required all such information and returns regarding all or any of the matters aforesaid as the Government may from time to time required and direct.

5. To allow any officer authorized by the Commissioner/Director of Geology and Mining, Tamil Nadu in that behalf from time to time and at all times to enter upon any part of the said lands where mining operations may be carried on for the purpose of inspecting the same.

6. To forthwith send to the Collector a report of any accident which may occur at or in the said land and also of the discovery therein of any minerals other than GREY GRANITE.

7. Not to claim any remission of assessment in respect of any of the said lands which shall be rendered unfit for surface cultivation by carrying on of any mining operations or by the deposit of mining waste unless thirty times of the assessment thereon has been deducted under proviso 2 here under.

PROVIDED ALWAYS and it is hereby further agreed by and between the parties as follows:-.

1. That it shall be lawful for the registered holder or lessee as the case may be at any time to cease mining operations under these presents provided the registered holder or lessee shall pay to the Government or the Collector the land assessment, cess and seigniorage payable by the registered holder or the lessee under these presents upto to the end of the year in which the registered holder.

Registered holders

For EVEREST

LESSEE

Managing Partner

DISTRICT COLLECTOR,
KRISHNAGIRI.

or the lessee shall cease such mining operations and shall restore the said lands fence or fill in abandoned pits and excavations therein if required by the collector as next hereinafter provided and upon, the registered holders or the lessee so doing these presents shall cease and determine.

2. That in case the registered holder shall relinquish the whole or part of the said lands in case of the expiry or sooner determination of this agreement then and in any such case, the registered holder in the case of relinquishment and the registered holder and the lessee in other cases shall restore said lands or the area relinquished or so much thereof as the collector shall required to be restored to a state fit for cultivation and shall securely and permanently fence or fill in all abondoned pits and excavation therein as the Collector shall require to be so fenced or filled in and incase the registered holder or the lessee shall fail, or neglect any such lands with the registered holder or the lessee be required to restore to a state fit for cultivation or to so fence or fill in any such abandoned pit or excavation which the registered holders or the lessee shall be required to so fence or fill them and in any such case it shall be lawful for the collector to so restore any such lands or as the case may be so fence or fill in any pit or excavation at the expense of the registered holders or lessee and to apply the said sum of Rs 40,000/- (Rupees fourty thousand only) so deposited in or towards the cost of so doing and to deduct from the amount of the said deposit and retain on behalf of the Government a sum equal to thirty times the assessment of the said lands which shall have been rendered unfit for cultivation. If, however the amount of deposit is not sufficient to cover the cost of such restoration or fencing or filling as the case may be or to meet thirty times the assessment of the area rendered uncultivable, it shall be lawful for the Government to recover the balance by resort to Civil Court.

3. That all land assessment, cess and seigniorage fee or dead rent payable under these presents shall be recoverable under the provisions of the Tamil nadu Revenue Recovery Act, 1864, or any subsisting statutory modification thereof, as if the same were arrear of land revenue.

Registered holders

DISTRICT COLLECTOR,
KRISHNAGIRI.

For EVERR...

LESSEE

Managing Partner/...

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4. That in the event of any breach of the registered holder/ lessee of any of the conditions of these presents, it shall be lawful for the Government to levy enhanced seigniorage subject to the maximum of five times the normal rate or for the collector to give notice in writing to the registered holder/lessee of his intention to cancel these presents whereupon the same shall stand cancelled but without prejudice to any rights which the Government may have against the registered holder/ lessee in respect of any antecedent claim or breach of covenant or condition.

5. That any notice to be given to registered holder/ lessee may be addressed to his last known place of abode and where a notice has been so addressed it shall be deemed to have been duly served for the purpose of these presents.

6. Should any question or dispute arise regarding an agreement executed in pursuance of these rules or any matter or thing connected therewith or the powers of the registered holder/ lessee thereunder, the amount or payment of the seigniorage fee or dead rent or area assessment made payable thereby, the matter in issue shall be decided by the Commissioner/ Director of Geology and Mining. In case the registered holder /lessee is not satisfied with decision of the Director of Geology and Mining, the matter shall be refereed to the State Government.

7. The registered holder/lessee shall abide by the conditions laid down in the payment of wages Act, 1936 (central Act Iv of 1936), Minimum Wages Act 1948 and Rules 1950, the Mines Act, 1952 (Central XXX V of 1952) the Indian Explosive Act, 1884. (Central Act IV) and Mines and Mineral (Development and Regulation) Act 1957 and the rules and regulations made thereunder.

8. The lessee shall comply with the provisions of the labour laws applicable to quarrying. Any contravention of the provisions shall attract legal proceedings of the appropriate authority.

Registered holders

DISTRICT COLLECTOR,
KRISHNAGIRI.

For EVERKI...

LESSEE

Managing Partner/Partner.

Sub-Registrar

9. To put up boundary pillars and to effectively fence off the same demised pieces of land from the adjoining lands and to keep the fences in good repairs and conditions during the period of lease.

10. The lessee shall not assign lease or part with the possession of the said lands or any part thereof for the whole or any part of the said term without previous permission in writing to the Government.

11. The lessee should not engage child labour in the quarrying activities.

12. That this lease may be terminated in respect of whole or any part of the promises by six months notice in writing on either side.

13. The lessee shall erecte fence at his own cost in between the adjacent poramboke lands and the leased out area and if any fault occur the lessee must held responsible for that ant abide by the action taken by the Government.

14. Anticipated seigniorage for the minerals to be quarried from the demised land is Rs. 48,70,29,356/- (Rupees fourty eight crores seventy lakhs twenty nine thousand three hundred and fifty six only) area assessment of Rs. 19,170/- (Rupees ninteen thousand and one hundred seventy only) and security deposit amount of Rs. 40,000/- were taken into account for the purpose of calculation of stamp duty.

15. The lease period starts from the 28th day of May 2018 and ends on the 27th day of May 2038.

16. The registered holder/ lessee shall put up boundary pillars and to effectively fence off the same demised pieces of land from the adjoining lands and to keep the fences in good repairs and condition during the entire period of lease.

17. The registered holder/ lessee shall not assign lease or part with the possession of the said lands or any part thereof for the whole or any part of the said term without previous permission in writing to the Government.

Registered holders

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DISTRICT COLLECTOR,
KRISHNAGIRI.

For EVERSHINE S...

LESSEE

Managing Partner, Partner.

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Sub-Registrar

21. Special Conditions:

(i) A safety zone of 7.5 meters should be left out for the adjacent patta lands.

(ii) A safety distance of 10 meters should be left out for the Parai Poramboke situated in S.F No. 344

(iii) A safety zone of 50 meters should be left out for the Oni situated in S.F No. 350 and 351.

(iv) A safety zone of 50 meters should be left out for the E.B. line passing north-south direction is situated at a distance of 39 meters from the Eastern boundary of applied area in S.F No. 347/2.

(v) A safety zone of 50 meters should be left out for the agricultural well and a E.B. line passing north-south direction is situarted at the distance of 35 meters from the western boundary of applied area in s.F No. 347/5.

(vi) No Hindrance,shall be caused to the adjacent pattadars lands and to the Government parai poramboke lands while quarrying and transportation of granite.

(vii) Blasing of rocks and transportation of vehicles carrying granite should not carried out from 6 PM to 6AM.

(viii) The Conditions mentioned in G.O (Ms) No. 79 Industries Department dated 06.04.2015 should be compled with.

(ix) Environment Clearance should be obtained from the State Level Environment Impact Assessment Authority in respect of the subject area as per the orders of the Hon'ble Supreme Court of India, dated 27.2.2012 in I.A.No. 12-13/2011 in SLP © No. 19629/2009 and office Memorandum No. L. 11011/47/2011-1A II (M), dated 18.5.2012 of the Ministry of Envrionment & Forests, Government of India and as per Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959.

(x) The lessee shall strictly adhee to the statutory and safety requirements.

(xi)) The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.

(xii) 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.

Registered holders

For EVERSHINE [illegible]

LESSEE

Managing Partner Partner.

DISTRICT COLLECTOR,
KRISHNAGIRI.

(xiii) The lessee grantee shall submit scheme of mining: mine closure plan and other statutory requirements within the time stipulated for submission of the above as per rules.

(xiv) The lessee should comply the instructions issued in Government letter No. 12789/MMB2/2002-7 Industries Department dated 9.1.2003.

(xv) The lessee should strictly adhere all the conditions imposed by the Chairman/District Collector, District Environment Impact Assessment Authority,Krishnagiri District in his letter No. 36/DEIAA-KGI/EC No. 25/2018 Dated 27.02.2018.

22. Conditions:

(1). The date of commencement of the period of lease shall by the date on which the agreement is executed.

(2). The lessee shall pay seigniorage or dead rent whichever is more in respect of the actual quantity of granite removed at the rate prescribed from time to time in Appendix-II of the Tamil Nadu Minor Mineral Concession Rules, 1959.

(3). The lessee should keep correct accounts showing the quantities and other particulars of all minerals obtained from the lands permitted to quarry.

(4).The lessee should also allow any officer authroized by the District Collector or any officer authorised by him in this behalf or any other officer authorised by the State Government in this behalf to inspect the area and verify records and accounts and furnish such information under the terms as may be required by them.

(5). The lessee shall carry out the quarrying operations in a skilful, scientific systematic manner keeping in view the proper safety of the labour onservation of minerals and preservation of enviornment ecology.

(6). The lessee shall allow any officer authorised by the District Collector and Director of Geology and Mining to enter upon the area and inspect for the purpose mentioned in conditions 3 and 5 above and also carry out the directions issued to the satisfaction of the above said authorities.

(7). No quarrying activites connected there to shall be done before the execution of the agreement and registration is at the cost of the lessee.

(8). No hindrance shall be caused to the adjoining pattadars or public.

(9). The lessee should restrict his mining operations strictly within the permitted area as defined in the sketch.

Registered holders

For EVERKING C...

LESSEE

Managing Partner, Partner.

DISTRICT COLLECTOR,
KRISHNAGIRI.

(10). The lessee should maintain, at his cost proper signboards indicating the survey numbers, years of lease, name of the lesseholder and lease period to the satisfaction of the District Collector and Commissioner/ Director of Geology and Mining and maintain it all time at the quarry site.

(11). No quarrying shall be made within a distance of 7.5 mts of the boundaries of the permitted area.

(12). The lessee should make his own arrangement to form the approach road from the public road to the place of his quarry.

(13). The lessee shall strictly adhere to the statutory and, safety requirements.

(14). The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.

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

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

(17). That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

23. Conditions imposed by the District Environment Impact Assessment Authority.

I. i) The Environmental Clearance is granted to mining of grey granite for the production quantity of 52459 Cu.m of Grey Granite for the period of 5 years from the date of execution of the mining lease period.

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ii) The approved quantity of Grey Granite to be quarried = 52459 cbm

iii) Depth of mining permitted = 30mts (including topsoil and burden) from a period of 5 years).

II. A. Conditions to be complied before commencing quarrying operations:-

(1). The lessee has to obtain land use classification as industrial use before issue/ renewal of mining lease.

(2). NOC from the Standing committee of NBWL shall be obtained, ifprotected areas are located within 10km from the proposed project site.

(3). The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.

(4). 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.

(5) 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.

(6). The proponent shall ensure that First Aid Box is available at site.

(7). The excavation activity shall not alter the natural drainage pattern of the area.

(8). The Excavated pit shall be restored by the project proponent for useful purposes, IN this regard, the proponent shall deposit a sum of Rs. 5,00,000/- (Rupees Five lakshs only) in the name of District Collector Krishnagiri in the form of fixed deposit . The said fixed deposit. Will be refunded after restoration.

(9). The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.

(10). The quarrying operation shall be restricted between 7AM and 5 PM.

(11). 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.

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(12). A minimum distance of 15 mts. From any civil structure shall be kept from the periphery of any excavation area.

(13). 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.

(14). The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.

(15). Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.

(16). Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.

(17). The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.

(18). Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.

(19). A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.

(20). The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009. (GLC = Ground Level Concentration), (NAAQ= Noise and Ambient Air Qualtity).

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(22). The following measures are to be implemented to reduce Noise Pollution

(i). Proper and regular maintenance of vehicles and other equipment.

(ii). Limiting time exposure of workers to excessive noise.

(iii). The workers employed shall be provided with protection equipment and earmuffs etc.

(iv). Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

(23). Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.

(24). Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.

(25). Rain water harvesting to collect and utilize the entire water falling in land area should be provided by construction of a storage tank with a capacity of 5,00,000 litrs and the rain water harvested in the entire quarry area should be stored in it and used for the quarry purpose like dust prevention, wet drilling, providing water for green belt etc.

(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.

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(29). Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.

(30). Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(31). Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be letinto 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 beof sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season. Photographs of the silt trap should be furnished before commencing quarry operation.

(32). The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, that the ground water is getting depleted due to the quarring activity, necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Dharmapuri shall monitor.

(33). No tree-felling shall be done in the leased area, except only with the permission from competent Authority.

(34). To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution and it should be monitor by the District Environmental Engineer, TNPCB. Hosur on yearly basis.

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DISTRICT COLLECTOR,
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(35). It shall be ensured that the total extent of nearby quarries located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.

(36). It shall be ensured that there is no habitation is located within 500 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site

(37). Ground water quality monitoring should be conducted once in 3 Months.

(38). Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.

(39). Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF,GOI once in three months.

(40). Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF , GOI periodically once in six months.

(41). Bunds to be provided at the boundary of the project site and it should be properly maintained.

(42). 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.

(43). At least 10 Neem trees should be planted around the boundary of the quarry site.

(44). Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.

(45). The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity

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(46). The Project Proponent shall provide solar lighting system to the nearby villages

(47). The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.

(48). Rainwater shall be pumped out Via Settling Tank only

(49). Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.

(50). As per MoEF & CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry &Wild Life angle including clearance from obtaining committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.

(51). 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.

(52) Safety requipments to be provided to all the employees.

(53) Safty distance of 50 mts has to be provided incase of railway reservoier canal/ Odai.

(54) The Assistant / Deputy Director Department of Geology and Mining shall ensure that the proponent has engaged the blaster with valid Blasting license / certificate obtained from the competent authority before execution of mining lease.

(55) 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.

(56) 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.

(57) The proponent shall furnhish the date obtained from the Public Works Department regarding the details of ground water table in the quarry site.

Registered holders

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KRISHNAGIRI.

For EVERKING ...

LESSEE

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(58) The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh case before execution of mining lease.

(59) The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to the existing activity before execution of mining.

(60) Heavy earth machinery equipments if utilized, after getting approval from the competent authority.

(61) The Environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur.

(62) The Assistant Director Public Works Department, Ground Water Division Dharmapuri shall monitor whether the quarrying activity is carried out above the ground water level on yearly basis.

(63) NOC for sanitary certificate shall be obtained from the Deputy Director of Health Services, Krishnagiri.

(64) Yearly medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Krishnagiri,

(65) Closed circuit camera should be erected at the quarry site and the passage of vehicles in and out of the quarry should be recorded and the footage of the recordings of the camera should be maintained and should be produced before the enforcing officials when ever called for.

(66) Vehicles used for transportation of quarried materials should be fitted with GPS and monitored.

(67) Pit Mouth register should be maintained in on line.

(68) Auditor report on the annual turnover amount should be submitted to the District Collector within one month from the end of the financial year.

(69) 02.5% of the turn over amount should be utilized for the CSR activity after consultation with the District Collector.

B. General Conditions:

(1). EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.

(2). The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.

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Registered holders

DISTRICT COLLECTOR,
KRISHNAGIRI.

For EVEREST

LESSEE

Managing Partner/Partner

. No change in mining technology and scope of working should be made thout prior approval of the SEIAA, Tamil Nadu.

). 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.Registered holders.

(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.

Registered holders

DISTRICT COLLECTOR,
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LESSEE

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(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 obsolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.

(17). This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.

(18). The DEIAA, Krishnagiri may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.

(19). The DEIAA, Krishnagiri may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this DEIAA.Krishnagiri 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.

Registered holders

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KRISHNAGIRI.

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LESSEE

For EVERKING GRANITE

Managing Partner/Partner.

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(21). The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules,2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

(22). Any other conditions stipulated by other Statutory/Government authorities shall be complied.

24. The lessee should get the consent for operation from the Tamil Nadu Pollution Control Board before the commencement of quarrying operation

25. The lessee should sent the notice for opening of the quarry to the Director of Mines safety, Bangalore.

26. Quarrying operation should be carried out only after appointing Mines Manager/Mines Mate and Foremen.

27. At any cost the blasting activity should be carried out under the Supervision of Mines Mate.

28. In any accident occur in the quarry area the lessees should give intimation to the Director of Mines safety Bangalore and District Collector, Krishnagiri at once and lessee is solely responsible for any violation.

29. The conditions imposed by the TNPCB in the consent order should be adhered without any ommission.

30. The Environmental clearance and the consent of the TNPCB should be renewed periodically without any lapse.

31. If any illegal quarrying is found in the area Overa an extent of 3.19.5 Hectors in S.F. Nos. 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C, 348/6D1 of Jagadevipalayam Village, Hosur Taluk, Krishnagiri District before the date of execution of lease deed, this lease deed is liable to be cancelled and criminal action will be initiated.

Registered Letter

DISTRICT COLLECTOR,
KRISHNAGIRI

For SYCHEM INDIA

LESSEE

Managing Partner/Partner

32. If the quarry area is situated within 10 km distance from any protected areas NOC from the Standing committee of NBWL should be obtained before commencing the quarry operation.

33. If the lease holder wants to quarry more than the quantity permitted in the environmental clearance within the lease period, modified mining plan scheme and Environment Clearance for the additional quantity should be submitted.

THE SCHEDULE

TALUK : BARGUR

VILLAGE : JAGADEVIPALAYAM

Sl. No.	Survey Field number	Extent Leased out in Hectares	Boundary			
			North S.F No.	East S.F No.	South S.F No.	West S.F No.
1.	347/1	0.33.0	348/6C, 348/6D	348/2	347/2	346
2	347/2	0.65.0	348/6D1, 348/6D2	347/3	347/4, 347/5	347/1, 346
3	347/4	0.23.5	347/2	347/5	347/5	346
4	347/5	1.06.0	347/2,4,346 (P)	350,351	276/1E	276/1E
5	348/4	0.32.5	344	348/3, 348/6B1	348/6, 6B1	345
6	348/5	0.20.0	348/4	348/6B1, 6D1	345/6C, 345/6D1	345
7	348/6B1	0.16.2	348/4	348/6B2, 348/6D2	348/6D1, 348/6D2	348/5
8	348/6C	0.10.5	348/5	348/6D1	347/1	345, 346
9	348/6D1	0.13.3	348/5, 6B1	348/6D2	347/1, 347/2	348/6C,5
	Total	3.19.5				

Registered holders

DISTRICT COLLECTOR,
KRISHNAGIRI.

For EVERKING GRANITE

LESSEE

Managing Partner/Partner.

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IN WITNESS where of 1) E. Jagadeesan S/o. Eganathan, No. 5/50 Thiruvalluvar Nagar, Krishnagiri 635 001 2) S.S Jameeluddin S/o Salavudeen, Muslim D.No. 1/449, TNHB, Phase-II Krishnagiri 635 001 "the registered holders", TVl. Everking Grnaite, having administrative Office at No. 1/161, TNHB, Phase-II, Krishnagiri 635 002 represented by its Authorised signatory Managing partner Thiru S.S. Jamaludeen, S/o Salavudeen "the Lessee" and Thiru C. KATHIRAVAN, I.A.S the Collector of Krishnagiri District acting for and on behalf of and by the order and direction of the Govermor of Tamil Nadu have hereunto set their hands.

Jameel

Registered holders

23/1/25

DISTRICT COLLECTOR,
KRISHNAGIRI.

For EVERKING GRANITE

LESSEE Jameel

Managing Partner/Partner.

Signed by the above named
in the presence of

1) V. Jaya Prakash
S/o Venkatesh
50? HIG New Temple land Hudco I Phase
Hosur 635109

2) C. Dhandapani S/o Chinnasamy
1/442 Sathya Sai Nagar
TNHB, IInd phase,
Krishnagiri - 635002

Signed by the above named
in the presece of

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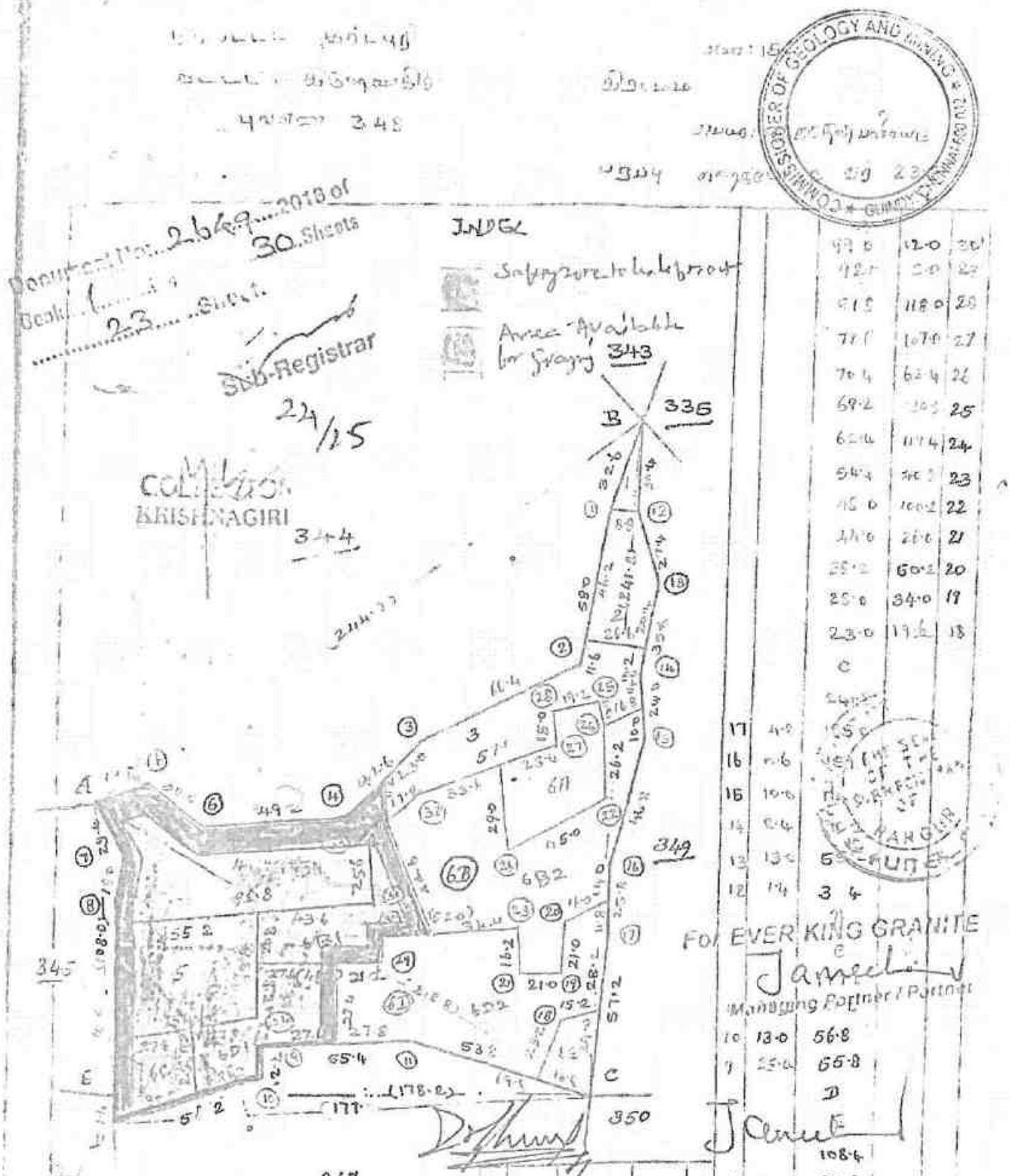
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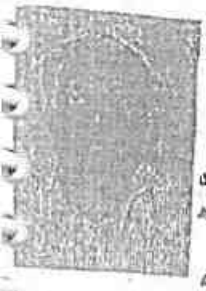
Safety zone to be left out
Area Available for Quarrying
Sub-Registrar
24/1/15
COLLECTOR
KRISHNAGIRI
FOREVER KING GRANITE
Managing Partner / Partner
DEPUTY DIRECTOR
Department of Geology and Mining
Collectorate, Krishnagiri
REVENUE INSPECTOR
BARGUR
-55-

347/1	0.55.0	0.81½
2	0.65.0	1.60½
4	0.23.6	0.58
5	0.6.0	2.62
	2.27.5	5.62

இந்திய அரசாங்கம்
Government of India



Syed Sha Jameeluddin

பிறந்த நாள்/DOB: 15/06/1971
ஆண்மை / Male

4404 3992 4873

ஆதார் - சாதாரண மனிதனின் அதிகாரம்

Unique Identification Authority of India

Address: S/O: Syed Shah Salahuddin, NO 1/449, TNHB PHASE I, SATHYASAI NAGAR, Krishnagiri, Krishnagiri, Tamil Nadu, 635002

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DIRECTORATE OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032 *

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

S S JAMEELUDDIN
SYED SHA SALAUDDIN
15/06/1971
Permanent Account Number
AJNPJ2736N

Signature

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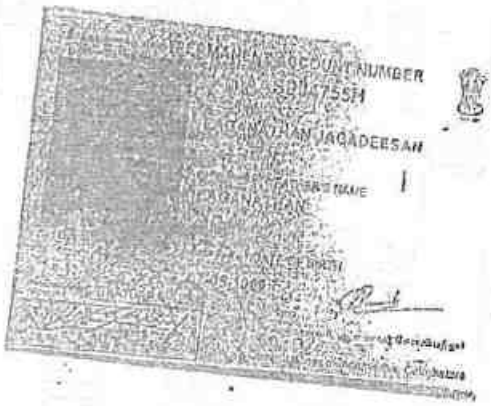

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Sub-Registrar

THE SEAL OF THE SUBREGISTRAR OF BARGUR

இந்திய அரசாங்கம்
Unique Identification Authority of India
Government of India

பதிவு எண்/Enrollment No.: 2043/50510/04220

To
Dhandapani Chinnasamy
தண்டபாணி சின்னசாமி
S/O: Chinnasamy
12 F
SHANTHI NAGAR
1st CROSS
Krishnagiri
Krishnagiri,Krishnagiri
Tamil Nadu - 635001
9786633456

11/06/2015

KH447212675FT
44721267

உங்கள் ஆதார் எண் / Your Aadhaar No.:

7729 8134 9206

ஆதார் - சாதாரண மனிதனின் அதிகாரம்

இந்திய அரசாங்கம்
Government of India

தண்டபாணி சின்னசாமி
Dhandapani Chinnasamy

பிறந்த நாள் / DOB: 17/02/1964
ஆண்/Male

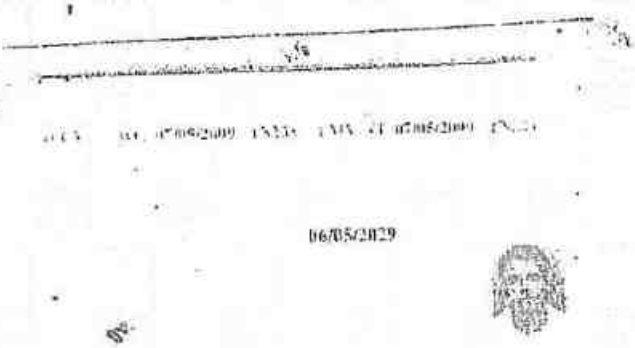
7729 8134 9206

ஆதார் - சாதாரண மனிதனின் அதிகாரம்

TN23Y20090002274
THOUFEEQ SHARIFF R
RAHMAN SHARIFF M A

10,NARAYANASAMY REDDY ST
JOLARPET TIRUPATTUR TK VLR DT

10/04/1988



06/05/2029

Document No:...2849....2018 of
Book.....1.....30.....Sheets
.....27.....

Sub-Registrar

COMMISSIONER OF GEOLOGY AND MINING

From
Thiru G. Prathiravan, I.A.S.,
District Collector,
Krishnagiri.

To
The Sub Registrar,
Bargur.

Roc 500/2016 (Mines-I) dated 20.07.2018.

Sir,

Sub: Mines and Minerals – Minor Mineral – Grey Granite - Krishnagiri District – Bargur Taluk – Jagadevipalayam Village – Patta land in S.F Nos. 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C and 348/6D1 - over an extent 3.19.5 Hect. quarry lease for Grey Granite granted to Tvl. Everking Granite, No. 1/161, TNHB, Phase-II, Krishnagiri 635 002 – Lease deed agreement executed - sent for registration – regarding.

Ref: G.O (3D) No. 20 Industries (MME-2) Department dated 22.03.2018.

In the order cited, the Government have granted a quarry lease for Grey /Granite over an extent of 3.19.5 Hect. in S.F Nos. 347/1 (0.33.0), 347/2 (0.65.0), 347/4 (0.23.5), 347/5 (1.06.0), 348/4 (0.32.5), 348/5 (0.20.0), 348/6B1 (0.16.2), 348/6C (0.10.5) and 348/6D1 (0.13.3) of Jagadevipalayam Village of Bargur Taluk, Krishnagiri District for a period of twenty years from the date of execution of lease deed under the provisions of Rule 19 -A of the Tamil Nadu Minor Mineral Concession Rules, 1959 to Tvl. Everking Granite, No. 1/161, TNHB, Phase-II, Krishnagiri 635 002 . The lease agreement was executed on 28.05.2018 and the lease period is twenty years from 28.05.2018 to 27.05.2038.

The lessee Tvl. Everking Granite, No. 1/161, TNHB, Phase-II, Krishnagiri 635 002 have been instructed to register the lease deed agreement at the Sub Registrar office at Bargur.

In this connection it is informed that the stamp duty worked out on the basis of the Anticipated seigniorage fee calculated on the total of 209840 CBM of Grey Granite (as per approved mining plan) to be removed during the entire lease period of twenty years, security deposit and area assessment remitted by the lessee is as detailed below:

Document No: 946/18 ..... 2018 of
Book ..... 1 ..... 30 ..... Sheets

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Sub-Registrar

THE SEAL OF THE SUBREGISTRAR OF BARGUR

R/Bargur/Book-1/2649/2018

COMMISSIONER OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032 *

CERTIFICATE UNDER SECTION 42 OF THE INDIAN STAMP ACT 1899

S.No 1195 of 2018

I hereby certify that a sum of ₹ 57,46,755/- (Rupees Fifty Seven Lakh Fourty Six Thousand Seven Hundred and Fifty Five only) on account of deficit stamp duty has been levied under section 41 of the Stamp Act in respect of this instrument from Mr. E JAGADEESAN residing at No.5/50, Thiruvalluvar Nagar, Krishnagiri, Tamil Nadu, India, 635001.

Sub Registrar: Bargur
Date: 10/08/2018

Signature of Sub Registrar and Collector under Section 41 of the Indian Stamp Act

GOVT OF TAMIL NADU * THE SEAL OF SUBREGISTRAR OF BARGUR *

Presented in the office of the Sub Registrar of Bargur and fee of ₹ 20,420/- paid at [illegible] on the 10/08/2018 by

Left Thumb

Additions as per recitals of document

I have satisfied myself as to the execution of the instrument by Mr. C KATHIRAVAN, Krishnagiri, Krishnagiri, Tamil Nadu, India, 635001 (Krishnagiri) who is exempted from personal appearance under section 88(1) of the registration act.

Sub Registrar: Bargur

Claim admitted by

Left Thumb

Additions as per recitals of document

Document No: 2649 .....2018 of Book..... 1 .....Contains..... 30 Sheets .....29.....Short.

Sub-Registrar

GOVT OF TAMIL NADU * THE SEAL OF THE SUBREGISTRAR OF BARGUR *

R/Bargur/Book-1/2649/2018

Claim admitted by Left Thumb  	For EVER KING GRANITE Managing Partner / ~~Partner~~ Additions as per recitals of document
Claim admitted by Left Thumb  	For EVER KING GRANITE Managing Partner / Partner Additions as per recitals of document

Identified By

1. Mr. THOUFEEQ SHARIFF Son of RAHMAN SHARIFF No.10, Narayanasamy Reddy Street, Jolarpet, Tirupattur, Vellore , Tamil Nadu, India, 635305.

2. Mr. C.DHANDAPANI Son of CHINNASAMY No.12F, Shanthi Nagar, Ist Cross, Krishnagiri, Tamil Nadu, India, 635001.

10th day of August 2018

psankar palanivel
Sub Registrar
Bargur

Registered as Number R/Bargur/Book-1/2649/2018.

Date: 10/08/2018
Bargur

psankar palanivel
Sub Registrar

Document No:...2649...2018 of
Book.....1.....Contains.....30 Sheets
.....30.....Sheet.

Sub-Registrar

S. SURIYAKUMAR
M.Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

DEPARTMENT OF GEOLOGY AND MINING

From
Dr. R.Palaniswamy, I.A.S.,
Commissioner of Geology and Mining,
Industrial Estate,
Guindy, Chennai - 600 032.

To
The Additional Chief Secretary to Government,
Industries Department,
Secretariat,
Chennai - 600 009.

COMMISSIONER OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032

Lr. No. 992/MM5/2017, dated 22.01.2018.

Sir,

Sub: Mines and Minerals – Grey granite – Krishnagiri District – Bargur Taluk – Jagadevpalayam Village S.F.Nos.347/1,347/2,347/4,347/5,348/4,348/5,348/6B1,348/6C,348/6D1 – over an extent of 3.19.5 hects. of patta land – Quarry lease application preferred by Tvl.Everking Granite, – precise area communicated by the Government - Approved Mining Plan called for – Mining Plan submitted for approval – approval accorded – Reg.

Ref:
1) Quarry lease application preferred by Tvl.Everking Granite, dated 07.09.2016.
2) The District Collector, Krishnagiri letter Roc. No.500/2016/Mines-1 dated: 30.01.2017.
3) This office recommendations made in File No. 992/MM5/2017 Dated 01.03.2017.
4) Government letter No.3809/MME.2/2017-1 dated 06.09.2017.
5) Tvl.Everking Granite, Krishnagiri, letter dated .12.2017.
6) The Deputy Director, Geology and Mining, Krishnagiri letter Roc.No.500/2016/Mines-1 dated.05.01.2018.

Kind attention is invited to the references cited.

2) The Government in the reference 4th cited have communicated the precise area to the applicant Tvl.Everking Granite with a direction to produce an Approved Mining Plan in respect of the area applied for grant of quarry lease for quarrying Grey granite over an extent of 3.19.5 hects. of patta lands in S.F.Nos.347/1,347/2,347/4,347/5,348/4,348/5,348/6B1,348/6C,348/6D1 – of Jagadevipalayam Village, Bargur Taluk, Krishnagiri District for a period of 20 years as per sub-rule (13) of Rule 19-A of Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating the conditions stipulated in the Government letter dated 06.09.2017.

3) In response to the precise area communication, vide reference 5th cited, the applicant has submitted 6 copies of draft mining plan duly prepared by the Recognized Qualified Person for approval.

4) The Deputy Director of Geology and Mining, Krishnagiri in the reference 6th cited has forwarded the draft mining plan for approval and stating that the mining plan has been verified with reference to field conditions and the details such as Geological Reserves, Mineable Reserves, year wise production and development program have been incorporated in the draft mining plan. Further the special condition imposed in the precise area-communication are also incorporated in the mining plan. Further it is also reported that there are no existing quarry is situated within the radial distance of 500 meters from this proposed area. But one more proposed area having an extent of 1.56.5 Hects situated within the radial distance of 500 mts from this proposed area. He has further reported that, in the draft mining plan the total geological reserves in the applied area is 3.98,523 Cbm. The mineable reserves is 1,19,557 Cbm and the total recoverable reserves @ 30% recovery is 73,976 Cbm. to assumed depth of 30 mts. The proposed production of the granite for the 1st five years lease period is estimated as 52,459 Cbm up to depth of 6 mts.

5) Further, in the technical report of the Deputy Director (G&M), Krishnagiri, the inferred reserves are calculated for a depth of 20 mts. In the draft mining plan, inferred reserves are calculated for a depth of 30 mts. In this regard, the Deputy Director (Mines) has stated that in draft mining plan the mineable reserves are calculated after left out the area locked in benches and hence he has justified that the reserves estimated in the draft mining plan may be accepted.

6) The draft mining plan submitted in respect of the precise area communication and the report of the Deputy Director of Geology and Mining, Krishnagiri have been examined with reference to the provisions of Rule 12, 13 and 15 of Granite Conservation and Development Rules, 1999 and the followings are observed:-

i) All the conditions stipulated in the Government letter No.3809/MME.2/2017-1 dated 06.09.2017 have been incorporated in the mining plan.

ii) A safety distance of 50 meters left out for the E.B. line passing north –south direction is situated at a distance of 39 meters from the Eastern boundary of applied area in S.F.No.347/2. have been demarcated and shown in the mining plan.

iii) A safety distance of 50 meters left out for the agricultural well and E.B. line passing north –south direction is situated at a distance of 35 meters from the western boundary of applied area in S.F.No.347/5. have been demarcated and shown in the mining plan.

iv) A safety distance of 7.5 meters for the adjacent patta lands have been demarcated and shown in the mining plan.

v) The GPS readings for the entire boundary pillars of the area have been incorporated and shown in the mining plan.

vi) The total geological reserves in the applied area is 3,98,523 Cbm and the mineable reserves is estimated as 1,19,557 Cbm.

vii) The total quantity of recoverable reserves has been estimated as 73,976 Cbm with a recovery of 30% for a depth persistence of 30 mts.

viii) The total quantity of production for the first 5 years has been estimated as 52,459 cbm for a depth persistence of 6 mtrs.

6) In the light of the above, in exercise of the powers conferred under Rules 12,13 and 15 of Granite Conservation and Development Rules, 1999 read with G.O.Ms.No.87, Industries (MMC1) Department Dated 22.2.2001, I hereby approve the mining plan subject to the following conditions:-

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

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

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

iv) A safety distance of 7.5 meters for the adjacent patta lands should be left out and should not cause any hindrance to them while quarrying and transportation of granite

v) A safety distance of 10 meters should be left out for the parai poramboke situated in S.F.No.344.

vi) A safety zone of 50 meters should be left out for the Oni situated in S.F.Nos.350 and 351.

A safety distance of 50 meters Should be left out for the E.B. line passing north –south direction and situated at a distance of 39 meters from the Eastern boundary of applied area.

A safety distance of 50 meters Should be left out for the agricultural well and E.B. line passing north –south direction and situated at a distance of 35 meters from the western boundary of applied area.

ix) No hindrance shall be caused to the adjacent pattadars lands and to the Government parai poramboke lands while quarrying and transportation of granite.

x) The conditions mentioned in G.O.(Ms)No.79 Industries Department dated 06.04.2015 should be complied with.

xi) The applicant should fence the lease granted area with barbed wire before the execution of lease deed as follows.

- The pillar post shall be firmly grounded with concrete foundation of height not less than 2 mts with a distance between two pillars shall not be more than 3mts.

xii) The proposed area for quarrying should be demarcated by using DGPS before executing the lease deed as follows:

- The applicant shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan and digitalized mapping should be submitted to the District Mines Office.

xiii) The lessee shall strictly adhere to the statutory and safety requirements.

xiv) Waste materials generated during quarrying operations shall be dumped within the lease applied area as earmarked in the mining plan for this purpose.

xv) Quarrying operations and production of granite blocks shall be carried out as per the Approved Mining Plan.

xvi) Blasting and production of granite blocks should not be carried out in the from 6 P.M to 6 A.M.

xvii) Environmental Clearance should be obtained from the State Level Environment Impact Assessment Authority in respect of the subject area as per the orders as per the orders of the Hon'ble Supreme Court of India, Dated 27.02.2017 in I.A No. 12-13/2011 in SLP(C) No. 19629/2009 and Office Memorandum No. L.11011/47/2011-1A II(M), Dated 18.05.2012 of the Ministry of Environment & Forests, Government of India and as per Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 2011.

xviii) A green belt should be constructed with 500 tree plantations around the

quarry area and should be maintained by the applicant firm in good condition.

xix) Scheme of mining along with the progressive mine closure plan and other statutory requirements shall be submitted within the time stipulated in the rules.

xx) The District Collector, Krishnagiri shall obtain a sworn–in-affidavit from the applicant to adhere the above conditions scrupulously before execution of lease deed and also ensure that the instructions issued in Government letter 12789/MMB2/2002-7, Industries Department, dated 09.01.2003 are complied with.

A copy of the Approved Mining Plan is sent herewith for further necessary action.

Encl: Approved mining plan.

Sd/-R.Palaniswamy
Commissioner of Geology and Mining

Forwarded / By Order

22/1/18

Deputy Director

22/1/2018

To

1) The Managing Partner
Everking Granites
No.1/161,T,N,H,B Phase-II
Krishnagiri,Tamil Nadu
Pincode-635002

2) The District Collector, Krishnagiri (with AMP)

3) The Directorate of Mines Safety,
Chennai-40 (with AMP).

S. SURIYAKUMAR
M Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

DeepaE:\MM5\992-MM5-2017-_Mining_Plan__Everkng_mining_plan_-_Copy_dated 22.01.2018.doc

ANNEXURE - I

Industries (MME.2) Department,
Secretariat, Chennai – 600 009.

Letter No.3809/MME.2/2017 - 1, Dated 06.09.2017

From
Thiru. Atulya Misra, I.A.S.,
Principal Secretary to Government

To
The Managing Partner,
Everking Granites,
No.1/161,T.N.H.B,Phase-II
Krishnagiri – 635 002.

Sir,

Sub: Mines and Minerals – Minor Mineral – Grey Granite – Krishnagiri District, Bargur Taluk, Jegadevipalayam Village- S.F. Nos.347/1 (0.33.0), 347/2 (0.65.0), 347/4 (0.23.5), 347/5 (1.06.0), 348/4 (0.32.0), 348/5 (0.20.0), 348/6B1 (0.16.2), 348/6C (0.10.5) and 348/6D1 (0.13.3) - Over an extent of 3.19.5 Hectares of Patta lands – Quarry Lease Application preferred by Tvl.Everking Granites – Approved Mining Plan and Environment Clearance Certificate – Called for – Reg.

Ref: 1. Your Quarry Lease Application dated: 07.09.2016.
2. From the District Collector, Krishnagiri, Letter Roc.500/2016/Mines-1, dated: 30.1.2017 and 17.02.2017.
3. From the Commissioner of Geology and Mining, File No.992/MM5/2017, dated: 1.3.2017.

*****

I am directed to invite your attention to the references second and third cited wherein the District Collector, Krishnagiri and the Commissioner of Geology and Mining have recommended your quarry lease application for grant of quarry lease for quarrying Grey Granite over an extent of 3.19.5 hectares of patta lands in S.F.Nos. 347/1 (0.33.0), 347/2 (0.65.0), 347/4 (0.23.5), 347/5 (1.06.0), 348/4 (0.32.0), 348/5 (0.20.0), 348/6B1 (0.16.2), 348/6C (0.10.5) and 348/6D1 (0.13.3) of Jegadevipalayam Village, Bargur Taluk, Krishnagiri District for a period of 20 years under rule 19A of Tamil Nadu Minor Mineral Concession Rules, 1959.

(p.t.o.)

-62- -65-

2. In this connection, I am directed to request you to furnish an approved mining plan for the above said area by incorporating the following conditions to the Government through the Commissioner of Geology and Mining within a period of 3 months as per sub-rule (13) of Rule 19A of Tamil Nadu Minor Mineral Concession Rules, 1959. I am also directed to request you to obtain and produce Environment Clearance Certificate from State Level Environment Impact Assessment Authority (SEIAA) / District Environment Impact Assessment Authority (DEIAA) as per the orders of Hon'ble Supreme Court dated 27.02.2012 in IA No.12-13 of 2011 in SLP(C) No. 19629 of 2009 and Government of India, Ministry of Environment and Forest circular No.L-11011/47/2011-IA II (M), dated 18.05.2012 before granting quarry lease.

(i) A safety zone of 7.5 meters should be left out for the adjacent patta lands.

(ii) A safety distance of 10 meters should be left out for the Parai poramboke situated in S.F.No.344.

(iii) A safety zone of 50 meters should be left out for the Oni situated in S.F.Nos.350 and 351.

(iv) A safety zone of 50 meters should be left out for the E.B. line passing north - south direction is situated at a distance of 39 meters from the Eastern boundary of applied area in S.F.No.347/2.

(v) A safety zone of 50 meters should be left out for the agricultural well and a E.B. line passing north-south direction is situated at the distance of 35 meters from the western boundary of applied area in S.F.No.347/5.

(vi) No hindrance shall be caused to the adjacent pattadars lands and to the Government parai poramboke lands while quarrying and transportation of granite.

(vii) Blasting of rocks and transportation of vehicles carrying granite should not carried out from 6PM to 6AM.

(viii) The conditions mentioned in G.O.(Ms)No.79 Industries Department dated 06.04.2015 should be complied with.

(ix) The applicant firm should produce latest solvency certificate before the execution of lease deed.

(x) The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows:-

- The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.

- The applicant shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan.

(xi) Environment Clearance should be obtained from the State Level Environment Impact Assessment Authority in respect of the subject area as per the orders of the Hon'ble Supreme Court of India, Dated: 27.2.2012 in I.A. No.12-13/2011 in SLP(C) No.19629/2009 and Office Memorandum No.L.11011/47/ 2011-1A II(M), Dated: 18.5.2012 of the Ministry of Environment & Forests, Government of India and as per Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959.

(xii) The lessee shall strictly adhere to the statutory and safety requirements.

(xiii) The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.

(xiv) 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.

(xv) The lease grantee shall submit scheme of mining; mine closure plan and other statutory requirements within the time stipulated for submission of the above, as per rules.

(xvi) The District Collector, Krishnagiri shall obtain a sworn-in-affidavit from the appellant containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.12789/MMB.2/2002-7, Industries Department, Dated: 9.1.2003 are complied with.

Yours faithfully,

for Principal Secretary to Government

Copy to:
The Commissioner of Geology and Mining,
Guindy, Chennai – 600 032.

The District Collector,
Krishnagiri.

S. SURIYAKUMAR,
Recognised Qualified Person.
Reg No.RQP/MAS/013/87/A

S. SURIYAKUMAR
M.A.Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

ANNEXURE - V

தமிழ்நாடு TAMILNADU

H 313693

G. LATHA, B.Com.,
65/41A Ist Cross, Madras Road
KRISHNAGIRI-635001.
S.V.L. No. 3936/B1/2000

எண். 1507
நாள். : 22.2.08
பெயர்: Ever king Granite
முகவரி : Krishnagiri

THE PARTNERSHIP DEED
EVER KING GRANITE

This Deed of partnership is executed on this 1st March of 2008 by and between.

1. NAMES OF PARTNERS

(i). S.S. Jameeluddin aged about 36 years, son of Sri. S.S. Salauddin, No.449/1, New Housing Board, II Phase, Krishnagiri.

AND

(ii). E. Jagadeesan aged about 39 years, son of M. Eganathan, No. 5/50, I Cross, Tiruvalluvar Nagar, Krishnagiri.

Whereas the aforesaid parties have come together to carry on a business of dealing in granite processing and trading activities this deed has been executed. The terms and conditions of the partnership as agreed have been hereby set down in writing.

2. Date of Commencement:

The date of commencement of the partnership is 01.03.2008

3. Business of partnership:

The partnership shall carry on the business of processing and trading in granite Products. It can do Quarry operations, Cutting & polishing, export and such other business or businesses as the parties may from time to time determine.

Jamel

Jamel

-64-

தமிழ்நாடு TAMILNADU

G. LATHA, B.Com.,
65/41A Ist Cross, Madras Road
KRISHNAGIRI-635001.
S.V.L. No. 3936/B1/2000

எண். : 1508 H 313694
நாள். : 22.2.08
பெயர்: Ever king Granite
ஊர். : Krishnagiri

4. The name of partnership firm shall be " EVER KING GRANITE " and such other name or names as the parties may from time to time determine.

5. Place of Business:

The place of business shall be at 34/53, Chennai Road, I Cross, Periyasamy Street, Krishnagiri Tk & Dt, and/or such other places as the parties may from time to time determine.

6. Duration:

The partnership shall be at will.

7. Capital:

The Capital shall be contributed by the partners as and when funds are required by the firm. The funds accumulated in the capital accounts of the partners shall be considered as the capital of the partners.

8. Interest on Capital:

The capital amounts of the partners shall bear interest at 12 % per annum.

9. Sharing of Profits / losses:

Profit or Loss of the firm shall be divided among the partners equally.

10. Accounts:

The accounts of the partnership shall be closed once every year on March 31st and a Profit and Loss account and Balance sheet shall be prepared as of that date every year.

A Jamel MW

C

தமிழ்நாடு TAMILNADU

G. LATHA, B.Com.,
65/41A Ist Cross, Madras Road
KRISHNAGIRI-635001,
S.V.L. No. 3936/B1/2000

எண். 1509 H 313695
நாள். : 22.2.08
பெயர்: Everking Granite
கையொப்பம் : Krishnagiri

11. Borrowing powers:

The partners are free to borrow monies for the purposes of business from banks, financial and lending institutions and from others and for these purposes may designate one or more partners to negotiate and sign on behalf of the firm. All the partners shall jointly sign the loan documents. The partners individual loans shall not bind the firm.

12. Salary to the partners:

All the partners are working partners and are eligible for a monthly remuneration of Rs. 10,000/- (Rs Ten thousands only) per month.

13. Bank Accounts:

The partners may open accounts with banks and the banking operation shall be done by both the partners on Either Or Basis.

14. Letters, Parcles, VPPs, Registered Posts and bank instruments.

All the partners are authorized to receive the firm's Letters, parcels, VPPs, Registered Posts and bank instruments.

Jameel

D. Shanmugam

-66-

COMMISSIONER OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032 *

COMMISSIONER OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032 *

15. Variation Clause:

Any of the above clauses may be altered or varied or added to by common consent of the parties.

16. Arbitration:

All disputes arising out of this partnership shall be subject for arbitration

In witness hereof the parties have signed this out of mutual goodwill and consent

S.S. Jameeluddin

E. Jagadeesan

WITNESS:

1. K. Srinivasan S/O. V. Krishnan
   180, Laxman Rao St, Newpet, Krishnagiri
2. S. PETER LOUIS. S/O. R. Susai Muthu.
   15/15f, Indiranagar, Shanthinagar, Krishnagiri.

DOCUMENT PREPARED BY

S. SURIYAKUMAR,
Recognised Qualified Person,
Reg No.RQP/MAS/013/87/A

S. SURIYAKUMAR
M Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

அளவைப்படிவ. எண் 23

ANNEXURE - II

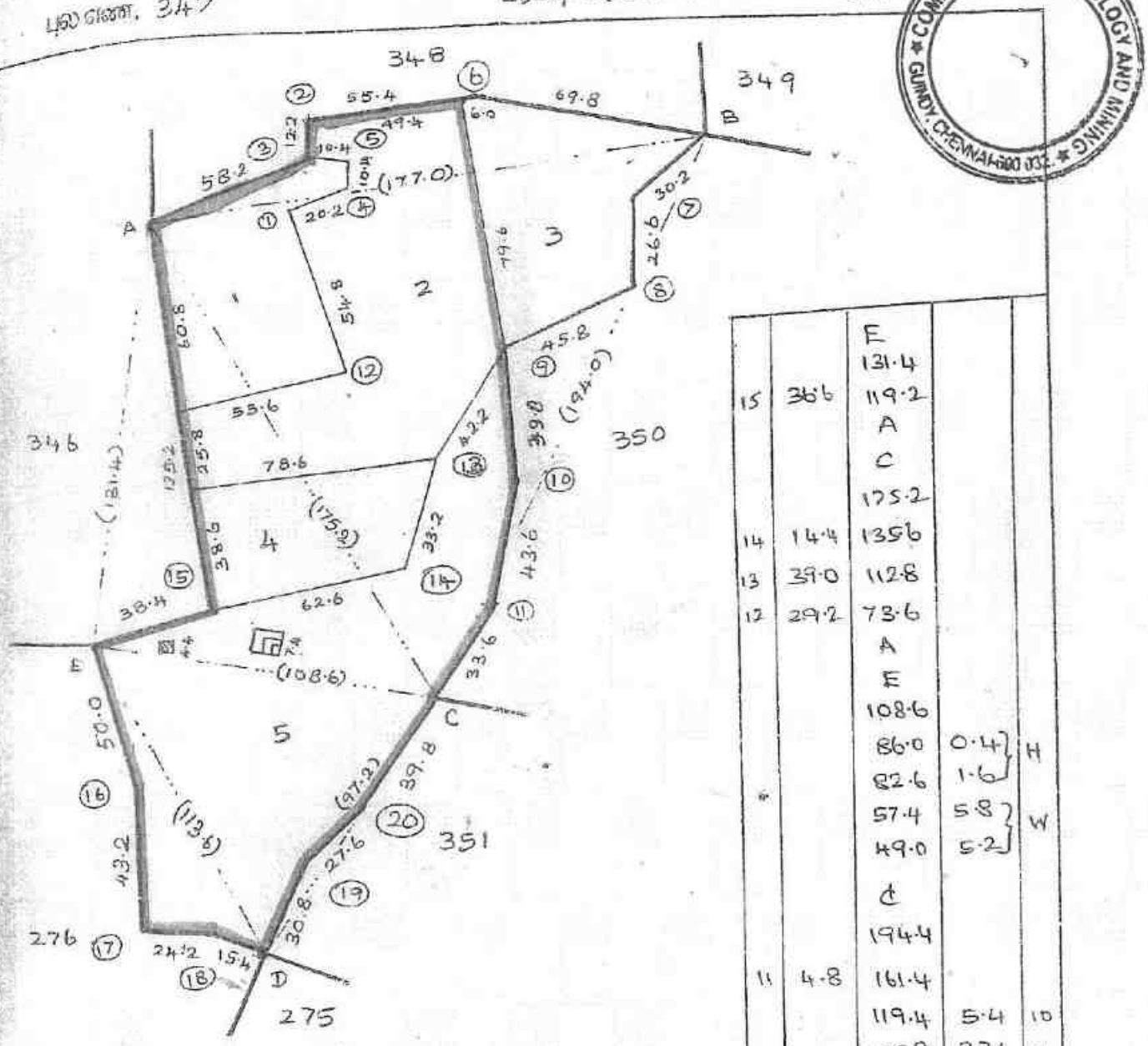
வட்டம். திருமயம்

கிராமம் { எண். 152
பெயர். மறைநாயகியாளையம்

வட்டம். திருமயம்

புல எண். 347

பரப்பு: ஹெக்டேர் 2 ஏர். 6



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		B			
		177.0			
		57.4	1.0	20	
6	23.2	111.4			
5	10.0	66.8			
		664	0.4	4	
		113.6			
3	13.0	56.8		18	
2	25.4	55.8		17	
		46.6	3.0	16	1
		A			

		C		
		97.2		
19	4.8	30.4		
		D		
		113.6		
		100.8	9.4	18
		87.8	30.2	17
		49.0	11.2	16
		E		

கணிம கற்கள் வெட்டி எடுக்க உரிமம் தொடரும் பகுதி.

புலஎண்	பரப்பு. அறைக்கோ	ஏக்கர்.
347/1	0.33.0	0.81½
2	0.65.0	1.60½
4.	0.23.5	0.58
5.	1.06.0	2.62
	2.27.5	5.62

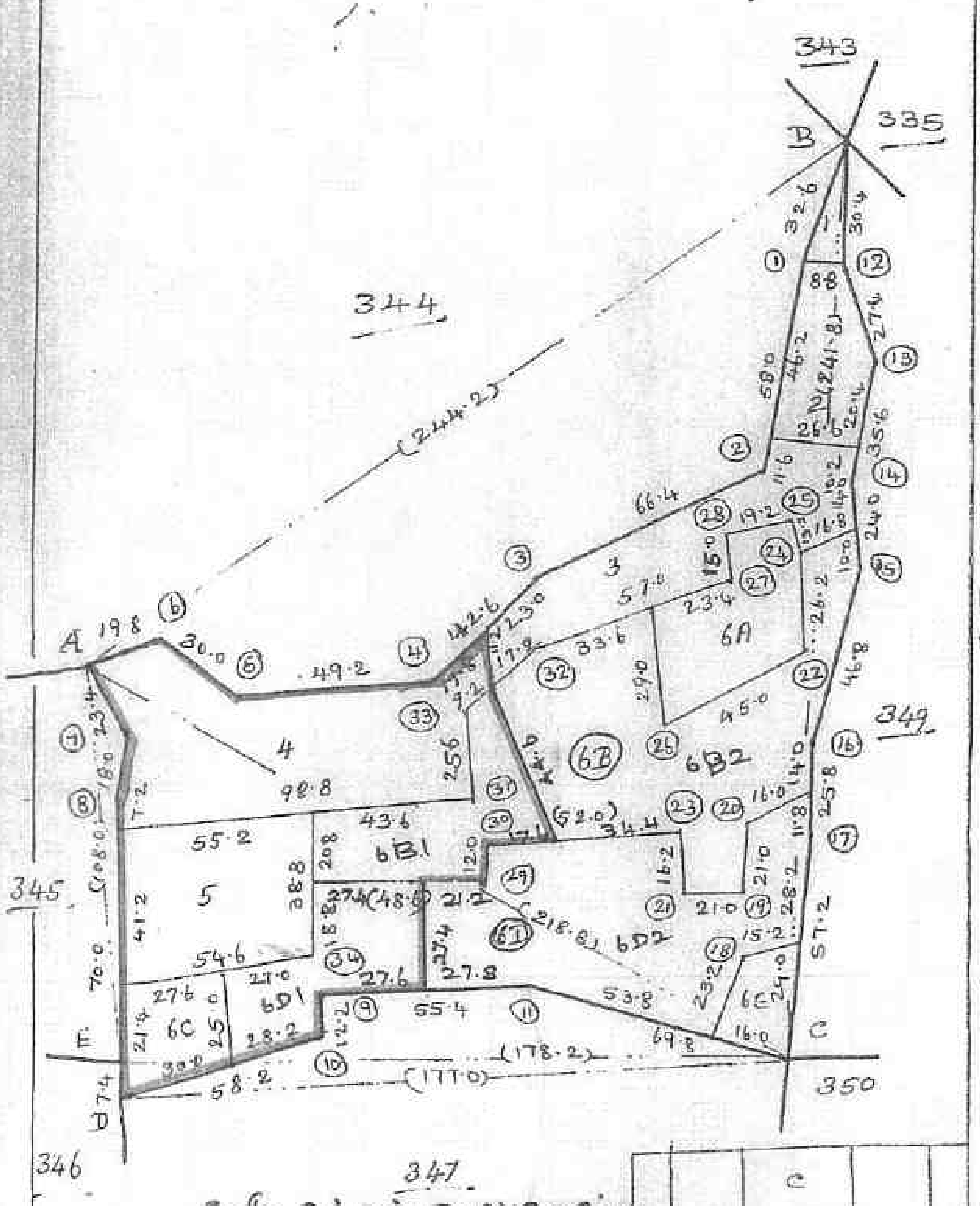
அளவு. 1" = 200 அடி.

S. SURIYAKUMAR,
Recognised Qualified Person,
Reg. No.RQP/MAS/013/87/A

COMMISSIONER OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032. *

மாவட்டம்: தருமபுரி
வட்டம்: கிருஷ்ணகிரி
புல எண்: 348

எண்: 152
கிராமம்
பெயர்: ...
பரப்பு: ... 2 ஏர் 23.5



				30
			2.0	29
		81.8	118.0	28
		71.8	107.0	27
		70.4	63.4	26
		69.2	130.8	25
		62.4	119.4	24
		54.4	40.8	23
		48.0	100.2	22
		44.0	26.0	21
		38.2	50.2	20
		28.0	34.0	19
		23.0	19.6	18
		C		
		241.8		
17	4.8	185.0		
16	0.6	159.6		
15	10.0	114.0		
14	8.4	90.2		
13	13.0	55.2		
12	1.4	30.4		
		B		
		C		
		177.0		
11	23.2	111.4		
10	13.0	56.8		
9	25.4	65.8		
		D		
		E		
		108.4		
8	4.0	38.6		
7	9.2	21.4		
		A		
		244.2		
6	5.2	256.2		
5	33.2	217.6		
4	57.2	174.2		
3	49.6	132.4		
2	60.8	69.0		
1	21.8	25.4		
		B		

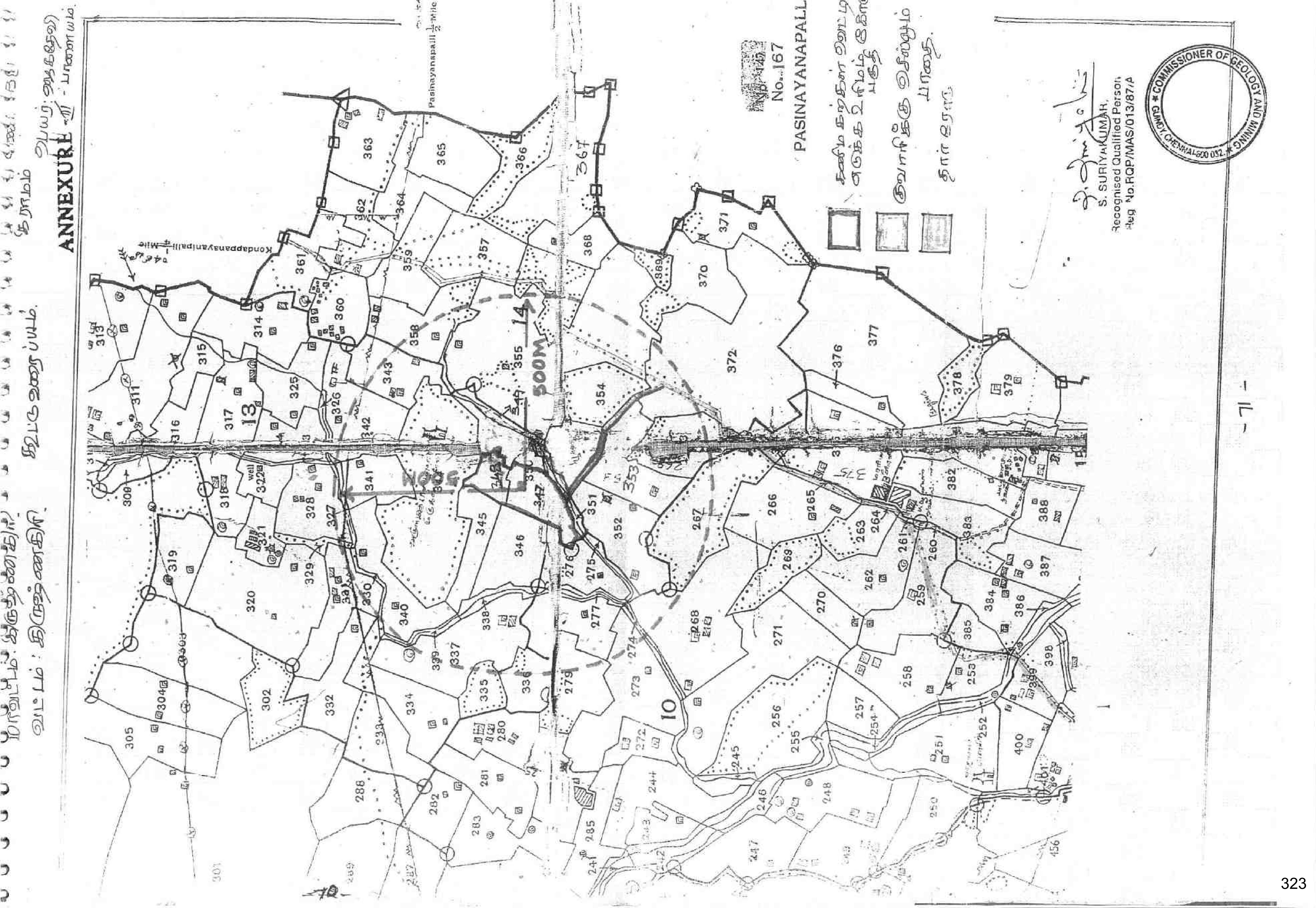
		C		
		178.2		
34	28.4	53.2		
		1.4	7.2	D
		E		
		A		
		218.8		
		122.2	41.8	33
		111.4	66.0	32
		107.2	21.2	31
		X		

கனிம கற்கள் வெட்டி எடுக்க உரிமம் கோரும் பகுதி

புல எண்	பரப்பு ஹெக்டேர்	ஏக்கர்
348/4	0.32.00	0.79
5	0.20.00	0.49½
6B1	0.16.20	0.40½
6C	0.10.50	0.26
6D1	0.13.35	0.33
	0.92.05	2.27½

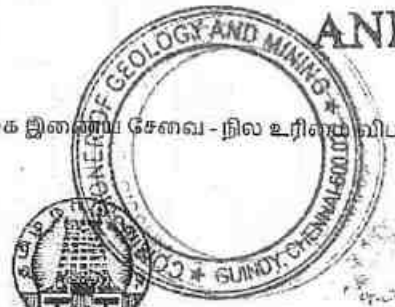
S. SURIYAKUMAR.
Recognised Qualified Person,

ANNEXURE VIII- COPY OF COMBINED SKETCH



ANNEXURE - V

11/9/2017 வட்டாட்சியர் அலுவலக இணைய சேவை - நில உரிமை விபரங்கள்



தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கிருஷ்ணகிரி வட்டம் : பர்கூர்

வருவாய் கிராமம் : ஜெகதேவிபாளையம் பட்டா எண் : 1205

உரிமையாளர்கள் பெயர்

1.	எஸ்.எஸ்.சலாவுதீன்	மகன்	எஸ்.எஸ்.ஜமீலுத்தீன்	
2.	எம்.ஏகநாதன்	மகன்	ஏ.ஜெகதீசன்	

		நன்செய்		புன்செய்		மற்றவை	
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை
புல எண்	உட்பிரிவு	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை
347	1	--	--	0 - 33.00	1.10	--	--
347	2	--	--	0 - 65.00	2.20	--	--
347	4	--	--	0 - 23.50	0.80	--	--
347	5	--	--	1 - 6.00	3.60	--	--
348	4	--	--	0 - 32.00	1.05	--	--
348	5	--	--	0 - 20.00	0.70	--	--
348	6B1	--	--	0 - 16.20	0.50	--	--
348	6C	--	--	0 - 10.50	0.35	--	--
348	6D1	--	--	0 - 13.35	0.45	--	--
353	2A1B	--	--	0 - 24.50	0.83	--	--
353	2A7	--	--	0 - 88.00	2.95	--	--
353	2B	--	--	0 - 6.00	0.20	--	--
353	2C1	--	--	0 - 5.50	0.19	--	--
353	2E1A	--	--	0 - 32.50	1.10	--	--
				4 - 76.05	16.02		

குறிப்பு2 :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **http://eservices.tn.gov.in** என்ற இணைய தளத்தில் **31/06/138/01205/20818** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

S. SURIYAKUMAR
M.Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

S. SURIYAKUMAR,
Recognised Qualified Person.
Reg No.RQP/MAS/013/87/A

THIRU C.KATHIRAVAN, I.A.S.,
CHAIRMAN/
DISTRICT COLLECTOR.

Krishnagiri District
Environment Impact
Assessment Authority,
Room No.30,
Collectorate,
Krishnagiri.

ENVIRONMENTAL CLEARANCE

Lr.No.36/DEIAA-KGI/EC No.25/2018 dated: 27.02.2018

To

Tvl. Everking Granites,
No.161 TNHB, Phase II,
Krishnagiri,
Tamil Nadu, 635 002

Sir,

Sub: DEIAA - Application for Environment Clearance for the Proposed Grey Granite quarrying over an extent of 3.19.5 Hects. in patta land 347/1(0.33.0), 347/2(065.0), 347/4(0.23.5), 347/5(1.06.0), 348/4(0.32.0), 348/5(0.20.0), 348/6B1(0.16.2), 348/6C(0.10.5) and 348/6D1 (0.13.3) of Jagadevipalayam village of Bargur Taluk Krishnagiri District preferred by Tvl. Everking Granites, No.161 TNHB, Phase II,Krishnagiri, Tamil Nadu, 635 002 - Issue of Environmental Clearance - Reg.

Ref: 1. Tvl. Everking Granites Application for Environment Clearance dated 14.09.2017.
2. Minutes of the DEAC meeting conducted on.02.02.2017
3. Minutes of the DEIAA meeting held on 23.02.2018

-o0o-

Details of Minor mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of minor mineral Grey Granite based on the particulars furnished in your application as shown below:

1.	Name of Project Proponent and address	Tvl. Everking Granites, No.161 TNHB, Phase II, Krishnagiri, Tamil Nadu, 635 002
2.	Location of the Proposed Activity	

		Survey Number and Extent	347/1(0.33.0), 347/2(0.65.0), 347/4(0.23.5), 347/5(1.06.0), 348/4(0.32.0), 348/5(0.20.0), 348/6B1(0.16.2), 348/6C(0.09.5) and 348/6D1 (0.13.3)
		Latitude and Longitude	12°28'39.72981" N to 12° 28'50.35514N 78° 21'06.95056'E to 78° 21'15.36719"E
		Topo Sheet No.	57L/7
		Village	Jagadveipalayam
		Taluk	Bargur
		District	Krishnagiri
3.		Proposed Activity	
	i.	Minor mineral	Grey Granite Quarrying
	ii.	Mining Lease Area	3.19.5 Hects,.
	iii.	Approved quantity	52459 Cbm of Grey Granite for a period of Five years,
	iv.	Depth of Mining	30 mts(including topsoil and burden) from a period of 5 years
	v.	Type of mining	Open cast semi mechanised mining.
	vi.	Category (B1/B2)	B2
	vii.	Precise Area Communication	The Government Lr.No.3839/ MME-/2017-1 dated 06.09.2017
	viii.	Mining Plan approval	The Commissioner of Geology and Mining, Gundy, Chennai Lr.No.992/MM5/2017 dated: 19.01.2018
	ix.	Mining lease period	Twenty years Environment Clearance for 5 years
4.		Whether Project area attracts any general conditions specified in the EIA notification, 2006 as amended:-	Not attracteed Affidavit furnished
5.		Man Power requirement per day	24 Employees
6.		Utilities	
	i.	Source of Water	a. For Drinking and Domestic purpose water will be purchased from approved water vendors. b. For dust suppression and green belt development water

				from the existing bore hole situated near by the quarry area will be used.
	ii.	Quantity of Water Requirement in KLD:		
		a.	Domestic & Drinking	2.50 KLD
		b.	Industrial	--
		c.	Green Belt & Dust Suppression	3.10KLD
	iii.	Power requirement		
		a.	Domestic purpose	TNEB
		b.	Industrial purpose	Fuels is used for operating machineries and vehicles during the quarrying process.
7.			Cost	
	i.	Project Cost		Rs.91,25,000/-
	ii.	EMP Cost		Rs.7,25,000/-
8.	Public Consultation:-			Not required as per O.M. dated 24.12.2013 of MoEF, GOI
9.	Date of Appraisal by DEAC: Agenda No.			Agenda No.12 of 3rd meeting of DEAC conducted on 02.02.2018
10.	Date of review / discussion by DEIAA and the Remarks:- The proposal was placed before the DEIAA in its 3rd meeting on 23.02.2018 as agenda No.12 and the authority after careful consideration, decided to grant Environmental Clearance to the said project of Mining of Grey Granite subject to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.			
11.	Validity: This Environmental Clearance is granted to Mining of Grey Granite for the production quantity of 52459 Cbm of Grey Granite for the period of five years from the date of execution of the mining lease period.			
12.	NBWL Clearance: The proposal area situated 41.33 km away from The Cauvery Wild Life Sanctuary and it does not Attract NBWL clearance.			
13	Special Condition: i) Ground Water Quality test should be conducted periodically, Water collected in the pit should be pumped via Settling Tank. ii) Adequate green belt should be maintained around the premises as proposed iii) Environment Management Plan should be submitted before execution of lease deed			

Conditions to be Complied before / during commencing operations:-

(1) The project proponent shall advertise in at least two local newspaper widely circulated in the region, one of which shall be in the vernacular language informing the public that

i) The project has been accorded Environmental Clearance
ii) Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
iii) Environmental Clearance may also be seen on the website of the State Level Environment Impact Assessment Authority.
iv) The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.

(2). The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.

(3). NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.

(4). The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.

(5). A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.

(6). Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.

(7). The proponent shall ensure that First Aid Box is available at site.

(8). The excavation activity shall not alter the natural drainage pattern of the area.

(9). The excavated pit shall be restored by the project proponent for useful purposes. **In this regard, the proponent shall deposit a sum of Rs.5,00,000/- (Rupees Five Lakhs only) in the name of District Collector Krishnagiri in the form of fixed deposit. The said fixed deposit will be refunded after restoration of pit after end of the lease period.**

(10). The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.

(11). The quarrying operation shall be restricted between 7 AM and 5 PM.

(12). The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.

(13). A minimum distance of 15 mts. From any civil structure shall be kept from the periphery of any excavation area.

(14). Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.

(15). The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine

closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.

(16). Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.

(17). Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.

(18). The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.

(19). Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.

(20). A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.

(21). The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009. **(GLC = Ground Level Concentration), (NAAQ = Noise and Ambient Air Quality)**

(22). The following measures are to be implemented to reduce Air Pollution during transportation of mineral

(i). Roads shall be graded to mitigate the dust emission.

(ii). Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust.

(23). The following measures are to be implemented to reduce Noise Pollution

(i). Proper and regular maintenance of vehicles and other equipment.

(ii). Limiting time exposure of workers to excessive noise.

(iii). The workers employed shall be provided with protection equipment and earmuffs etc.

(iv). Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

(24). Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.

(25). Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with **Assistant Director, Ground Water Division, PWD, Dharmapuri.**

(26) Rain water harvesting to collect and utilize the entire water falling in land area should be provided by construction of a storage tank with a capacity of 5,00,000 litre and the rain water harvested in the entire quarry area should be stored in it and used for the quarry purpose like dust prevention, wet drilling, providing water for green belt etc.

(27). Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.

(28). Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.

(29). The following measures are to be adopted to control erosion of dumps:

(i). Retention/ toe walls shall be provided at the foot of the dumps.

(ii). Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.

(30). Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.

(31). Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(32). Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season. **Photographs of the silt trap should be furnished before commencing quarry operation.**

(33). The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, **that the ground water is getting depleted due to the quarrying activity, necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Dharmapuri shall monitor.**

(34). No tree-felling shall be done in the leased area, except only with the permission from competent Authority.

(35). To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution **and it should be monitored by the District Environmental Engineer, TNPCB, Hosur on yearly basis.**

(36). It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.

(37). It shall be ensured that there is no habitation is located within 500 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site

(38). Ground water quality monitoring should be conducted once in 3 Months.

(39). Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.

(40). Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI **once in three months.**

(41). Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI **periodically once in six months.**

(42). Bunds should be provided at the boundary of the project site and it **should be properly maintained.**

(43). The project proponent shall undertake plantation/ afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.

(44). At least 10 Neem trees should be planted around the boundary of the quarry site.

(45). Floor of excavated pit to be leveled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.

(46). The Project Proponent shall ensure a minimum of 2.5 of the annual turnover will be utilized for the CSR Activity.

(47). The Project Proponent shall provide solar lighting system to the nearby villages.

(48). The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.

(49). Rainwater shall be pumped out Via Settling Tank only

(50). Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.

(51). As per MoEF & CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry &Wild Life angle including clearance from obtaining committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.

(52). The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.

(53) Safety equipments to be provided to all the employees.

(54) Safety distance of 50 m has to be provided in case of railway, reservoir, canal/odai

(55) The Assistant / Deputy Director Department of Geology and Mining shall ensure that the proponent has engaged the blaster with valid Blasting license /certificate obtained from the competent authority before execution of mining lease.

(56) The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.

(57) The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.

(58) The proponent shall furnish the data obtained from the Public Works Department regarding the details of ground water table in the quarry site.

(59) The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh case before execution of mining lease.

(60) The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to the existing activity before execution of mining.

(61) Heavy earth machinery equipments if utilized, after getting approval from the competent authority.

(62) The environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur.

(63) The Assistant Director Public Works Department, Ground Water Division Dharmapuri shall monitor whether the quarrying activity is carried out above the ground water level on yearly basis.

(64) NOC for sanitary certificate shall be obtained from the Deputy Director of Health Services, Krishnagiri.

(65) Yearly medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Krishnagiri.

(66) Closed circuit camera should be erected at the quarry site and the passage of vehicles in and out of the quarry should be recorded and the footage of the recordings of the camera should be maintained and should be produced before the enforcing officials when ever called for.

(67) Vehicles used for transportation of quarried materials should be fitted with GPS and monitored.

(68) Pit Mouth register should be maintained in online

(69) Auditor report on the annual turnover amount should be submitted to the District Collector within one month from the end of the financial year.

(70) 02.5% of the turn over amount should be utilized for the CSR activity after consultation with the District Collector.

B. General Conditions:

(1) EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.

(2) The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.

(3) No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.

(4) No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.

(5) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

(6) Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
(7) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
(8) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
(9) Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying them mineral shall not be overloaded.
(10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
(11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
(12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of 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 obsolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
(17) This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance
(18) The DEIAA, Krishnagiri may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
(19) The DEIAA, Krishnagiri may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this DEIAA, Krishnagiri that the project proponent has

S. SURIYAKUMAR
M.Sc.,M.Phil (Geo), F.C.C (Mining)

XVII VI

सेल रिफ्रैक्ट्री कम्पनी लिमिटेड, सेलम
SAIL REFRACTORY COMPANY LTD., SALEM
(A Govt. of India Enterprises)
(A Subsidiary of Steel Authority of India Limited)

SRCL/P&A/2017/0380/1935 DATE: 18.09.2018

EMPLOYMENT CERTIFICATE

Employee Details :

Name	: S.SURIYAKUMAR
Employee No	: 100045
Grade	: E-2
Designation	: Asst. Manager (Geology)
Department	: Mines

This is to certify that Sri. S.SURIYAKUMAR F.S.No.100045 was in the employment of this organisation from 20.03.1981 to 31.07.1992 and he has resigned & released with effect from 31.07.1992 AN.

At the time of his resignation on 31.07.1992, he was employed as Assistant Manager in the capacity of II class Mines Manager.

Sridharan
18/09/18
S.SRIDHARAN
Asst. General Manager (Prsl & Admn)

Post Box No. 565 Salem - 636 005. Phone : +91427-2341403/4/5/6 Fax : +91427-2341407
पोस्ट बैग नो. : 565, सेलम - 636 005. फोन +91427-2341403/4/5/6 फैक्स +91427-2341407
E-mail : srclsalem@gmail.com CIN No. : U14200TZ2011GOI017357

ANNEXURE-XIII

002646

COMMISSIONER OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032

University of Madras

FACULTY OF SCIENCE

The Senate of the University of Madras hereby makes known that S. Suriyakumar has been admitted to the Degree of Master of Science, he having been duly certified to be qualified to receive the same and awarded an Overall Grade O at the Examination held in the month of May 1979 in Branch VII A - Special Geology

Given under the seal of the University, at Madras this 28th day of September 1979

Registrar

D. Sc. Engg., C. Engg., F.I.E.E. (Lond.), F.I. Mun. E. (Lond.), F.I.E. (Ind.),
Vice-Chancellor

455

GEOLOGY AND MINING * GUINDY CHENNAI-600 032 * COMMISSION

University of Madras

FACULTY OF SCIENCE

The Senate of the University of Madras hereby makes known that S. Suriyakumar has been admitted to the Degree of Master of Philosophy in Geology, he having been certified by duly appointed Examiners to be qualified to receive the same, and having been by them placed in the First Class at the Examination held in September 1986.

Given under the seal of the University.

Senate House

September 21, 1988

Registrar.

F.N.A., F.N.A.Sc.,

Vice-Chancellor.

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REGISTERED

Government of India
Ministry of Labour
DIRECTORATE-GENERAL OF MINES SAFETY
****

No.Exam/MNGR-I/Field/Metal/R/ 113/91 /Dated, Dhanbad, the 1 AUG 1991

To

Shri S. Suriya Kumar,

Assistant Manager,

Mangnesite Mines, Burn Standard Co,Ltd.,

SALEM-636005, TAMIL NADU.

MEMORANDUM

Ref:-His application dated 18-7-90

By virtue of Govt. Notification No.S.O.712(E) dated 13.12.1974 Shri S. Suriyakumar son of Shri A. Samban has become eligible to work in a capacity requiring the possession of First Class Manager's certificate, restricted to mines having opencast workings only, under the Metalliferous Mines Regulations, 1961 with effect from 19th March, 1991 till the above notification remain in force.

Encl:-

Secretary,
Board of Mining Examinations &
Director of Mines Safety(Exam)

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ANNEXURE XII- COPY OF VAO CERTIFICATE

சான்று

கிருஷ்ணகிரி மாவட்டம், பருகூர் வட்டம், ஜெகதேவிபாளையம் கிராம நிர்வாக அலுவலர் அளிக்கும் சான்று.

கிருஷ்ணகிரி மாவட்டம், கிருஷ்ணகிரி வட்டம், No.1/161, TNHB பகுதி-2, என்ற முகவரியில் இயங்கி வரும் Tvl. EVER KING GRANITES-ன் மேனேஜிங் பார்ட்னர் திரு. எஸ்.எஸ்.ஜமீலுதீன் என்பவர் கிருஷ்ணகிரி மாவட்டம், பருகூர் வட்டம், ஜெகதேவிபாளையம் கிராமத்தில் உள்ள Grey Granite Quarry - சர்வே எண்கள் 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C, 348/6D1 ஆகியவற்றில் உள்ள 3.19.5 ஹெக்டேர் பரப்பு பட்டா நிலத்தில் கிரே கிரானைட் கற்கள் வெட்டி எடுக்க அரசாங்கத்திடமிருந்து குத்தகை அனுமதி கோரியுள்ளார். எனவே குவாரி குத்தகை உரிமம் எடுத்துள்ள நிலத்தை சுற்றி சுமார் 300 மீட்டருக்கு அருகில் அங்கீகரிக்கப்பட்ட வீட்டு மனைகள், மற்றும் புராதனச் சின்னங்கள் ஏதும் இல்லை எனவும், இதனால் பொதுமக்களுக்கு எவ்வித இடைஞ்சல்களோ அல்லது பாதிப்புகளோ ஏற்படாது என தெரிவித்துக் கொள்கிறேன். மேலும், அனுமதி கோரிய புலத்திற்கு வண்டிகள் சென்று வர புலத்திற்கு கிழக்கு மேற்காக பாதை அமைந்துள்ளது.

J. Ramesh
27/10/2021
Village Administrative Officer
17, JAGADEVI PALAYAM
Bargur - Tk, Krishnagiri - Dt

ANNEXURE XIII- COPY OF SITE PHOTOGRAPH ATTESTED BY VAO

TVL.EVER KING GRANITES, Over an extent of 3.19.5Hectares, S.F.No: 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C and 348/6D1 of Grey granite Quarry located at Jagadevipalayam Village, Bargur Taluk, Krishnagiri District, Tamil Nadu.

General View of the Proposed Area.

J. Rameshwar
27/10/2021
Village Administrative Officer
17. JAGADEVI PALAYAM
Bargur - Tk, Krishnagiri - Dt

தமிழ்நாடு तमिलनाडु TAMILNADU ரூ50/- 29.10.2022 BE 948402

Tvl. Everking Granites
Krishnagiri

T. லிக்னி
முத்திரைத்தாள் விற்பனையாளர்
உரிமம் எண்: 3/2013/சேலம் மேற்கு
எட்டிக்குட்டை தெரு, ஜாகீர் அம்மாபாளையம்,
சேலம்-636 005.

AFFIDAVIT TO SEIAA, TAMIL NADU

Tvl. Everking Granites, The Managing Partner, having registered office at No: 1/161, T.N.H.B Phase-II, Krishnagiri, Pincode-635 002, TamilNadu state do hereby solemnly declare and sincerely affirm that,

I have applied for getting environmental clearance to SEIAA Tamil Nadu for quarry lease for Grey Granite, in S.F.No: 347/1, 347/2, 347/4, 347/5, 348/4, 348/5, 348/6B1, 348/6C and 348/6D, Patta land, over an extent of 3.19.5Hectares of Jegadevipalayam Village, Bargur Taluk, Krishnagiri District and Tamil Nadu.

1. I swear to state that within 10kms radius of the mines which I have applied for environmental clearance, none of the followings are situated as per the General Conditions of EIA Notification, 2006.

- Protected areas notified under the Wildlife (Protection) Act, 1972
- Critically polluted area as identified by CPCB constituted under Water (Prevention and Control of Pollution) Act, 1974
- Eco Sensitive areas identified by the Forest Dept/State Govt

- Interstate boundaries are located at 13.7 kms and there is no International boundaries within 10Km Radius from the proposed site.

2. I will complete the following Corporate Environment Responsibility (CER) activities before commencement of the quarrying activities in addition to CSR and EMP.

CER Activity	Project Cost (Rs. In Lakh)	CER Cost 2% of Project Cost (Rs in Lakh)
Developing Library Facilities to Government High school, Jagadevipalayam Village.	84 lakh	1.68
Total Cost Allocation	**84 lakh**	**1.68Lakh**

3. There are Quarries located within 500m radius from the periphery of our quarry.

i. Existing Quarries

S. No	Name of the Lessee	GO.NO. & Dated	Village & Taluk	S.F.No	Extent (In Ha.)	Lease Period	Last permit obtained
1.	Tvl.Everking Granites, No.1/161, T.N.H.B Phase-II, Krishnagiri.	G.O, (3D) NO.20, IND. (MME-2) DEPT.DT. 22.03.2018	Jagadevi palayam village, Bargur Taluk.	347/1, 347/2, 347/4, 347/5, 347/6B1, 3476C, 347/6D1	3.19.50	28.05.2018 TO 27.05.2038 Instant proposal (applied 1st scheme of mining)	13.10.2022
2	Thiru.E.Jagadeesan, S/O.Egananthan,No. 5/50,Thiruvallur Nagar,Krishnagiri	G.O,(3D)NO.42,IND.(MME-2). DEPT.DT. 29.09.2018	Jagadevi palayam village, Bargur Taluk.	353/2A1B	1.56.50	09.11.2018 TO 08.11.2038	16.09.2022
3	Tvl.M.P Granite, No;131/29, R.R Complex, Kollapatti, Animoor Post, Tiruchengode.	G.O,(3D)NO.07,IND.(MME-2). DEPT.DT. 18.01.2016	Jagadevipalayam village, Bargur Taluk.	266/1, 266/1AC, 268/1AD	1.85.50	03.02.2016 TO 02.02.2036	08.12.2017
4	M.P.Mining & Leasing Company, No.2/226, Karisalkulam Road, Vakkanangundu, Kariyapatti, Virudhunagar.	G.O,(3D) NO.72,IND. (MME-2). DEPT.DT. 01.12.2016	Jagadevi palayam village, Bargur Taluk.	268/1Y, 268/1Z, 268/2K, 268/1AB.	1.84.00	10.02.2017 TO 09.02.2037	18.03.2020
5	S.S.Jameeleddin, S/O.S.S. Salaluddin, No.449/1, New Housing Board, Ii Phase, Krishnagiri.	G.O,(3D)NO.17,IND.(MME-2). DEPT.DT.0 08.04.2008	Jagadevipalayam village, Bargur Taluk.	372/3A.	1.25.00	22.12.2008 TO 21.12.2028	06.09.2018

ii. Abandoned or Expired Quarries

S.No	Name of the owner	GO.NO.& Dated	Village	S.F.No	Extent (In Ha.)	Lease Period
-	----------Nil----------					

iii. Present Proposed Quarries

S.No	Name of the owner	GO.NO.& Dated	Village	S.F.No	Extent (In Ha.)	Lease Period
-	----------Nil----------					

4. There will not be any hindrance or disturbance to the people living on enroute / nearby my quarry site while transporting the mined out materials and due to quarrying activities.

5. There are no habitations / villages located within 300 meters radius from the periphery of my quarry.

6. I swear that afforestation will be carried out during the course of quarrying operation and maintained.

7. The required insurance will be taken in the name of the labourers working in my proposed quarry.

8. The existing road from the main road to the quarry is in good condition and the same will be maintained and utilized for transportation of granite.

9. I will not engaging any child labour at my mines 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 laborers working in my quarry.

11. No permanent structures, temples etc are located within 500 m from the periphery of my quarry.

12. The quarrying activity has not yet commenced and it will be carried out only after obtaining environmental clearance.

Deponent

Jameel

Tvl. Everking granites)

NOTARIAL GOVT. NOTARIAL

and sincerely affirmed and

Signed before the Notary Public on

the day of 19th March 2022

Cell:(0)9443286345
M.SARAVANAKUMAR.B.SC.,B.L.,
ADVOCATE & NOTARY,
(GOVT. OF INDIA)
NO:11,A.V.Mansion,
Ist Gate, Near Sona College,,
Junction Main Road. SALEM-636 005.

Annexure of

Thiru.E.Jagadeesan

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

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

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.9550/ToR-1514/2022 Dated:01.08.2023.

To

Thriu E.Jagadeesan
S/o. Egananthan,
No. 5/50, Thiruvalluvar Nagar,2
Krishnagiri
Krishnagiri District,
Tamilnadu – 635001

Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with public Hearing (ToR) for the Existing Grey Granite Quarry lease over an extent 1.56.5 Ha at S.F.Nos.353/2A1B, 2A7, 2B, 2C1 & 2E1A, Jagadevipalayam Village Bargur Taluk, Krishnagiri District, Tamil Nadu by Thriu E. Jagadeesan - 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/404965/2022 Dt:04.11.2022.
2. Your application submitted for Terms of Reference dated: 07.11.2022.
3. Minutes of the 393rd SEAC Meeting held on 20.07.2023.
4. Minutes of the 643rd SEIAA meeting held on 01.08.2023.

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

The proponent, Thriu E.Jagadeesan has submitted application for Terms of Reference (ToR) with public Hearing, in Form-I, Pre- Feasibility report for the Existing Grey Granite Quarry lease over an

MEMBER SECRETARY
SEIAA-TN

extent 1.56.5 Ha at S.F.Nos.353/2A1B, 2A7, 2B, 2C1 & 2E1A, Jagadevipalayam Village Bargur Taluk, Krishnagiri District, Tamil Nadu.

Discussion by SEAC and the Remarks:-

Existing Grey Granite Quarry lease over an extent 1.56.5 Ha at S.F.Nos. 353/2A1B, 2A7, 2B, 2C1 & 2E1A, Jagadevipalayam Village Bargur Taluk, Krishnagiri District, Tamil Nadu by Thriu E. Jagadeesan - For Terms of Reference.

(SIA/TN/MIN/404965/2022 Dt:04.11.2022)

Earlier, the proposal was placed in the 346th & 361st SEAC Meeting held on 12.01.2023& 10.03.2023. Also, the proposal was placed in the 591st & 622nd SEIAA meeting held on 10.02.2023 & 26.05.2023 and refer backed to SEAC for the remarks stated therein. In this connection, the project proponent gave detailed presentation. The details of the project furnished by the proponent are given in the website (parivesh.nic.in).

The SEAC noted the following:

1. Earlier, EC was issued vide DEIAA Lr. No. 03/DEIAA-KGI/EC No.104/2018 Dt: 27.08.2018 valid upto 26.08.2023 for Grey Granite Quarry lease over an extent 1.56.5 Ha at S.F.Nos. 353/2A1B, 2A7, 2B, 2C1 & 2E1A, Jagadevipalayam Village Bargur Taluk, Krishnagiri District, Tamil Nadu and production of 9374 Grey Granite & Ultimate depth upto 6m.
2. MoEF&CC OM vide F.No.IA3-22/11/2023-IA.III (E-208230) Dt: 28.04.2023.
3. The project proponent lr.dt 04.05.2023.
4. The project proponent, Thriu E. Jagadeesan has applied for Terms of Reference for the existing Grey Granite Quarry lease over an extent 1.56.5 Ha at S.F.Nos. 353/2A1B, 2A7, 2B, 2C1 & 2E1A, Jagadevipalayam Village Bargur Taluk, Krishnagiri District, Tamil Nadu.
5. 500m Radius cluster from AD/Dept. of G&M Lr. 276/Mines/2022 Dt:07.07.2022 (Cluster Area (13.73 Ha).
6. The project/activity is covered under Category "B1" of Item 1(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, 2006.
7. Hence, the total production for the first 5 years not to exceed RoM: 51764m^3, Grey Granite (30% recovery) - 15529 m^3, Granite Waste (70%)- 36235 m^3, Topsoil - 1131m^3 & Weathered Rock - 4484 m^3 with the Ultimate depth shall not exceed 19m. The annual peak production shall not exceed 1040 m^3(4th year).

The proposal was again placed in the 393rd SEAC Meeting held on 20.07.2023. Based on the presentation and details furnished by the project proponent, **SEAC decided to grant Terms of**

MEMBER SECRETARY
SEIAA-TN

Reference (TOR) with Public Hearing subject to the following TORs, in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC to be included in EIA/EMP Report:

1. **The proponent shall give an Affidavit before the issuance of ToR from SEIAA-TN stating that the mining operations will remain suspended till they obtain the EC granted by the SEIAA after the reappraisal process as per MoEF &CC OM F.No. IA3-22/11/2023-IA.III (E-208230), dated. 28.04.2023.**
2. For the existing quarry, the PP shall obtain a letter from the concerned AD (Mines) which include the following information:
    i. Original pit dimension of the existing quarry
    ii. Quantity achieved Vs EC Approved Quantity
    iii. Balance Quantity as per Mineable Reserve calculated.
    iv. Mined out Depth as on date Vs EC Permitted depth
    v. Details of illegal/illicit mining carried out, if any
    vi. Non-compliance/Violation in the quarry during the past working.
    vii. Quantity of material mined out outside the mine lease area (or) in the adjacent quarry/land.
    viii. Existing condition of Safety zone/benches
    ix. Details of any penalties levied on the PP for any violation in the quarry operation.
2. The PP shall furnish Certified Compliance Report (CCR) obtained from IRO(SZ), MoEF&CC and with mitigation measures for the non-compliance stated therein.
3. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc.
4. The proponent shall furnish a revised EMP budget for entire life of proposed mining.

Annexure - I

1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:
    (i) Original pit dimension
    (ii) Quantity achieved Vs EC Approved Quantity
    (iii) Balance Quantity as per Mineable Reserve calculated.
    (iv) Mined out Depth as on date Vs EC Permitted depth

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SEIAA-TN

(v) Details of illegal/illicit mining

(vi) Violation in the quarry during the past working.

(vii) Quantity of material mined out outside the mine lease area

(viii) Condition of Safety zone/benches

(ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.

2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.

3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.

4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.

5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.

6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.

7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.

MEMBER SECRETARY
SEIAA-TN

8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.
9. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.
10. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
11. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
14. Quantity of minerals mined out.
    - Highest production achieved in any one year
    - Detail of approved depth of mining.
    - Actual depth of the mining achieved earlier.
    - Name of the person already mined in that leases area.
    - If EC and CTO already obtained, the copy of the same shall be submitted.
    - Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
15. All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,

MEMBER SECRETARY
SEIAA-TN

17. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same.
19. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
21. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
22. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
24. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should

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be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

25. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
26. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
27. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
28. Impact on local transport infrastructure due to the Project should be indicated.
29. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
31. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
32. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner

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34. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
35. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
36. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
37. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
38. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
40. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
41. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.
42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
43. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

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Appendix -I
List of Native Trees Suggested for Planting

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

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40	*Premna mollissima*	Murnai	முன்னை
41	*Premna serratifolia*	Narumunnai	நறு முன்னை
42	*Premna tomentosa*	Malaipoovarasu	மலை பூவரசு
43	*Prosopis cinerea*	Vanni maram	வன்னி மரம்
44	*Pterocarpus marsupium*	Vengai	வேங்கை
45	*Pterospermum canescens*	Vennangu, Tada	வெண்ணாங்கு
46	*Pterospermum xylocarpum*	Polavu	புலவு
47	*Puthranjiva roxburghi*	Karipala	கரிபாலா
48	*Salvadora persica*	Ugaa Maram	உகா மரம்
49	*Sapindus emarginatus*	Manipungan, Soapukai	மணிப்புங்கன் சோப்புக்காய்
50	*Saraca asoca*	Asoca	அசோகா
51	*Streblus asper*	Piray maram	பிராய் மரம்
52	*Strychnos nuxvomic*	Yetti	எட்டி
53	*Strychnos potatorum*	Therthang Kottai	தேத்தான் கொட்டை
54	*Syzygium cumini*	Naval	நாவல்
55	*Terminalia bellaric*	Thandri	தான்றி
56	*Terminalia arjuna*	Ven marudhu	வெண் மருது
57	*Toona ciliate*	Sandhana vembu	சந்தன வேம்பு
58	*Thespesia populnea*	Puvarasu	பூவரசு
59	*Walsuratrifoliata*	valsura	வால்சுரா
60	*Wrightia tinctoria*	Veppalai	வெப்பாலை
61	*Pithecellobium dulce*	Kodukkapuli	கொடுக்காப்புளி

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

.....கரங்கம்

கரங்கள்களில் குவாரி செயல்பாடுகளுக்கான சுற்றுச்சூழல் அனுமதி கீழ்கண்ட நிபந்தனைகளுக்கு உட்பட்டு வழங்கப்பட்டுள்ளது SEIAA/——, தேதியிடப்பட்டு. சுற்றுச்சூழல் அனுமதி _____தேதி வரை செல்லத்தக்கதாக உள்ளது.

பகலை பகுதி வரைச்சி மேல்பாட்டுக்கான கரங்கத் திட்டம்	குவாரியின் எல்லையைச் சுற்றி வேலி அமைக்க வேண்டும்
	கரங்கப்பாதையின் ஆழம் தரைமட்டத்திலிருந்து ___மீட்டருக்கு மிகாமல் இருக்க வேண்டும்
	காற்றில் மாசு ஏற்படாதவாறு கரங்க பணிகளை மேற்கொள்ள வேண்டும்.
நடப்பட்டு பராமரிக்கப்பட வேண்டிய மரங்கள் எண்ணிக்கை:	வாகனங்கள் செல்லும் பாதையில் மாசு ஏற்படாத அளவிற்கு தண்ணீரை முறையாக தண்ணீர் லாரிகளின் மூலமாக அப்பப்போது தெளிக்க வேண்டும்.
	இரைச்சல் அளவையும் தூசி மாசுபாட்டையும் குறைப்பதற்காக குவாரியின் எல்லையை சுற்றி அடர்த்தியான பசுமை பகுதியை ஏற்படுத்த வேண்டும்.
கரங்கத்தில் வெடி வைக்கும்பொழுது நிலதிர்வுகள் ஏற்படாதவாறும் மற்றும் கற்கள் பறக்காதவாறும் பாதுகாப்பு நடவடிக்கைகளை உள்ளிட்டமாக செயல்படுத்தப்பட வேண்டும்.	
கரங்கத்தில் இருந்து ஏற்படும் இரைச்சல் அளவு 85 டெசிபல்ஸ் (dBA) அளவிற்கு மேல் ஏற்படாதவாறு தகுந்த கட்டுப்பாடுகளை மேற் கொள்ள வேண்டும்.	
கரங்க சட்ட விதிகள் 1955ன் கீழ் கரங்கத்தில் உள்ள பணியாளர்களுக்கு தகுந்த பாதுகாப்பு கருவிகள் வழங்கவதோடு கவாதாமுள்ள சுழ்நிலை வசதிகளை செய்து தர வேண்டும்.	
கிராமம் அல்லது பஞ்சாயத்து வழியாக வாகனங்கள் செல்லும் சாலையை தொடர்ந்து நன்கு பராமரிக்க வேண்டும்.	
கரங்கப்பணிகளால் அருகில் உள்ள விவசாயப் பணிகள் மற்றும் நீர்நிலைகள் பாதிக்கப்படக் கூடாது.	
நீர்நிலைகள் பாதிக்கப்படாமல் இருப்பதை உறுதி செய்யும் வகையில் நிலத்தடி நீரின் தரத்தினை தொடர்ந்து கண்காணிக்க வேண்டும்.	
கரங்கத்திலிருந்து கனிம பொருட்களை எடுத்துச் செல்வது கிராம மக்களுக்கு எந்தத் சிரமத்தினையும் ஏற்படுத்தாதவாறு பாதுகாப்போடும் மற்றும் சுற்றுசூழல் பாதிக்கவாத வண்ணம் வாகனங்களை இயக்க வேண்டும்.	
கரங்கப்பணிகள் முடிக்கப்பட்டவுடன் கரங்க மூடல் திட்டத்தில் உள்ளவாறு கரங்கத்தினை மூட வேண்டும்.	
கரங்க நடவடிக்கைகளை முடித்தபின்னர் கரங்கப் பகுதி மற்றும் கரங்க நடவடிக்கைகளால் இடையூறு ஏற்படக்கூடிய வேறு எந்தப் பகுதியையும் மறுசுழற்சியாளம் செய்து தாவரங்கள் விலங்குகள் ஆகியவற்றின் வாழ்க்கைக்கு ஏற்ற வகையில் பசுமைப்பகுதியை உருவாக்க வேண்டும்.	
முழுமையான நிபந்தனைகளை அறிய பார்வையிடவும் (http://parivesh.nic.in) வன்கிற இணையதளத்தைப் பார்வையிடவும் மேலும் எந்தவித சுற்றுசூழல் சார்ந்த புகார்களுக்கு சென்னையில் உள்ள சுற்றுச்சூழல் மற்றும் வன அலுவலகத்தின் ஒருங்கிணைந்த வட்டார அலுவலகம்: 044 – 28222325 (அல்லது) நமிழ்நாடு மாசு கட்டுப்பாடு வாரியத்தில் மாவட்ட சுற்றுச்சூழல் பொறியாளரை அணுகவும்.	

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Discussion by SEIAA and the Remarks:-

The proposal was placed in the 643rd Authority meeting held on 01.08.2023. The authority noted that the subject was appraised in 393rd meeting of SEAC held on 20.07.2023. SEAC has furnished its recommendations for granting Terms of Reference (ToR) along with Public Hearing subject to the conditions stated therein.

After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions in addition to the conditions in 'Annexure B' of this minute.

1. The project proponent shall prepare mine closure plan considering quantity of Topsoil & Weathered rock. If any.
2. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.

Annexure 'B'

Cluster Management Committee

1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.
2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,
3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.
4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.

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7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.
8. The committee shall furnish the Emergency Management plan within the cluster.
9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.
10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.

Impact study of mining

12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following
    a) Soil health & soil biological, physical land chemical features .
    b) Climate change leading to Droughts, Floods etc.
    c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
    d) Possibilities of water contamination and impact on aquatic ecosystem health.
    e) Agriculture, Forestry & Traditional practices.
    f) Hydrothermal/Geothermal effect due to destruction in the Environment.
    g) Bio-geochemical processes and its foot prints including environmental stress.
    h) Sediment geochemistry in the surface streams.

Agriculture & Agro-Biodiversity

13. Impact on surrounding agricultural fields around the proposed mining Area.
14. Impact on soil flora & vegetation around the project site.
15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.
16. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.
17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.

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

Forests

19. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.

Water Environment

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

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Energy

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

Climate Change

32. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.
33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.

Mine Closure Plan

34. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.

EMP

35. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.
36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.

Risk Assessment

37. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.

Disaster Management Plan

38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.

Others

39. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.

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40. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.
41. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

A. STANDARD TERMS OF REFERENCE

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

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hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.

12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study

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area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

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

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should
also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should
be undertaken to assess their requirements, and action programmes prepared and submitted

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accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers

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present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed

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along with budgetary allocations.

37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed:-

a) Executive Summary of the EIA/EMP Report

b) All documents to be properly referenced with index and continuous page numbering.

c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.

e) Where the documents provided are in a language other than English, an English translation should be provided.

f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

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h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

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

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be 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

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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 is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest , eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.

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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, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website http://www.moef.nic.in/ may be referred.

- After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
- The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

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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, Krishnagiri District.
7. Stock File.

ABSTRACT

Mines and Quarries – Minor Mineral – Grey Granite –Krishnagiri District – Bargur Taluk - Over an extent of 1.56.5 hectares of patta lands in S.F. Nos.353/2A1B (0.24.5), 353/2A7 (0.88.0), 353/2B (0.06.0), 353/2C1 (0.05.5) and 353/2E1A (0.32.5) of Jegadevipalayam Village – Quarry Lease Application of Thiru E.Jagadeesan – Grant of quarry lease - Sanctioned – Orders – Issued.

INDUSTRIES (MME.2) DEPARTMENT

G.O. (3D) No.42

Dated: 20.09.2018
திருவள்ளுவர் ஆண்டு 2049,
விளம்பி வருடம், புரட்டாசி 4.

Read:

1) From Thiru E.Jagadeesan, Quarry Lease Application dated: 7.9.2016.
2) From the District Collector, Krishnagiri Letter Roc.501/2016/Mines-1, dated: 30.1.2017
3) From the Commissioner of Geology and Mining, File No.993/MM5/2017, dated: 20.2.2017.
4) Government Letter No.5137/MME.2/2017-1, Dated 8.09.2017.

Read also:

5) From the Commissioner of Geology and Mining, Letter No.993/MM5/2017, dated: 13.2.2018.
6) From the Chairman /District Collector, Krishnagiri Letter No.03/DEIAA – KGI/EC No.104/2018, dated 27.8.2018

ORDER:

In his application first read above, Thiru E.Jagadeesan has applied for grant of lease for quarrying Grey Granite over an extent of 1.56.5 hectares of patta lands in S.F. Nos.353/2A1B (0.24.5), 353/2A7 (0.88.0), 353/2B (0.06.0), 353/2C1 (0.05.5) and 353/2E1A (0.32.5) of Jegadevipalayam Village in Bargur Taluk, Krishnagiri District for a period of 20 years under rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959.

2. In their references second and third read above, the District Collector, Krishnagiri and the Commissioner of Geology and Mining have recommended and forwarded the quarry lease application of Thiru E.Jagadeesan to the Government for passing orders.

3. Based on the reports of the District Collector, Krishnagiri and the Commissioner of Geology and Mining, the Government have examined the quarry lease application of the applicant and communicated the area recommended by the Commissioner of Geology and Mining as precise area and requested the applicant in the reference fourth read above to furnish the approved Mining Plan as per sub-rule (13) of rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959 through the Commissioner of Geology and Mining and to produce environmental clearance certificate from the DEIAA. In his reference 5th read above the Commissioner of Geology and Mining has furnished the approved mining plan as per sub-rule (13) of rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959, subject to the condition that the applicant shall obtain the Environmental Clearance as per the orders of the Hon'ble Supreme Court of India dated: 27.2.2012 in I.A. No.12-13/2011 in SLP (C) No.19629/2009 and as per the Office Memorandum No.L11011/47/ 2011-1A II(M), dated: 18.5.2012 of Ministry of Environment and Forest, Government of India. The District Level Environment Impact Assessment Authority in their reference 6th read above have accorded Environment Clearance for mining in the above said area subject to certain conditions.

4. In the circumstances detailed above, the Government after careful consideration have decided to grant of lease to quarry Grey Granite to Thiru E.Jagadeesan in the above patta lands. Accordingly, in exercise of the powers conferred under Rule 19-A of the Tamil Nadu Minor Mineral Concession Rules, 1959, the Governor of Tamil Nadu hereby grant quarry lease to Thiru E.Jagadeesan for quarrying Grey Granité over an extent of 1.56.5 hectares of patta lands in S.F. Nos.353/2A1B (0.24.5), 353/2A7 (0.88.0), 353/2B (0.06.0), 353/2C1 (0.05.5) and 353/2E1A (0.32.5) of Jegadevipalayam Village in Bargur Taluk, Krishnagiri District for a period of twenty years, subject to the conditions specified in the annexure to this order and also the following special conditions along with all the conditions imposed by the District Level Environment Impact Assessment Authority in the reference 6th read above:

i) A safety distance of 7.5 meters should be left out for the adjacent patta lands.

ii) A safety zone of [illegible] Government land in S.F.Nos.373 is situated on the South side of the applied area in S.F.No.353/2A7 and Government land in S.F.No.350 is situated on the west side of the applied area in S.F.No.353/2A1B

iii) A safety distance of 10 meters should be left out for the Parai poramboke situated in S.F. No. 354 and 373/1

iv) A safety Zone of 50 Meters should be left out for the Oni Poramboke land in SF.No.350.

v) The Electrical line passing North-South situated almost at the centre of the applied area should be shifted 50 meters away from the applied area before execution of lease deed.

vi) No hindrance shall be caused to the adjacent pattadars lands and to the Government parai poramboke lands while quarrying and transportation of granite

vii) Blasting of rocks and transportation of vehicles carrying granite should not carried out from 6.00 PM to 6.00 AM.

viii) The conditions mentioned in G.O.No.79, Industries Department, dated 6.4.2015 should be complied with.

ix) The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows:-

- The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.

- The applicant shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan and submit in soft copy (CD)

x) The lessee shall strictly adhere to the statutory and safety requirements.

xi) The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.

xii) 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 Govt., or any other authority.

xiii) The lease grantee shall submit scheme of mining; mine closure plan and other statutory requirements within the time stipulated for sub-mission of the above, as per rules.

xiv) The District Collector, Krishnagiri shall obtain a sworn-in affidavit from the appellant containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.12789/ MMB-2/2002-7, Industries Department, dated 09.01.2003 are complied with.

5. The District Collector, Krishnagiri is directed to take necessary further action for the execution of agreement in the prescribed form and communicate the date of execution of agreement to the Government and Director of Geology and Mining.

6. The District Collector, Krishnagiri is also directed to verify and furnish a certificate to the effect that all the lease deed conditions and other conditions mentioned in paragraph 4 above have been complied with, duly incorporated in the lease agreement and send it to the Government. The District Collector, Krishnagiri is also instructed to include all the conditions imposed by District Level Environment Impact Assessment Authority in the reference 6th read above.

(BY ORDER OF THE GOVERNOR)

K.GNANADESIKAN
ADDITIONAL CHIEF SECRETARY TO GOVERNMENT

To
Thiru E.Jagadeesan,
S/o.Egananthan
No.5/50, Thiruvalluvar Nagar,
Krishnagiri-635 001

The Director of Geology and Mining,
Guindy, Chennai – 600 032.

The District Collector, Krishnagiri District

Copy to:
The Special PA. to Hon'ble Minister
for Law, Courts and Prisons, Chennai-600 009.
The Industries (OP.II) Department, Chennai – 600 009.
SF/SC.

FORWARDED BY ORDER

S. Vasanthakumar 20.9.18
SECTION OFFICER

20.9.18

G.O (3D) No.42,Industries(MME.2) Department,Dated:20.09.2018

1. The applicant shall execute an agreement within one month from the date of receipt of the Government order.
2. The date of commencement of the period of lease shall be the date on which the agreement is executed.
3. The applicant shall pay seigniorage or dead rent whichever is more in respect of the actual quantity of granite removed at the rate prescribed from time to time in Appendix–II of the Tamil Nadu Minor Mineral Concession Rules, 1959.
4. The applicant should keep correct accounts showing the quantities and other particulars of all minerals obtained from the lands permitted to quarry.
5. The applicant should also allow any officer authorized by the District Collector or any other officer authorized by the State Government in this behalf to inspect the area and verify records and accounts and furnish such information under the terms as may be required by them.
6. The applicant shall carry out the quarrying operations in skilful, scientific systematic manner keeping in view, the proper safety of the labour conservation of minerals and preservation of environment ecology.
7. The applicant shall allow any officer authorized by the District Collector and Director of Geology and Mining to enter upon the area and inspect for the purpose mentioned in conditions 4 and 6 above and also carry out the directions issued to the satisfaction of the above said authorities.
8. No quarrying activities connected there to shall be done before the execution of the agreement and registration is at the cost of the applicant.
9. No hindrance shall be caused to the adjoining pattadars or public.
10. The applicant should restrict his mining operation strictly within the permitted area as defined in the sketch.
11. The terms and conditions are also subject to such further modifications, deletion and additions alternation as may be ordered by the Government to be included in the agreement to be executed for this purpose.
12. The applicant should maintain at his cost proper signboards indicating the survey numbers, years of the lease, name of the lease holder and the lease period to the satisfaction of the District Collector, Director of

Geology and Mining and maintain it all time at the quarry site.

13. No quarrying shall be done within a distance of 7.5 meters of the boundaries of the permitted area.
14. The applicant should make his own arrangement to form the approach road from the public road to the place of his quarry.
15. The lessee shall strictly adhere to the statutory and safety requirements.
16. The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.
17. 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.
18. That the approval of the mining plan does not in any way imply the approval of the Government in terms of any other provision, Mines and Minerals (Development and Regulation) Act, 1957, or any other connected Laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act 1884, (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Minerals Concession Rules, 1959.
19. That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

K.GNANADESIKAN
ADDITIONAL CHIEF SECRETARY TO GOVERNMENT

//True Copy//

S. Vasanthakumar
Section Officer 20.9.18

20.9.18

S. SURIYAKUMAR
M.Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

3866/2018

भारतीय गैर न्यायिक INDIA NON JUDICIAL

एक हजार रुपये ONE THOUSAND RUPEES

रु.1000 Rs.1000

INDIA

COMMISSIONER OF GEOLOGY AND MINING

தமிழ்நாடு तमिलनाडु TAMILNADU

AP 842243

B.N. MUNIRAJ
S.V.Lc: 7353/83
Krishnagiri, Tamilnadu

27451
16-10-2018

APPENDIX V

FORM OF JOINT AGREEMENT FOR QUARRYING AND CARRYING AWAY MINOR MINERALS BY LESSEES IN RYOTWARI LANDS IN WHICH THE MINERALS BELONG TO GOVERNMENT.

G.O (3D) No 42 Industries (MME.2) Department Dated 20.09.2018

THIS AGREEMENT MADE THIS 9th day of NOV – 2018 between 1) Thiru E. Jagadeesan S/o. Eganathan, No. 5/50 Thiruvalluvar Nagar, Krishnagiri 635 001 2) Thiru S.S Jameeluddin S/o Salavudeen Muslim D.No. 1/449. TNHB, Phase-II Krishnagiri 635 001 (hereinafter referred to as "the registered holder" which expression shall where the context so admits include also their heirs, exe cutors, administrators, legal representatives and assigns) of the first part and Thiru E. Jagadeesan S/o. Eganathan, No. 5/50 Thiruvalluvar Nagar, Krishnagiri 635 001 (hereinafter refereed to as "the lessee" which expression shall where the context so admits shall include heirs, executors, administrators, legal representatives and

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assigns) of the second part and the Governor of Tamil Nadu (herenafter referred to as the Government which expression shall where the context so admits shall include his successors in office and assigns) of the third part.

WHEREAS the registered holder holds the lands described in the schedule hereto and intended to leased out to the lessee of the said lands for the purpose of quarrying GREY GRANITE in the said lands and to deposit mining waste in the said lands and has lodged with Collector the lease and accurate map or sketch of the said lands.

AND WHEREAS the lessee or tenant of the registered holder has made application to the Government through the Collector of the district of Krishnagiri (hereinafter referred to as "the Collector") seeking grant of quarrying lease for quarrying GREY GRANITE in the said lands and to deposit mining waste in the said lands and has lodged with the Collector an accurate map or sketch of the said lands;

AND WHEREAS, the Government have granted a quarrying lease to the lessee allowed him to commence quarrying operations for GREY GRANITE in the said lands and to deposit mining waste thereon by the lessee in the G.O (3D) No. 42 Industries (MME.2) Department dated 20.09.2018.

AND WHEREAS, the Collector, is prepared to allow the said registered holder or lessee to commence mining operations and to deposit mining waste in or on the said lands described in the schedule for a term of 20 years beginning on 9th day of NOV-2018 and ending on

8th day of November – 2038 upon the registered holder and the lessee entering into the agreement here in contained.

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AND WHEREAS the lessee has deposited with the collector, the sum of Rs. 40,000/- (Rupees fourty thousand only) vide challan No. Nil dated 10.10.2018 remitted at state bank of India, Krishnagiri as security for the due performace of the covenants, agreements and provisos or damage which may be incurred to the Government by reason of any of the said lands described in the schedule hereto being rendered unfit for cultivation by the mining operations therein or by the deposit of mining waste thereon by either the registered holders or the lessee.

AND WHEREAS, the lessee has at the request of the registered holder and in consideration of such approval by the Collector of the mining operations as herein before recited agreed to join in these presents for the purpose of entering into covenants, agreements and provisos hereinafter contained as surety for the registered holder.

NOW THESE PRESENTS WITNESS and registered holder and the lessee do hereby jointly and severally and each of them both individually hereby covenant and agree with the Government as follows:-

1. To carry on mining operations during the said term in a proper and workman like manner and to deposit mining waste on the lands described in the schedule hereto and to answer and to account at all reasonable times to Government for all acts and defaults committed by any servants, agents or workmen employed by the registered holders or lessee in carrying on such operaions or in making such deposits.

2. To pay on the 9th day of Nov –2018 next and 9th day on the November day of every suceeding year so long as the operations oforesaid are carried on, upto the Treasury/ State Bank of India at Krishnagiri to the credit of the Government in addition to the land assessment for the time being payable in respect of the said lands, seigniorage on the minerals mined or dead rent which ever is higher for every year at the rates prescribed by the Government from time to time in the Appendix II of the TamilNadu Minor Mineral Concession Rules 1959.

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3. To abide by the rules prescribed by the Government from time to time regarding quarrying of minor minerals.

4. To keep correct accounts in such form as the collector shall from time to time required and direct showing the quantities and other particulars of all minerals obtained by the registered holders or the lessee from the said lands and also the number of persons employed in carrying on the said mining operations therein and to prepare and maintain from time to time when so directed by the said collector complete and correct plans of all mines and working in the said lands and to allow any officer thereunto authorised by the Commissioner/ Director of Geology and Mining, Tamil Nadu, from time to time and at all times to examine such accounts and any such plans and to supply and furnish when so required all such information and returns regarding all or any of the matters aforesaid as the Government may from time to time required and direct.

5. To allow any officer authorized by the Commissioner/Director of Geology and Mining, Tamil Nadu in that behalf from time to time and at all times to enter upon any part of the said lands where mining operations may be carried on for the purpose of inspecting the same.

6. To forthwith send to the Collector a report of any accident which may occur at or in the said land and also of the discovery therein of any minerals other than GREY GRANITE.

7. Not to claim any remission of assessment in respect of any of the said lands which shall be rendered unfit for surface cultivation by carrying on of any mining operations or by the deposit of mining waste unless thirty times of the assessment thereon has been deducted under proviso 2 here under.

PROVIDED ALWAYS and it is hereby further agreed by and between the parties as follows:-.

1. That it shall be lawful for the registered holder or lessee as the case may be at any time to cease mining operations under these presents provided the registered holder or lessee shall pay to the Government or the Collector the land assessment, cess and seigniorage payable by the registered holder or the lessee under these presents upto to the end of the year in which the registered holder.

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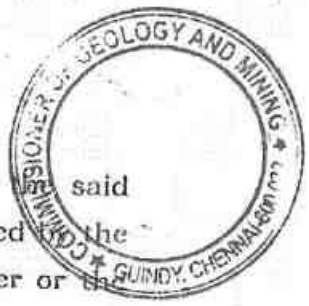

or the lessee shall cease such mining operations and shall restore the said lands fence or fill in abandoned pits and excavations therein if required by the collector as next hereinafter provided and upon, the registered holder or the lessee so doing these presents shall cease and determine.

2. That in case the registered holder shall relinquish the whole or part of the said lands in case of the expiry or sooner determination of this agreement then and in any such case, the registered holder in the case of relinquishment and the registered holder and the lessee in other cases shall restore said lands or the area relinquished or so much thereof as the collector shall required to be restored to a state fit for cultivation and shall securely and permanently fence or fill in all abondoned pits and excavation therein as the Collector shall require to be so fenced or filled in and incase the registered holder or the lessee shall fail, or neglect any such lands with the registered holder or the lessee be required to restore to a state fit for cultivation or to so fence or fill in any such abandoned pit or excavation which the registered holders or the lessee shall be required to so fence or fill them and in any such case it shall be lawful for the collector to so restore any such lands or as the case may be so fence or fill in any pit or excavation at the expense of the registered holders or lessee and to apply the said sum of Rs 40,000/- (Rupees fourty thousand only) so deposited in or towards the cost of so doing and to deduct from the amount of the said deposit and retain on behalf of the Government a sum equal to thirty times the assessment of the said lands which shall have been rendered unfit for cultivation. If, however the amount of deposit is not sufficient to cover the cost of such restoration or fencing or filling as the case may be or to meet thirty times the assessment of the area rendered uncultivable, it shall be lawful for the Government to recover the balance by resort to Civil Court.

3. That all land assessment, cess and seigniorage fee or dead rent payable under these presents shall be recoverable under the provisions of the Tamil nadu Revenue Recovery Act, 1864, or any subsisting statutory modification thereof, as if the same were arrear of land revenue.

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That in the event of any breach of the registered holder/ lessee of any of the conditions of these presents, it shall be lawful for the Government to levy enhanced seigniorage subject to the maximum of five times the normal rate or for the collector to give notice in writing to the registered holder/lessee of his intention to cancel these presents whereupon the same shall stand cancelled but without prejudice to any rights which the Government may have against the registered holder/ lessee in respect of any antecedent claim or breach of covenant or condition.

5. That any notice to be given to registered holder/ lessee may be addressed to his last known place of abode and where a notice has been so addressed it shall be deemed to have been duly served for the purpose of these presents.

6. Should any question or dispute arise regarding an agreement executed in pursuance of these rules or any matter or thing connected therewith or the powers of the registered holder/ lessee thereunder, the amount or payment of the seigniorage fee or dead rent or area assessment made payable thereby, the matter in issue shall be decided by the Commissioner/ Director of Geology and Mining. In case the registered holder /lessee is not satisfied with decision of the Director of Geology and Mining, the matter shall be refereed to the State Government.

7. The registered holder/lessee shall abide by the conditions laid down in the payment of wages Act, 1936 (central Act Iv of 1936), Minimum Wages Act 1948 and Rules 1950, the Mines Act, 1952 (Central XXX V of 1952) the Indian Explosive Act, 1884. (Central Act IV) and Mines and Mineral (Development and Regulation) Act 1957 and the rules and regulations made thereunder.

8. The lessee shall comply with the provisions of the labour laws applicable to quarrying. Any contravention of the provisions shall attract legal proceedings of the appropriate authority.

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9. To put up boundary pillars and to effectively fence off the same demised pieces of land from the adjoining lands and to keep the fences in good repairs and conditions during the period of lease.

10. The lessee shall not assign lease or part with the possession of the said lands or any part thereof for the whole or any part of the said term without previous permission in writing to the Government.

11. The lessee should not engage child labour in the quarrying activities.

12. That this lease may be terminated in respect of whole or any part of the promises by six months notice in writing on either side.

13. The lessee shall erecte fence at his own cost in between the adjacent poramboke lands and the leased out area and if any fault occur the lessee must held responsible for that ant abide by the action taken by the Government.

14. Anticipated seigniorage for the minerals to be quarried from the demised land is Rs. 8,70,28,216/- (Rupees eight crores seventy lakhs twenty eight thousand two hundred and sizteen only) area assessment of Rs. 9,390/- (Rupees ninteen thousand three hundred and ninty only) and security deposit amount of Rs. 40,000/- were taken into account for the purpose of calculation of stamp duty.

15. The lease period starts from the 9th day of November -2018 and ends on the 8th day of November - 2038.

16.The registered holder/ lessee shall put up boundary pillars and to effectively fence off the same demised pieces of land from the adjoining lands and to keep the fences in good repairs and condition during the entire period of lease.

17. The registered holder/ lessee shall not assign lease or part with the possession of the said lands or any part thereof for the whole or any part of the said term without previous permission in writing to the Government.

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21. Special Conditions:

(i) A safety distance of 7.5 meters should be left out for the adjacent patta lands.

(ii) A safety zone of 10 meters should be left out for the Government land in S.F No.s 373/1 is situated on the South side of the applied area in S.F No. 353/2A7 and Government land in S.F No. 350 is situated on the west side of the applied area in S.F No. 353/2A1B.

(iii)A safety distance of 10 meters should be left out for the Parai Poramboke situated in S.F No. 354 and 373/1.

(iv) A safety zone of 50 meters should be left out for the Oni Poramboke land in S.F No. 350.

(v) The electrical line passing North-South situated almost at the centre of the applied area should be shifted 50 meters sway from the applied area before execution of lease deed.

(vi) No hindrance shall be caused to the adjacent pattadars lands and to the Government Parai poramboke lands while quarrying and transportation of granite.

(vii) Blasting of rocks and transportation of vehicles carrying granite should not carried out from 6.00 P.M. to 6.00 A.M.

viii) The conditions mentioned in G.O Ns. 79, Industries Department dated 6.4.2015 should be complied with.

ix) The lessee shall strictly adhere to the statutory and safety requirements.

x) The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.

xi) 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.

xii) The lessee grantee shall submit scheme of mining: mine closure plan and other statutory requirements within the time stipulated for submission of the above as per rules.

xiii) The lessee should comply the instructions issued in Government letter No. 12789/MMB2/2002-7 Industries Department dated 9.1.2003.

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(xv) The lessee should strictly adhere all the conditions imposed by the Chairman/District Collector, District Environment Impact Assessment Authority Krishnagiri District in his letter No. 03/DEIAA-KGI/EC No.104/2018 Dated 27.08.2018.

22. Conditions:

(1). The date of commencement of the period of lease shall by the date on which the agreement is executed.

(2). The lessee shall pay seigniorage or dead rent whichever is more in respect of the actual quantity of granite removed at the rate prescribed from time to time in Appendix-II of the Tamil Nadu Minor Mineral Concession Rules, 1959.

(3). The lessee should keep correct accounts showing the quantities and other particulars of all minerals obtained from the lands permitted to quarry.

(4).The lessee should also allow any officer authroized by the District Collector or any officer authorised by him in this behalf or any other officer authorised by the State Government in this behalf to inspect the area and verify records and accounts and furnish such information under the terms as may be required by them.

(5). The lessee shall carry out the quarrying operations in a skilful, scientific systematic manner keeping in view the proper safety of the labour onservation of minerals and preservation of enviornment ecology.

(6). The lessee shall allow any officer authorised by the District Collector and Director of Geology and Mining to enter upon the area and inspect for the purpose mentioned in conditions 3 and 5 above and also carry out the directions issued to the satisfaction of the above said authorities.

(7). No quarrying activites connected there to shall be done before the execution of the agreement and registration is at the cost of the lessee.

(8). No hindrance shall be caused to the adjoining pattadars or public.

(9). The lessee should restrict his mining operations strictly within the permitted area as defined in the sketch.

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(10). The lessee should maintain, at his cost proper signboards indicating the survey numbers, years of lease, name of the lessholder and lease period to the satisfaction of the District Collector and Commissioner/ Director of Geology and Mining and maintain it all time at the quarry site.

(11). No quarrying shall be made within a distance of 7.5 mts of the boundaries of the permitted area.

(12). The lessee should make his own arrangement to form the approach road from the public road to the place of his quarry.

(13). The lessee shall strictly adhere to the statutory and, safety requirements.

(14). The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.

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

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

(17). That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

23. Conditions imposed by the District Environment Impact Assessment Authority.

I. i) The Environmental Clearance is granted to mining of grey granite for the production quantity of 9374 Cu.m of Grey Granite for the period of 5 years from the date of execution of the mining lease period.

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ii) The approved quantity of Grey Granite to be quarried = 93[illegible] cbm

iii) Depth of mining permitted = 6 mts (including topsoil and [illegible]cn) from a period of 5 years).

II. A. Conditions to be complied before commencing quarrying operations:-

(1). The lessee has to obtain land use classification as industrial use before issue/ renewal of mining lease.

(2). NOC from the Standing committee of NBWL shall be obtained, ifprotected areas are located within 10km from the proposed project site.

(3). The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.

(4). 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.

(5) 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.

(6). The proponent shall ensure that First Aid Box is available at site.

(7). The excavation activity shall not alter the natural drainage pattern of the area.

(8). The Excavated pit shall be restored by the project proponent for useful purposes, IN this regard, the proponent shall deposit a sum of Rs. 5,00,000/- (Rupees Five lakshs only) in the name of District Collector Krishnagiri in the form of fixed deposit . The said fixed deposit. Will be refunded after restoration.

(9). The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.

(10). The quarrying operation shall be restricted between 7AM and 5 PM.

(11). 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.

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(12). A minimum distance of 15 mts. From any civil structure shall be kept from the periphery of any excavation area.

(13). 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.

(14). The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.

(15). Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.

(16). Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.

(17). The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.

(18). Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.

(19). A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.

(20). The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009. (GLC = Ground Level Concentration), (NAAQ= Noise and Ambient Air Quality).

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(22). The following measures are to be implemented to reduce Noise Pollution

(i). Proper and regular maintenance of vehicles and other equipment.

(ii). Limiting time exposure of workers to excessive noise.

(iii). The workers employed shall be provided with protection equipment and earmuffs etc.

(iv). Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

(23). Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.

(24). Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.

(25). Rain water harvesting to collect and utilize the entire water falling in land area should be provided by construction of a storage tank with a capacity of 5,00,000 litrs and the rain water harvested in the entire quarry area should be stored in it and used for the quarry purpose like dust prevention, wet drilling, providing water for green belt etc.

(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.

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(29). Waste oils, used oils generated from the EM machines, mining operations, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.

(30). Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(31). Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be letinto 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 beof sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season. Photographs of the silt trap should be furnished before commencing quarry operation.

(32). The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, that the ground water is getting depleted due to the quarring activity, necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Dharmapuri shall monitor.

(33). No tree-felling shall be done in the leased area, except only with the permission from competent Authority.

(34). To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution and it should be monitor by the District Environmental Engineer, TNPCB. Hosur on yearly basis.

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(35). It shall be ensured that the total extent of nearby quarries located within 500 meter radius from the periphery of this quarry is not exceeding 5 hectares within the mining lease period of this application.

(36). It shall be ensured that there is no habitation is located within 500 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site

(37). Ground water quality monitoring should be conducted once in 3 Months.

(38). Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.

(39). Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF,GOI once in three months.

(40). Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF , GOI periodically once in six months.

(41). Bunds to be provided at the boundary of the project site and it should be properly maintained.

(42). 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.

(43). At least 10 Neem trees should be planted around the boundary of the quarry site.

(44). Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.

(45). The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity

Registered holders

LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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COMMISSIONER OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032 *

(46). The Project Proponent shall provide solar lighting system to the nearby

(47). The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.

(48). Rainwater shall be pumped out Via Settling Tank only

(49). Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.

(50). As per MoEF & CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry &Wild Life angle including clearance from obtaining committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.

(51). 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.

(52) Safety requipments to be provided to all the employees.

(53) Safty distance of 50 mts has to be provided incase of railway reservoier canal/ Odai.

(54) The Assistant / Deputy Director Department of Geology and Mining shall ensure that the proponent has engaged the blaster with valid Blasting license / certificate obtained from the competent authority before execution of mining lease.

(55) 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.

(56) 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.

(57) The proponent shall furnhish the date obtained from the Public Works Department regarding the details of ground water table in the quarry site.

Registered holders

LESSEE

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(58) The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh case before execution of mining lease.

(59) The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to the existing activity before execution of mining.

(60) Heavy earth machinery equipments if utilized, after getting approval from the competent authority.

(61) The Environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur.

(62) The Assistant Director Public Works Department, Ground Water Division Dharmapuri shall monitor whether the quarrying activity is carried out above the ground water level on yearly basis.

(63) NOC for sanitary certificate shall be obtained from the Deputy Director of Health Services, Krishnagiri.

(64) Yearly medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Krishnagiri,

(65) Closed circuit camera should be erected at the quarry site and the passage of vehicles in and out of the quarry should be recorded and the footage of the recordings of the camera should be maintained and should be produced before the enforcing officials when ever called for.

(66) Vehicles used for transportation of quarried materials should be fitted with GPS and monitored.

(67) Pit Mouth register should be maintained in on line.

(68) Auditor report on the annual turnover amount should be submitted to the District Collector within one month from the end of the financial year.

(69) 02.5% of the turn over amount should be utilized for the CSR activity after consultation with the District Collector.

B. General Conditions:

(1). EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.

(2). The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.

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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.Registered holders.

(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.

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(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 obsolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.

(17). This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.

(18). The DEIAA, Krishnagiri may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.

(19). The DEIAA, Krishnagiri may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this DEIAA.Krishnagiri 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.

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(21). The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules,2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

(22). Any other conditions stipulated by other Statutory/Government authorities shall be complied.

24. The lessee should get the consent for operation from the Tamil Nadu Pollution Control Board before the commencement of quarrying operation.

25. The lessee should sent the notice for opeining of the quarry to the Director of Mines safety, Bangalore.

26. Quarrying operation should be carried out only after appointing Mines Manager/Mines Mate and Foremen.

27. At any cost the blasting activity should be carried out under the Supervision of Mines Mate.

28. In any accident occur in the quarry area the lessees should give intimation to the Director of Mines safety Bangalore and District Collector, Krishnagiri at once and lessee is solely responsible for any violation.

29. The conditions imposed by the TNPCB in the consent order should be adhered without any ommission.

30. The Environmental clearance and the consent of the TNPCB should be renewed periodically without any lapse.

31. If any illicit quarrying is found in the area Overn an extent of 1.56.5 Hecters in S.F. Nos.353/2A1B (0.24.5), 353/2A7 (0.88.0), 353/2B (0.06.0), 353/2C1 (0.05.5) and 353/2E1A (0.32.5) of Jagadevipalayam Village, Bargur Taluk, Krishnagiri District before the date of execution of lease deed, this lease deed is liable to be cancelled and criminal action will be initiated.

Registered holders

LESSEE

DISTRICT COLLECTOR,
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32. If the quarry area is situated within 10 km distance from any protected areas NOC from the Standing committee of NBWL should be obtained before commencing the quarry operation.

33. If the lease holder wants to quarry more than the quantity permitted in the environmental clearance within the lease period, modified mining plan / scheme and Environment Clearance for the additional quantity should be submitted.

THE SCHEDULE

TALUK : BARGUR

VILLAGE : JAGADEVIPALAYAM

Sl. No.	Survey Field number	Extent Leased out in Hectares	Boundary			
			North S.F No.	East S.F No.	South S.F No.	West S.F No.
1.	353/2A1B	0.24.5	353/2A1A	353/2A7	353/2E1A, 353/2B, 352/2C1	350, 352
2	353/2A7	0.88.0	353/2A6,	353/2A8	353/2D, 353/2C2, 373/1	353/2A1B, 353/2B 353/2C1
3	353/2B	0.06.0	353/2A1B	353/2C1	353/2E1A	353/2E1A
4	353/2C1	0.05.5	353/2A7	353/2C2, 353/2D	353/2E1A	353/2B
5	353/2E1A	0.32.5	353/2A1B, 353/2B, 353/2C1	353/2A1B, 353/2B, 353/2C1	353/2E1B,	352/1A, 352/2, 352/3
	Total	1.56.5				

Registered holders

DISTRICT COLLECTOR,
KRISHNAGIRI.

LESSEE

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IN WITNESS where of 1) Thiru E. Jagadeesan S/o. Eganathan, No. 5/50 Thiruvalluvar Nagar, Krishnagiri 635 001 2) Thiru S.S Jameeluddin S/o Salavuddin, Muslim D.No. 1/449. TNHB, Phase-II Krishnagiri 635 001 "the registered holders", Thiru E. Jagadeesan S/o. Eganathan, No. 5/50 Thiruvalluvar Nagar, Krishnagiri 635 001 "the Lessee" and Thiru Dr. S. PRABHAKAR, I.A.S the Collector of Krishnagiri District acting for and on behalf of and by the order and direction of the Governor of Tamil Nadu have hereunto set their hands.

Jameel

Registered holders

DISTRICT COLLECTOR,
KRISHNAGIRI.

LESSEE

Signed by the above named
in the presence of

1. N. NAZAR
S/o NANEY JAAN
Anasampatti - Post
Pochampalli - Tk
Krishnagiri - Dt

2. C. DHANDAPANI KARTHIK
S/o CHINNAPPAN
No. 12F, ... Cross,
... Nagar,
Krishnagiri - 635001.

Signed by the above named
in the presece of

Collectorate, Krishnagiri

Collectorate, Krishnagiri.

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Sub-Registrar

THE SEAL OF THE SUB-REGISTRAR

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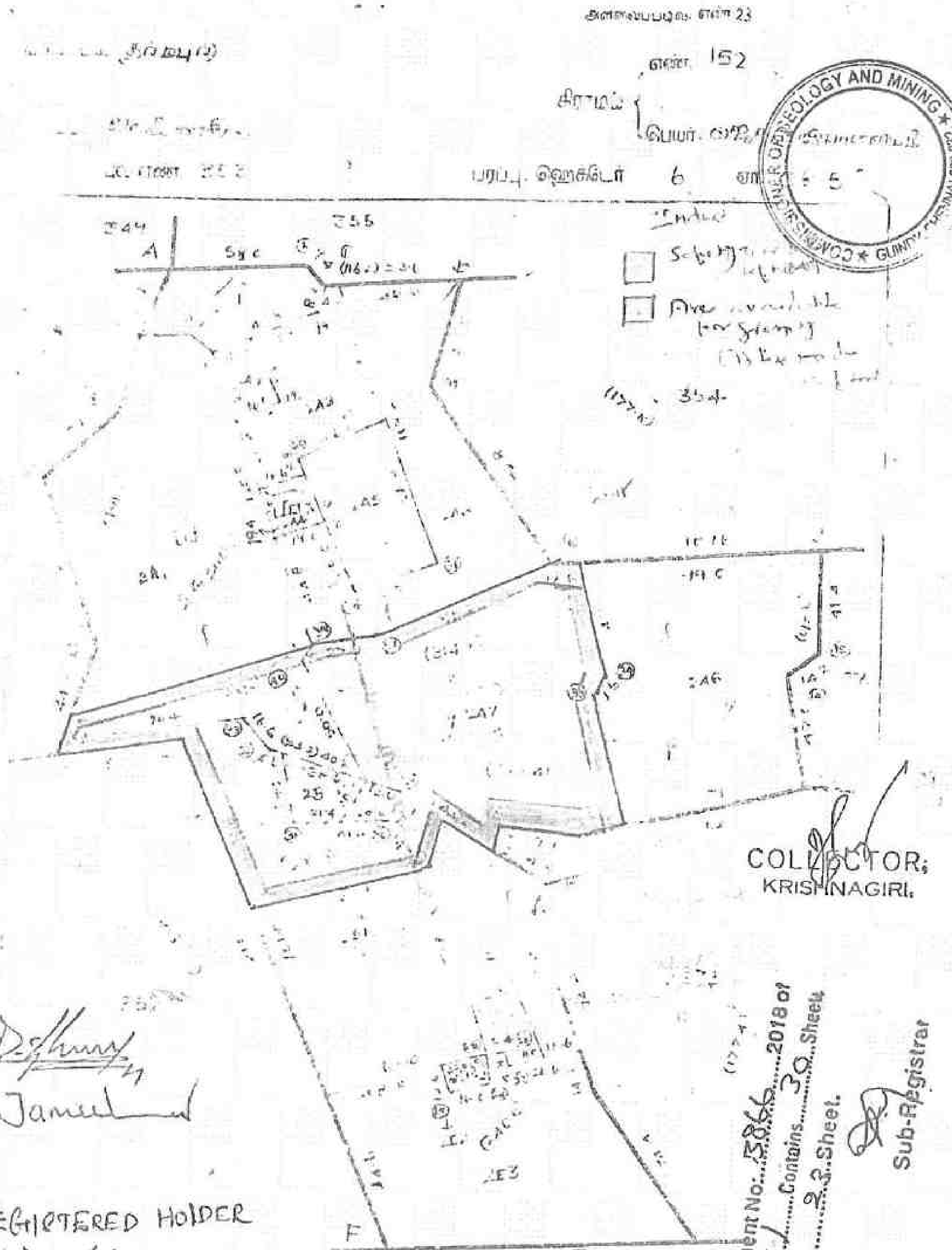

COLLECTOR;
KRISHNAGIRI.

REGISTERED HOLDER

LESSEE

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Sub-Registrar

Village Administrative Officer
135, JA... ...VI PALAYAM
Bargur Tk, Krishnagiri Dt.

From
Dr. S. Prabhakar, I.A.S.,
District Collector,
Krishnagiri.

To
The Sub Registrar,
Bargur.

Roc 501/2016 (Mines-1) dated 20.11.2018.

Sir,

Sub: Mines and Minerals – Minor Mineral – Grey Granite - Krishnagiri District – Bargur Taluk – Jagadevipalayam Village – Patta land in S.F Nos. 353/2A1B etc - over an extent 1.56.5 Hect. quarry lease for Grey Granite granted to Thiru E. Jagadeesan, S/o Eganathan, No. 5/50 Thiruvalluvar Nagar, Krishnagiri – Lease deed agreement executed - sent for registration – regarding.

Ref: G.O (3D) No. 42 Industries (MME-2) Department dated 20.09.2018.

--

In the order cited, the Government have granted a quarry lease for Grey Granite over an extent of 1.56.5 Hect. in S.F Nos. 353/2A1B (0.24.5), 353/2A7 (0.88.0), 353/2B (0.06.0), 353/2C1 (0.05.5) and 353/2E2A (0.32.5) of Jagadevipalayam Village of Bargur Taluk, Krishnagiri District for a period of twenty years from the date of execution of lease deed under the provisions of Rule 19 -A of the Tamil Nadu Minor Mineral Concession Rules, 1959 to Thiru E. Jagadeesan, S/o Eganathan, No. 5/50 Thiruvalluvar Nagar, Krishnagiri. The lease agreement was executed on 09.11.2018 and the lease period is twenty years from .09.11.2018 to 08.11.2038.

The lessee Thiru E. Jagadeesan, S/o Eganathan, No. 5/50 Thiruvalluvar Nagar, Krishnagiri have been instructed to register the lease deed agreement at the Sub Registrar office at Bargur.

In this connection it is informed that the stamp duty worked out on the basis of the Anticipated seigniorage fee calculated on the total of 37496 CBM of Grey Granite (as per approved mining plan) to be removed during the entire lease period of twenty years, security deposit and area assessment remitted by the lessee is as detailed below:

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Sub-Registrar

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இந்திய அரசாங்கம்
Government of India

Unique Identification Authority of India

4404 3992 4873

சாதாரண மனிதனின் அதிகாரம்

இந்திய அரசாங்கம்
Government of India

Unique Identification Authority of India

9463 9864 9412

சாதாரண மனிதனின் அதிகாரம்

COMMISSIONER GEOLOGY AND MINING ★ GUINDY, CHENNAI-600 032 ★

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COMMISSIONERATE OF GEOLOGY AND MINING * GUINDY CHENNAI-032

भारत सरकार
GOVERNMENT OF INDIA

முகமது ரபி
Mohamed Rafi
பிறந்த நாள் /DOB : 02/06/1971
ஆண் / MALE

5056 0884 6303

ஆதார் - சாதாரண மனிதனின் அதிகாரம்

भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

முகவரி:
S/O: ஆதம் ஷெரிப், வகை 1/351, இராஜாஜி நகர் இரண்டாவது குறுக்கு, கட்டிகானப்பள்ளி, கிருஷ்ணகிரி, கிருஷ்ணகிரி, தமிழ் நாடு, 635002

Address:
S/O: Adam Shariff, DNO 1/351 RAJAJI NAGAR SECOND CROSS, KATTIGANAPALLI, Krishnagiri, Krishnagiri, Tamil Nadu, 635002

1947
1800 300 1947
help@uidai.gov.in
www.uidai.gov.in
P.O. Box No 1947 Bangalore-560 001

भारत सरकार
GOVERNMENT OF INDIA

தௌபிக் ஷெரிப்
Thoufeeq Shariff
பிறந்த நாள் / DOB : 10/04/1988
ஆண் / MALE

6680 7403 9579

சாதாரண மனிதனின் அதிகாரம்

आधार
भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

முகவரி:
தந்தை / தாய் பெயர்: ரஹிமான் ஷெரிப், வகை 1/30, வஹாப் நகர், கட்டிகானப்பள்ளி, கட்டிகானப்பள்ளி, கிருஷ்ணகிரி, தமிழ் நாடு, 635002

Address:
S/O: Rahiman Shariff, D NO 1/30, WAHAB NAGAR, KATTIGANAPALLI, Kattiganapalli, Krishnagiri, Tamil Nadu, 635002

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1800 300 1947
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P.O. Box No. 1947, Bangalore-560 001

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Sub-Registrar

CERTIFICATE UNDER SECTION 42 OF THE INDIAN STAMP ACT 1899

S.No 1702 of 2018

I hereby certify that a sum of ₹ 10,26,520/- (Rupees Ten Lakh Twenty Six Thousand Five Hundred and Twenty only) on account of deficit stamp duty has been levied under section 41 of the Stamp Act in respect of this instrument from Mr. E JAGADEESAN residing at No.5/50, Thiruvalluvar Nagar, Krishnagiri, Tamil Nadu, India, 635001.

Sub Registrar: Bargur
Date: 23/11/2018

Signature of Sub Registrar and Collector under Section 41 of the Indian Stamp Act

Presented in the office of the Sub Registrar of Bargur and fee of ₹ 20,420/- paid at 04:11 PM on the 23/11/2018 by

Left Thumb

Additions as per recitals of document

I have satisfied myself as to the execution of the instrument by Mr. எஸ் பிரபாகர், கிருஷ்ணகிரி, Krishnagiri, Tamil Nadu, India, 635001 (District Collector, Krishnagiri) who is exempted from personal appearance under section 88(1) of the registration act.

Sub Registrar, Bargur

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Sub-Registrar

Claim admitted by

Left Thumb

Additions as per recitals of document

R/Bargur/Book-1/3866/2018

Claim admitted by Left Thumb 	Jameel Additions as per recitals of document

Identified By

1. R. Thoufeer Shariff — Mr. THOUFEEQ SHARIFF Son of RAHMAN SHARIFF No.10, Narayanasamy Reddy Street, Jolarpet, Tirupattur, Vellore , Tamil Nadu, India, 635805.

2. — Mr. MOHAMMED RAFI Son of ADAM SHERIFF No.1/351/ Rajaji Nagar, 2nd Cross, Krishnagiri, Tamil Nadu, India, 635001.

23rd day of November 2018

Rajkumar M
Sub Registrar
Bargur

Registered as Number R/Bargur/Book-1/3866/2018.

Date: 23/11/2018
Bargur

Rajkumar M
Sub Registrar

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COMMISSIONER OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032.

Government of Tamil Nadu
Registration Department
Acknowledgement

Reference Details

SRO Name	Barpur
Application No.	S01LANDV/20181023109625
Transaction No.	REG20181023104674
Transaction Date	23/10/2018

Application Details

Applicant Name	E. JAGADEESAN
Service Type	Document Registration (New) in SRO
Stamp Duty (₹)	870000/-

Payment Details

Name of the Bank	SBI
Bank Ref. No.	IK0UIZC33
Payment Mode	Online
Amount Paid (₹)	870000/-
Payment Status	Success
Payment Date	23/10/2018

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Sub Registrar

COMMISSIONER OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032 *

Government of Tamil Nadu

Registration Department

Acknowledgement

3866/2018

Reference Details

SRO Name	Bargur
Application No.	S01LANDVV201811231248175
Transaction No.	REG201811231192828
Transaction Date	23/11/2018

Application Details

Applicant Name	Jameeluddin
Service Type	Document Registration (New) In SRO
Stamp Duty (₹)	156520/-
Registration Fee (₹)	20000/-
Computer Fee (₹)	175/-
CD Fees (₹)	50/-

Payment Details

Name of the Bank	SBI
Bank Ref. No.	IK00VFBO18
Payment Mode	Online
Amount Paid (₹)	176745/-
Payment Status	Success
Payment Date	23/11/2018

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Sub Registrar

Anticipated Seigniorage fee for 37496 Cbm of Colour granite @ Rs. 2321/- per Cbm (37496 x 2321). : Rs. 8,70,28,216/-

Security Deposit : Rs. 40,000/-

Area Assessment : Rs. 9,390/-

Total : Rs. 8,70,77,606/-

Stamp duty at the rate of 1% : Rs. 8,70,776/-

Total value of Stamp papers : Rs. 8,71,000/-

The lessee deed executed in Rs. 1,000/- stamp paper is enclosed for registration along with a demand draft of Rs. 8,70,000/- Sub Registrar Bargur online booking transaction No. REG201810231046741 Dt. 23.10.2018 at State Bank of India, No. IK00UIZCB3. The same may be is registered at the cost of lease holder.

Further it is informed that the District Collector is exempted from personal appearance for the Registration under section 88 (1) of the Indian Registration Act, 1908.

Encl: Executed lease deed

For Collector,
Krishnagiri

Copy to
Thiru E. Jagadeesan,
S/o Eganathan,
No. 5/50 Thiruvalluvar Nagar,
Krishnagiri

Document No:.....3866...2018 of Book.....1.....Contains.....30.Sheets .....25.Sheet.

Sub-Registrar

S. SURIYAKUMAR
M Sc..M.Phil (Geo). F.C.C (Mining)
Qualified Person

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COMMISSIONER OF GEOLOGY AND MINING GUINDY CHENNAI-600 032

DEPARTMENT OF GEOLOGY AND MINING

From
Dr. R.Palaniswamy, I.A.S.,
Commissioner of Geology and Mining,
Industrial Estate,
Guindy, Chennai - 600 032.

To
The Additional Chief Secretary to Government,
Industries Department,
Secretariat,
Chennai - 600 009.

Lr. No. 993/MM5/2017, dated : 13.02.2018.

Sir,

Sub: Mines and Minerals – Grey granite – Krishnagiri District – Bargur Taluk – Jagadevpalayam Village S.F.Nos.353/2A1B,353/2A7,353/2B,252/2C1 and 353/2E1A – over an extent of 1.56.5 hects., of patta land – Quarry lease application preferred by Thiru.E.Jagadeesan, – precise area communicated by the Government - Approved Mining Plan called for – Mining Plan submitted for approval – approval accorded – Reg.

Ref:
1) Quarry , lease application preferred by Thiru.E.Jagadeesan, dated. 07.09.2016..
2) The District Collector, Krishnagiri letter Roc. No.501/2016/Mines-1 dated: 30.01.2017.
3) This office recommendations made in File No. 993/MM5/2017 Dated 20.02.2017.
4) Government letter No.5137/MME.2/2017-1 dated 08.09.2017.
5) Thiru.E.Jagadeesan, Krishnagiri, letter dated 22 .12.2017.
6) The Deputy Director, Geology and Mining, Krishnagiri letter Roc.No.501/2016/Mines-1 dated.29.12.2017.
7) This office letter no.993/MM5/2017, dated 22.01.2018.
8) The Deputy Director, Geology and Mining, Krishnagiri, letter no.201/2016/Mines dated 03.02.2018.

□□□□□□

Kind attention is invited to the references cited.

TH

The Government in the reference 4th cited have communicated the precise area to the applicant Thiru.E.Jagadeesan with a direction to produce an Approved Mining Plan in respect of the area applied for grant of quarry lease for quarrying Grey granite over an extent of 1.56.5 hects., of patta lands in S.F.Nos. 353/2A1B,353/2A7,353/2B,252/2C1 and 353/2E1A of Jagadevpalayam Village, Bargur Taluk, Krishnagiri District for a period of 20 years as per sub-rule (13) of Rule 19-A of Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating the conditions stipulated in the Government letter dated. 08.09.2017.

3) In response to the precise area communication, vide reference 5th cited, the applicant has submitted 6 copies of draft mining plan duly prepared by the Recognized Qualified Person for approval.

4) The Deputy Director of Geology and Mining, Krishnagiri, in the reference 6th cited has forwarded the draft mining plan for approval and stating that the mining plan has been verified with reference to field conditions and the details such as Geological Reserves, Mineable Reserves, year wise production and development program have been incorporated in the draft mining plan. Further the special condition imposed in the precise area communication are also incorporated in the mining plan. Further it is also reported that there are no existing quarry is situated within the radial distance of 500 meters from this proposed area. But one more proposed area having an extent of 1.56.5 Hects situated within the radial distance of 500 mts from this proposed area. He has further reported that, in the draft mining plan the total geological reserves in the applied area is 47,864 cbm. The mineable reserves is 30,537 cbm @ 30% recovery to assumed depth of 36 mts. The proposed production of the granite for the 1st five years lease period is estimated as 9,374 cbm upto a depth of 6 mts.

5) Further, in the technical report of the Deputy Director (G&M), Krishnagiri, the inferred reserves are calculated for a depth of 20 mts. In the draft mining plan, inferred reserves are calculated for a depth of 36 mts. In this regard, the Deputy Director (Mines) has stated that in draft mining plan the mineable reserves are calculated after left out the area locked in benches and hence he has justified that the reserves estimated in the draft mining plan may be accepted.

6) The draft mining plan submitted in respect of the precise area communication and the report of the Deputy Director of Geology and Mining, Krishnagiri have been examined with reference to the provisions of Rule 12, 13 and 15 of Granite Conservation and Development Rules, 1999 and the followings are observed:-

i) All the conditions stipulated in the Government letter No.5137/MME.2/2017-1 dated 08.09.2017 have been incorporated in the mining plan.

ii) A safety distance of 50 meters left out for the Oni poramboke land in S.F.No.350 situated on the western side of the applied area bearing S.F.No. 353/2A1B have been demarcated and shown in the mining plan.

iii) A safety distance of 10 meters left out for the Government land in S.F.No.373/1 is situated on the Southern side of the applied area in S.F.No.353/2A7 and Parai poramboke in S.F.No.354 is situated on the North and north eastern side of the applied area in S.F.No.353/2A7 have been demarcated and shown in the mining plan.

iv) A safety distance of 7.5 meters for the adjacent patta lands have been demarcated and shown in the mining plan.

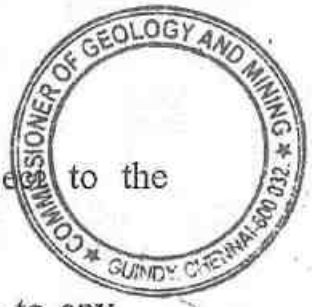
v) The GPS readings for the entire boundary pillars of the area have been incorporated and shown in the mining plan.

vi) The total geological reserves in the applied area is 47,864 Cbm and the mineable reserves is estimated as 30,537 Cbm @ 30% recovery for a depth persistence of 36 Mts.

vii) The total quantity of production for the first 5 years has been estimated as 9,374 cbm for a depth persistence of 6 mtrs.

6) In the light of the above, in exercise of the powers conferred under Rules 12,13 and 15 of Granite Conservation and Development Rules, 1999 read with G.O.Ms.No.87, Industries (MMC1) Department

Dated 22.2.2001, I hereby approve the mining plan subject to the following conditions:-



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

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

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

iv) A safety distance of 7.5 meters for the adjacent patta lands should be left out and should not cause any hindrance to them while quarrying and transportation of granite

v) A safety distance of 10 meters Should be left out for the Government land in S.F.No.373/1 is situated on the Southern side of the applied area in S.F.No.353/2A7 and Parai poramboke in S.F.No.354 is situated on the north and north eastern side of the applied area in S.F.No.353/2A7.

vi) A safety Zone of 50 meters Should be left out for the Oni poramboke land in S.F.No.350 situated on the western side of the applied area bearing S.F.No. 353/2A1B .

vii) The Electrical line passing North-South situated almost at the centre of the applied area should be shifted 50 meters. away from the applied area before execution of lease deed.

viii) No hindrance shall be caused to the adjacent pattadars lands and to the Government parai poramboke lands while quarrying and transportation of granite.

ix) The conditions mentioned in G.O.(Ms)No.79 Industries Department dated 06.04.2015 should be complied with

x) The applicant should fence the lease granted area with barbed wire before the execution of lease deed as follows.

- The pillar post shall be firmly grounded with concrete foundation of height not less than 2 mts with a distance between two pillars shall not be more than 3mts.

xi) Waste materials generated during quarrying operations dumped within the lease applied area as earmarked in tl plan for this purpose.

xii) Quarrying operations and production of granite blocks shall be carried out as per the Approved Mining Plan.

xiii) Blasting and production of granite blocks should not be carried out in the from 6 P.M to 6 A.M.

xiv) The waste material generated during quarrying operation shall be dumped only in the area granted under lease.

xv) the lease shall strictly adhere to the statutory and safety requirements

xvi) Environmental clearance should be obtained from the competent authority as per rule 42 of Tamil Nadu Minor

Mineral Concession Rules, 1959.

xvii) A green belt should be constructed with 500 trees plantations around the quarry area and should be maintained by the applicant firm in good condition.

xviii) Scheme of mining along with the progressive mine closure plan shall be submitted within the time stipulated in the rules.

xxi) The District Collector, Krishnagiri shall obtain a sworn-in-affidavit from the applicant to adhere the above conditions scrupulously before execution of lease deed and also ensure that the instructions issued in Government letter 12789/MMB2/2002-7, Industries Department, dated 09.01.2003 are complied with.

A copy of the Approved Mining Plan is sent herewith for further necessary action.

Encl: Approved mining plan.

Sd/- R. Palaniswamy
Commissioner of Geology and Mining

Forwarded / By Order

13/2/2018

Deputy Director

Copy to :

1) Shri.E.Jagadeesan
S/o.Shri.M.Egananthan,
No.5/50,Thiruvalluvar Nagar,
Krishnagiri.635001
2) The District Collector, Krishnagiri (with AMP)
3) The Directorate of Mines Safety,
Chennai-40 (with AMP).

MTS 4\E:\MM5\993-MM5-2017-_Mining_Plan_Jagadeesan-Copy-dated 02.2018

S. SURIYAKUMAR
M.Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

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ANNEXURE V - COPY OF PRECISE AREA LETTER

Industries (MME.2) Department,
Secretariat, Chennai – 600 009.

Letter No.5137/MME.2/2017 - 1, Dated 08.09.2017

From
Thiru. Atulya Misra, I.A.S.,
Principal Secretary to Government

To
Thiru E.Jagadeesan,S/o.Egananthan
No.5/50, Thiruvalluvar Nagar,
Krishnagiri-635 001.

Sir,

Sub: Mines and Quarries –Minor Mineral – Grey Granite– Krishnagiri District, Bargur Taluk, Jegadevipalayam Village - S.F. Nos. 353/2A1B (0.24.5), 353/2A7 (0.88.0), 353/2B (0.06.0), 353/2C1 (0.05.5) and 353/2E1A (0.32.5) - Over an extent of 1.56.5 Hectares of Patta lands – Quarry Lease Application preferred by Thiru E.Jagadeesan, S/o.Egananthan – Approved Mining Plan and Environment Clearance Certificate – Called for – Reg.

Ref: 1. Your Quarry Lease Application dated: 07.09.2016.
2. From the District Collector, Krishnagiri, Letter Roc.501/ 2016/Mines-1, dated: 30.1.2017.
3. From the Commissioner of Geology and Mining, File No.993/MM5/2017, dated: 20.2.2017.

*****

I am directed to invite your attention to the references second and third cited wherein the District Collector, Krishnagiri and the Commissioner of Geology and Mining have recommended your quarry lease application for grant of quarry lease for quarrying Grey Granite over an extent of 1.56.5 hectares of patta lands in S.F.Nos.353/2A1B (0.24.5), 353/2A7 (0.88.0), 353/2B (0.06.0), 353/2C1 (0.05.5) and 353/2E1A (0.32.5) of Jagadevipalayam Village in Bargur Taluk, Krishnagiri District for a period of 20 years under rule 19A of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. In this connection, I am directed to request you to furnish an approved mining plan for the above said area by incorporating the following conditions to the Government through the Commissioner of Geology and

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Mining within a period of 3 months as per sub-rule (13) of Rule 19A of Tamil Nadu Minor Mineral Concession Rules, 1959. I am also directed to request you to obtain and produce Environment Clearance Certificate from State Level Environment Impact Assessment Authority (SEIAA) / District Environment Impact Assessment Authority (DEIAA) as per the orders of Hon'ble Supreme Court dated 27.02.2012 in IA No.12-13 of 2011 in SLP(C) No. 19629 of 2009 and Government of India, Ministry of Environment and Forest circular No.L-11011/47/2011-IA II (M), dated 18.05.2012 before granting quarry lease.

i) A safety distance of 7.5 meters should be left out for the adjacent patta lands.

ii) A safety Zone of 10 meters should be left out for the Government land in S.F.No.373 is situated on the South side of the applied area in S.F.No.353/2A7 and Government land in S.F.No.350 is situated on the west side of the applied area in S.F.No.353/2A1B

iii) A safety distance of 10 meters should be left out for the Parai poramboke situated in S.F. Nos. 354 and 373/1

iv) A safety Zone of 50 Meters should be left out for the Oni Poramboke land in SF.No.350.

iv) The Electrical line passing North-South situated almost at the centre of the applied area should be shifted 50 Meters. away from the applied area before execution of lease deed.

vi) No hindrance shall be caused to the adjacent pattadars lands and to the Government parai poramboke lands while quarrying and transportation of granite.

vii) Blasting of rocks and transportation of vehicles carrying granite should not carried out from 6PM to 6AM.

viii) The conditions mentioned in G.O.(Ms)No.79 Industries Department dated 6.4.2015 should be complied with.

(xi) The applicant firm should fence the lease granted area with barbed wire before the execution of lease deed as follows:-

• The pillar post shall be firmly grounded with concrete foundation of height not less than 2 meters with a distance between two pillars shall not be more than 3 meters.

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• The applicant shall incorporate the DGPS readings for the entire boundary pillars of the area and the same should be clearly shown in the mining plan and submit in soft copy (CD).

x) Environment Clearance should be obtained from the Competent Authority as per Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959.

xi) The lessee shall strictly adhere to the statutory and safety requirements.

xii) The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.

xiii) 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.

xv) The lease grantee shall submit scheme of mining; mine closure plan and other statutory requirements within the time stipulated for sub-mission of the above, as per rules.

xvi) The District Collector, Krishnagiri shall obtain a sworn-in-affidavit from the appellant containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.12789/ MMB-2/2002-7, Industries Department, dated 09.01.200 are complied with.

Yours faithfully,

8/9/17

for Principal Secretary to Government

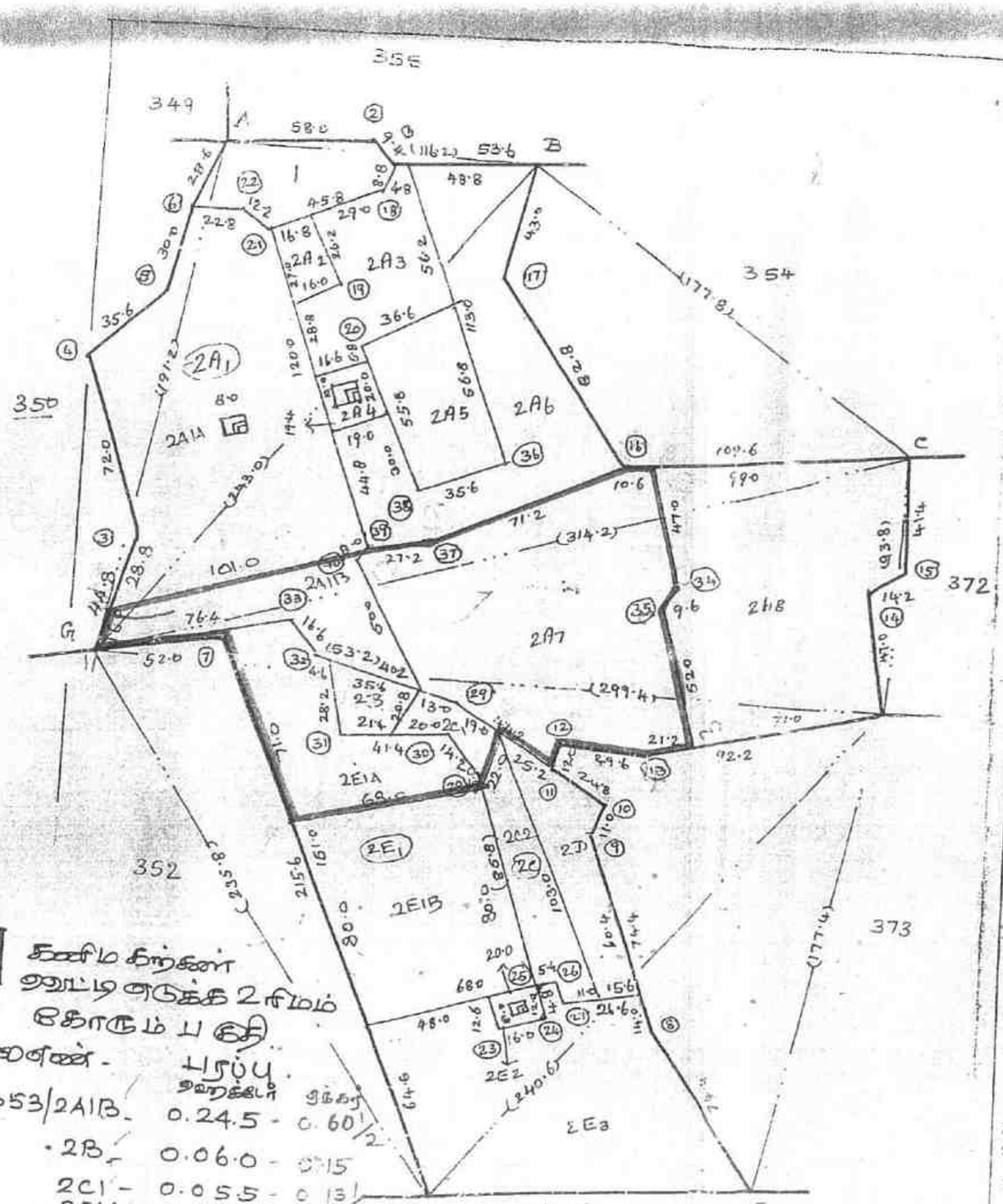
8.9.17

Copy to:
The Commissioner of Geology and Mining,
Guindy, Chennai – 600 032.

The District Collector,
Krishnagiri.

S. SURIYAKUMAR
M.Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

ANNEXURE VI - COPY OF FMB



			G			24.3.0		
						14.3.6	11.0	
						140.2	17.2	W
					11.2	109.0		
					W 4.0	102.0		
						96.4	21.4	
						95.6	28.0	H
						85.2	66.8	22
						84.8	69.0	21
						83.4	1.2	20
						81.4	23.8	19
						46.8	32.0	18
						B		
						177.8		
					17	41.2	168.0	
					16	67.2	86.2	
						C		
						93.8		
			G			52.4	1.4	15
			314.2					
			208.6	10.4	40			
			203.4	16.0	39	14 11.2	45.6	
			180.0	32.0	38		D	
			176.6	13.6	37		177.4	
			147.0	34.0	36	13 86.0	144.4	
35	30.0		160.0			12 115.4	141.8	
34	25.0		95.6			11 85.6	130.0	
			C			10 92.2	122.8	
			G			9 96.4	112.4	
			299.4			8 58.8	49.4	
			225.4	18.2	33		E	
			212.8	7.0	32		F	
31	21.8		203.0				235.8	
30	20.0		182.4			7 45.4	26.0	
29	5.6		151.4				G	
28	30.4		161.2				A	
			D				191.2	
			210.6			5 8.0	164.2	
27	18.2		86.2			6 7.4	134.2	
26	13.2		85.2			4 29.6	106.4	
25	21.6		82.2				44.2	6.4 3
			84.6	85.4	E		G	
24	14.0		74.0				A	
	20.0		72.0				116.2	
	20.0		67.0				58.6	1.0 2
23	22.0		60.2			1 6.6	53.0	
			F				B	

கணிம கற்கள்
வரைபடத்தில் 2 கனிமம்
மேற்போக்கு பயிர்

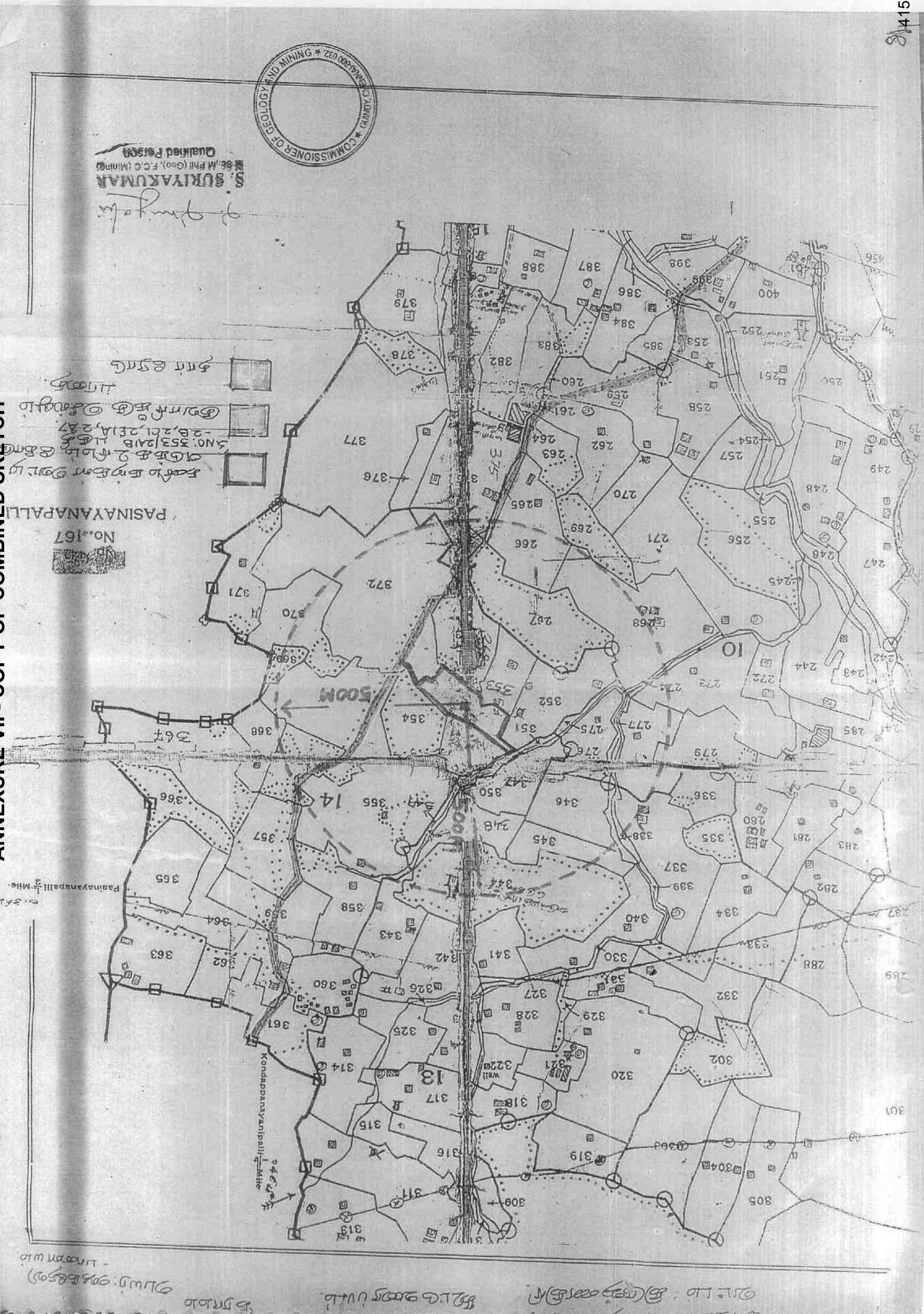
புலஎண்	பரப்பு	மதிப்பு	
	உலர்க்கட்டம்	ஏக்கர்	
353/2A1B	0.24.5	0.60	1/2
2B	0.06.0	0.15	
2C1	0.05.5	0.13	1/2
2E1A	0.32.5	0.80	
2A7	0.88.0	2.17	
	1.56.5	3.86	

Total 267

1 செ.மீ = 2000 அடி

S. SURIYAKUMAR
M Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

ANNEXURE VII - COPY OF COMBINED SKETCH



ANNEXURE VIII - COPY OF PATTA

COMMISSIONER OF GEOLOGY AND MINING * GUINDY, CHENNAI-600 032. *

தமிழக அரசு

வருவாய்த் துறை

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

மாவட்டம் : கிருஷ்ணகிரி வட்டம் : பர்கூர்

வருவாய் கிராமம் : ஜெகதேவிபாளையம் பட்டா எண் : 1205

உரிமையாளர்கள் பெயர்

1.	எஸ்.எஸ்.சலாவுதீன்	மகன்	எஸ்.எஸ்.ஜமீலுத்தீன்
2.	எம்.ஏகநாதன்	மகன்	ஏ.ஜெகதீசன்

		நன்செய்		புன்செய்		மற்றவை	
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை
புல எண்	உட்பிரிவு	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை
347	1	--	--	0 - 33.00	1.10	--	--
347	2	--	--	0 - 65.00	2.20	--	--
347	4	--	--	0 - 23.50	0.80	--	--
347	5	--	--	1 - 6.00	3.60	--	--
348	4	--	--	0 - 32.00	1.05	--	--
348	5	--	--	0 - 20.00	0.70	--	--
348	6B1	--	--	0 - 16.20	0.50	--	--
348	6C	--	--	0 - 10.50	0.35	--	--
348	6D1	--	--	0 - 13.35	0.45	--	--
353	2A1B	--	--	0 - 24.50	0.83	--	--
353	2A7	--	--	0 - 88.00	2.95	--	--
353	2B	--	--	0 - 6.00	0.20	--	--
353	2C1	--	--	0 - 5.50	0.19	--	--
353	2E1A	--	--	0 - 32.50	1.10	--	--
				4 - 76.05	16.02		

குறிப்பு2 :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் http://eservices.tn.gov.in என்ற இணைய தளத்தில் 31/06/138/01205/20818 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

S. SURIYAKUMAR
M.Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

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ANNEXURE IX - COPY OF EC LETTER

THIRU C.KATHIRAVAN, I.A.S.,
CHAIRMAN/
DISTRICT COLLECTOR.

Krishnagiri District
Environment Impact
Assessment Authority,
Room No.30,
Collectorate,
Krishnagiri.

ENVIRONMENTAL CLEARANCE

Lr.No.03/DEIAA-KGI/EC No.104/2018 dated: 27.08.2018

To

THIRU. E.JAGADEESAN,
S/o. M.Egananthan,
No.5/50, Thiruvalluvar Nagar,
Krishnagiri District- 635 001

Sir,

Sub: DEIAA - Application for Environment Clearance for the Proposed quarrying and transportation of 9374 cbm of Grey Granite generated from the quarry over an extent of 1.56.5Hects. in Patta land S.F.No.353/2A1B, 353/2A7, 353/2B, 353/2C1 & 353/2B1A of Jagadevipalayam village of Bargur Taluk, Krishnagiri District preferred by THIRU. E.JAGADEESAN, S/o.M.Egananthan, No.5/50, Thiruvalluvar Nagar, Krishnagiri District- 635 001 - Issue of Environmental Clearance - Reg.

Ref:
1. THIRU.E.JAGADEESAN, S/o. M.Egananthan, Application for Environment Clearance dated
2. Minutes of the DEAC meeting conducted on.25.08.2018
3. Minutes of the DEIAA meeting held on 27.08.2018

-o0o-

Details of Minor mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of minor mineral Grey Granite based on the particulars furnished in your application as shown below:

1.	Name of Project Proponent and address	THIRU. E.JAGADEESAN, S/o. M.Egananthan , No.5/50, Thiruvalluvar Nagar, Krishnagiri District- 635 001

	Location of the Proposed Activity		
	Survey Number and Extent		S.F.No. 353/2A1B, 353/2A7, 353/2B, 353/2C1 & 353/2E1A Extent : 1.56.5 Hects
	Latitude and Longitude		12° 28' 34.91"N to 12° 28' 40.90"N 78° 21' 11.18"E to 78°21' 17.84" E
	Topo Sheet No.		57 - L/07
	Village		Jagadevipalayam
	Taluk		Bargur
	District		Krishnagiri District
3.	Proposed Activity		
	i.	Minor mineral	Grey Granite
	ii.	Mining Lease Area	1.56.5Hects..
	iii.	Approved quantity	9374 cbm of Rough Stone
	iv.	Depth of Mining	6 mts (including topsoil and burden) from a period of 5 years
	v.	Type of mining	Open cast shallow mining and semi mechanised method
	vi.	Category (B1/B2)	B2
	vii.	Precise Area Communication	The Deputy Director Geology and Mining Krishnagiri Lr.No.201/2016/Mines Dt:03.02.2018.
	viii.	Mining Plan approval	Approved Mining Plan vide Lr.No.993/MM5/2017 Dt:13.2.2018.
	ix.	Mining lease period	Twenty years Environment Clearance for 5 years
4.	Whether Project area attracts any general conditions specified in the EIA notification, 2006 as amended:-		Not attracted Affidavit furnished
5.	Man Power requirement per day		17 Employees
6.	Utilities		
	i.	Source of Water	a. For Drinking and Domestic purpose water will be purchased from approved water vendors. b. For dust suppression and green belt development water from the existing

				bore hole situated near by the quarry area will be used.
	ii.	Quantity of Water Requirement in KLD:		
		a.	Domestic & Drinking	0.700 kilo litre
		b.	Industrial	--
		c.	Green Belt & Dust Suppression	1.000 kilo litre
	iii.	Power requirement		
		a.	Domestic purpose	TNEB
		b.	Industrial purpose	Fuels is used for operating machineries and vehicles during the quarrying process and transportation and the fuel required for the entire project life is ..... Lts. of HSD.
7.			Cost	
	i.	Project Cost		Rs.78,00,000/-
	ii.	EMP Cost		Rs.7.25 lakhs
8.	Public Consultation:-			Not required as per O.M. dated 24.12.2013 of MoEF, GOI
9.	Date of Appraisal by DEAC: Agenda No.			Agenda No.55 of 3rd meeting of DEAC conducted on 25.08.2018
10.	Date of review / discussion by DEIAA and the Remarks:- The proposal was placed before the DEIAA in its 3rd meeting on 27.08.2018 as agenda No.55 and the authority after careful consideration, decided to grant Environmental Clearance to the said project of quarrying of Grey Granite subject to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.			
11.	Validity: This Environmental Clearance is granted to quarry of Grey Granite for the production quantity of 9374 Cbm of Grey Granite for the period of five years from the date of execution of the quarrying lease deed.			
12.	NBWL Clearance: The proposal area is situated ..... kms away from The Cauvery North Wild Life Sanctuary and it does not Attract NBWL clearance.			

Special Condition:

i) Ground Water Quality test should be conducted periodically.

ii) Water Sprinkling arrangement shall be maintained as proposed.

iii) Environment Management plan should be submitted before the grant of permission.

Conditions to be Compiled before / during commencing operations:-

(1) The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that

i) The project has been accorded Environmental Clearance.

ii) Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.

iii) Environmental Clearance may also be seen on the website of the State Level Environment Impact Assessment Authority.

iv) The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the DEIAA.

(2). The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.

(3). NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.

(4). The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.

(5). A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions, representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.

(6). Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.

(7). The proponent shall ensure that First Aid Box is available at site.

(8). The excavation activity shall not alter the natural drainage pattern of the area.

(9). The excavated pit shall be restored by the project proponent for useful purposes.

(10). The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.

(11). The quarrying operation shall be restricted between 7 AM and 5 PM.

(12). The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.

(13). A minimum distance of 15 mts. From any civil structure shall be kept from the periphery of any excavation area.

(14). Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.

(15). The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.

(16). Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.

(17). Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.

(18). The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.

(19). Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.

(20). A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.

(21). The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009. **(GLC = Ground Level Concentration), (NAAQ = Noise and Ambient Air Quality)**

(22). The following measures are to be implemented to reduce Air Pollution during transportation of mineral

(i). Roads shall be graded to mitigate the dust emission.

(ii). Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust.

(23). The following measures are to be implemented to reduce Noise Pollution

(i). Proper and regular maintenance of vehicles and other equipment.

(ii). Limiting time exposure of workers to excessive noise.

(iii). The workers employed shall be provided with protection equipment and earmuffs etc.

(iv). Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

(24). Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.

(25). Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Assistant Director, Ground Water Division, PWD, Dharmapuri.

(26) Rain water harvesting to collect and utilize the entire water falling in land area should be provided by construction of a storage tank with a capacity of 5,00,000 litrs and the rain water harvested in the entire quarry area should be stored in it and used for the quarry purpose like dust prevention, wet drilling, providing water for green belt etc.

(27). Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.

(28). Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.

(29). The following measures are to be adopted to control erosion of dumps:-

(i). Retention/ toe walls shall be provided at the foot of the dumps.

(ii). Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.

(30). Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.

(31). Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(32). Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the (lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season. **Photographs of the silt trap should be furnished before commencing quarry operation.**

(33). The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, **that the ground water is getting depleted due to the quarrying activity, necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Dharmapuri shall monitor.**

(34). No tree-felling shall be done in the leased area, except only with the permission from competent Authority.

(35). To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic institution **and it should be monitored by the District Environmental Engineer, TNPCB, Hosur on yearly basis.**

(36). It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.

(37). It shall be ensured that there is no habitation is located within 500 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site

(38). Ground water quality monitoring should be conducted once in 3 Months.

(39). Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.

(40). Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI **once in three months.**

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(41). Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI periodically once in six months.

(42). Bunds should be provided at the boundary of the project site and it should be properly maintained.

(43). The project proponent shall undertake plantation/ afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.

(44). At least 10 Neem trees should be planted around the boundary of the quarry site.

(45). Floor of excavated pit to be leveled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.

(46). The Project Proponent shall ensure a minimum of 2.5 of the annual turnover will be utilized for the CSR Activity.

(47). The Project Proponent shall provide solar lighting system to the nearby villages.

(48). The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.

(49). Rainwater shall be pumped out Via Settling Tank only

(50). Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.

(51). As per MoEF & CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry &Wild Life angle including clearance from obtaining committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.

(52). The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.

(53) Safety equipments to be provided to all the employees.

(54) Safety distance of 50 m has to be provided in case of railway, reservoir, canal/odai

(55) The Assistant / Deputy Director Department of Geology and Mining shall ensure that the proponent has engaged the blaster with valid Blasting license /certificate obtained from the competent authority before execution of mining lease.

(56) The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.

(57) The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.

(58) The proponent shall furnish the data obtained from the Public Works Department regarding the details of ground water table in the quarry site.

(59) The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh case before execution of mining lease.

(60) The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to the existing activity before execution of mining.

(61) Heavy earth machinery equipments if utilized, after getting approval from the competent authority.

(62) The environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur.

(63) The Assistant Director Public Works Department, Ground Water Division Dharmapuri shall monitor whether the quarrying activity is carried out above the ground water level on yearly basis.

(64) NOC for sanitary certificate shall be obtained from the Deputy Director of Health Services, Krishnagiri.

(65) Yearly medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Krishnagiri.

(66) Closed circuit camera should be erected at the quarry site and the passage of vehicles in and out of the quarry should be recorded and the footage of the recordings of the camera should be maintained and should be produced before the enforcing officials when ever called for.

(67) Vehicles used for transportation of quarried materials should be fitted with GPS and monitored.

(68)Pit Mouth register should be maintained in online

(69) Auditor report on the annual turnover amount should be submitted to the District Collector within one month from the end of the financial year.

(10) 02.5% of the turn over amount should be utilized for the CSR activity after consultation with the District Collector.

B. General Conditions:

(1) EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.

(2) The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.

(3) No change in mining technology and scope of working should be made without prior approval of the DEIAA, Tamil Nadu.

(4) No change in the calendar plan including excavation; quantum of mineral (minor mineral) should be made.

(5) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

(6) Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.

(7) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.

(8) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.

(9) Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying them mineral shall not be overloaded.

(10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.

(11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

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(12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.

(13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.

(14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.

(15) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its regional office located at Chennai.

(16) The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.

(17) This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance

(18) The DEIAA, Krishnagiri may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.

(19) The DEIAA, Krishnagiri may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this DEIAA.TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the environmental clearance.

(20) Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

(21) The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules,2006 and rules made there under and also any other

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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) If continuous seepage is found while quarrying it should be informed to the PWD ground water department. Ground water quality test to be done periodically. Rain water will be pumped through settling tank only.

(23) Adequate green belt area shall be developed as proposed.

(24) Formation of green belt to be done before Mining.

(25) Any other conditions stipulated by other Statutory/ Government authorities shall be complied.

(26) Any appeal against this environmental Clearance shall lie with the Hon'ble National Green Tribunal, if preferred within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act 2010

Sd/-C.Kathiravan
CHAIRMAN DEIAA-KGI/
DISTRICT COLLECTOR,
KRISHNAGIRI.

//True Copy//By Order//

For CHAIRMAN DEIAA-KGI/
DISTRICT COLLECTOR,
KRISHNAGIRI.

Copy to

1. The Secretary, Ministry of Mines, Government of India , Shastri Bhawan, New Delhi
2. The Principal Secretary, Environment and Forest Department, Government of Tamil Nadu, Tamil Nadu.
3. The Principal Secretary to Government, Industries Department, Government of Tamil Nadu, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building 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 Member Secretary, State Level Environmental Impact Assessment Authority Tamil Nadu Panagal Building Saidapet, Chennai
7. The Chairman Tamil Nadu Pollution Control Board, 76.Mount Salai (Guindy, Chennai-32)
8. The Commissioner of Geology and Mining, Guindy, Chennai-32
9. E1 Division, Ministry of Environment and Forests Paryavaran Bhawan, New Delhi.
10. File No.75/ DEIAA/KGI/2018.

S. SURIYAKUMAR
M.Sc.,M.Phil (Geo), F.C.C (Mining)
Qualified Person

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सेल रिफ्रैक्ट्री कम्पनी लिमिटेड, सेलम
SAIL REFRACTORY COMPANY LTD., SALEM
(A Govt. of India Enterprises)
(A Subsidiary of Steel Authority of India Limited)

COMMISSIONER OF GEOLOGY AND MINING ... CHENNAI-600 032

SRCL/P&A/2017/0380/1935 DATE: 18.09.2018

EMPLOYMENT CERTIFICATE

Employee Details :

Name	: S.SURIYAKUMAR
Employee No	: 100045
Grade	: E-2
Designation	: Asst. Manager (Geology)
Department	: Mines

This is to certify that Sri. S.SURIYAKUMAR F.S.No.100045 was in the employment of this organisation from 20.03.1981 to 31.07.1992 and he has resigned & released with effect from 31.07.1992 AN.

At the time of his resignation on 31.07.1992, he was employed as Assistant Manager in the capacity of II class Mines Manager.

Sridharan
18/09/18
S.SRIDHARAN
Asst. General Manager (Prsl & Admn)

Post Box No. 565 Salem - 636 005. Phone : +91427-2341403/4/5/6 Fax : +91427-2341407
पोस्ट बैग नो. : 565, सेलम - 636 005. फोन +91427-2341403/4/5/6 फैक्स +91427-2341407
E-mail : srclsalem@gmail.com CIN No. : U14200TZ2011GO1017357

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ANNEXURE–XVII

002646

COMMISSIONER OF GEOLOGY AND MINING
GUINDY, CHENNAI-600 032

University of Madras

FACULTY OF SCIENCE

The Senate of the University of Madras hereby makes known that S. Suriyakumar has been admitted to the Degree of Master of Science, he having been duly certified to be qualified to receive the same, and awarded an Overall Grade O at the Examination held in the month of May 1979 in Branch VII A - Special Geology

Given under the seal of the University, at Madras this 28th day of September 1979

Registrar

B. Sc. Engg., C. Engg., F.I.E.E. (Lond.), F.I. Mun. E. (Lond.), F.I.E. (Ind.).
Vice-Chancellor

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University of Madras
Faculty of Science

The Senate of the University of Madras hereby makes known that S. Suriyakumar has been admitted to the Degree of Master of Philosophy in Geology, he having been certified by duly appointed Examiners to be qualified to receive the same and having been by them placed in the First Class at the Examination held in September 1986

Given under the seal of the University.

Senate House
September 21, 1988

Registrar

F.N.A., F.N.A.Sc.
Vice-Chancellor.

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Government of India
Ministry of Labour
DIRECTORATE-GENERAL OF MINES SAFETY
****

REGISTERED

No.Exam/MNGR-I/Field/Metal/R/ 113/91 /Dated, Dhanbad, the 3/5/ 1991

To

Shri S. Suriya Kumar,
Assistant Manager,
Mangnesite Mines, Burn Standard Co,Ltd.,
SALEM-636005, TAMIL NADU.

MEMORANDUM

Ref:-His application dated 18-7-90

By virtue of Govt. Notification No.S.O.712(E) dated 13.12.1974 Shri S. Suriyakumar son of Shri A. Semban has become eligible to work in a capacity requiring the possession of First Class Manager's certificate, restricted to mines having opencast workings only, under the Metalliferous Mines Regulations, 1961 with effect from 19th March, 1991 till the above notification remain in force.

Encl:-

Secretary,
Board of Mining Examinations &
Director of Mines Safety(Exam)

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ANNEXURE XI - COPY OF VAO CERTIFICATE

சான்று

கிருஷ்ணகிரி மாவட்டம், பருகூர் வட்டம், ஜெகதேவிபாளையம் கிராம நிர்வாக அலுவலர் அளிக்கும் சான்று.

கிருஷ்ணகிரி மாவட்டம், கிருஷ்ணகிரி வட்டம், நெ.5/50 திருவள்ளுவர் நகர், கிருஷ்ணகிரி அஞ்சல் என்ற முகவரியில் வசிக்கும் திரு. ஏகநாதன் மகன் திரு. E. ஜெகதீசன் என்பவர் கிருஷ்ணகிரி மாவட்டம், பருகூர் வட்டம், ஜெகதேவிபாளையம் கிராமத்தில் உள்ள Grey Granite Quarry - சர்வே எண்கள் 353/2A1B, 2A7. 2B, 2C1, 2E1A ஆகியவற்றில் உள்ள 1.56.5 ஹெக்டேர் பரப்பு பட்டா நிலத்தில் கிரே கிரானைட் கற்கள் வெட்டி எடுக்க அரசாங்கத்திடமிருந்து குத்தகை அனுமதி கோரியுள்ளார். எனவே குவாரி குத்தகை உரிமம் எடுத்துள்ள நிலத்தை சுற்றி சுமார் 300 மீட்டருக்கு அருகில் அங்கீகரிக்கப்பட்ட வீட்டு மனைகள், மற்றும் புராதனச் சின்னங்கள் ஏதும் இல்லை எனவும், இதனால் பொதுமக்களுக்கு எவ்வித இடைஞ்சல்களோ அல்லது பாதிப்புகளோ ஏற்படாது என தெரிவித்துக் கொள்கிறேன். மேலும், அனுமதி கோரிய புலத்திற்கு வண்டிகள் சென்று வர புலத்திற்கு கிழக்கு மேற்காக பாதை அமைந்துள்ளது.

J. Ramesh
27/10/2022
Village Administrative Officer
17, JAGADEVI PALAYAM
Bargur - Tk, Krishnagiri - Dt

ANNEXURE XII - COPY OF SITE PHOTOGRAPH ATTESTED BY VAO

THIRU.E.JAGADEESAN S/o.Egananthan, over an extent of 1.56.5 Hectares, S.F.No: 353/2A1B, 2A7, 2B, 2C1 and 2E1A of Grey granite Quarry located at Jagadevipalayam Village, Bargur Taluk, Krishnagiri District and Tamil Nadu.

General View of the Proposed Area.

J. Ramesh Rao
27/10/2012
Village Administrative Officer
17, JAGADEVI PALAYAM
Bargur - Tk, Krishnagiri - Dt

தமிழ்நாடு तमिलनाडु TAMILNADU ரூ50/- 29.10.2022 BE 948403

T. லில்லி
முத்திரைத்தாள் விற்பனையாளர்
உரிமம் எண்: 3/2013/சேலம் மேற்கு
எட்டிக்குட்டை தெரு, ஜாகீர் அம்மாபாளையம்,
சேலம்-636 005.

Thiru.E.Jagadeesan
Krishnagiri

AFFIDAVIT TO SEIAA, TAMIL NADU

1, **Thiru.E.Jagadeesan S/o.M.Egananthan,** aged about 54 years, having registered office at No.5/50, Thiruvalluvar Nagar, Krishnagiri District, -635001, Tamil Nadu state do hereby solemnly declare and sincerely affirm that,

I have applied for getting environmental clearance to SEIAA Tamil Nadu for quarry lease for Grey Granite, in S.F.No. 353/2A1B, 2A7, 2B, 2C1 & 2E1A, Consent Patta land, over an extent of 1.56.5Ha of Jegadevipalayam Village, Bargur Taluk, Krishnagiri District and Tamil Nadu.

1. I swear to state that within 10kms radius of the mines which I have applied for environmental clearance, none of the followings are situated as per the General Conditions of EIA Notification, 2006.

- Protected areas notified under the Wildlife (Protection) Act, 1972
- Critically polluted area as identified by CPCB constituted under Water (Prevention and Control of Pollution) Act, 1974
- Eco Sensitive areas identified by the Forest Dept/State Govt
- Interstate boundaries are located at 13.7 kms and there are no International boundaries within 10Km Radius from the proposed site.

2. I will complete the following Corporate Environment Responsibility (CER) activities before commencement of the quarrying activities in addition to CSR and EMP.

CER Activity	Project Cost (Rs. In Lakh)	CER Cost 2% of Project Cost (Rs in Lakh)
Developing Library Facilities to Government High school, Jagadevipalayam Village.	78 lakh	1.56
Total Cost Allocation	**78 lakh**	**1.56Lakh**

3. There are Quarries located within 500m radius from the periphery of our quarry.

i. Existing Quarries

S. No	Name of the Lessee	GO.NO. & Dated	Village & Taluk	S.F.No	Extent (In Ha.)	Lease Period	Last permit obtained
1.	Tvl. Everking Granites, No.1/161, T.N.H.B Phase-II, Krishnagiri.	G.O,(3D) NO.20,IND.(MME -2) DEPT.DT. 22.03.2018	Jagadevi palayam village, Bargur Taluk.	347/1, 347/2, 347/4, 347/5, 347/6B1, 3476C, 347/6D1	3.19.50	28.05.2018 TO 27.05.2038	13.10.2022
2	Thiru.E.Jagadees an,S/O.Egananth an,No.5/50, Thiruvallur Nagar,Krishnagiri	G.O,(3D)NO.42,IN D.(MME-2). DEPT.DT. 29.09.2018	Jagadevi palayam village, Bargur Taluk.	353/2A1B, 2A7, 2B, 2C1 & 2E1A	1.56.50	09.11.2018 TO 08.11.2038 Instant proposal (applied 1st scheme of mining)	16.09.2022
3	Tvl.M.P Granite, No;131/29, R.R Complex, Kollapatti, Animoor Post, Tiruchengode.	G.O,(3D) NO.07,IND. (MME-2). DEPT. DT.18.01.2016	Jagadevi palayam village, Bargur Taluk.	266/1, 266/1AC, 268/1AD	1.85.50	03.02.2016 TO 02.02.2036	08.12.2017
4	M.P.Mining and Leasing Company, No.2/226, Karisalkulam Road, Vakkanangundu, Kariyapatti, Virudhunagar.	G.O,(3D)NO.72,IN D.(MME-2). DEPT.DT.01.12.2 016	Jagadevi palayam village, Bargur Taluk.	268/1Y, 268/1Z, 268/2K, 268/1AB.	1.84.00	10.02.2017 TO 09.02.2037	18.03.2020
5	S.S.Jameeleddin, S/O.S.S. Salahuddin, No.449/1, New Housing Board, Ii Phase, Krishnagiri.	G.O,(3D)NO.17,IN D.(MME-2). DEPT.DT.008.04. 2008.	Jagadevi palayam village, Bargur Taluk.	372/3A.	1.25.00	22.12.2008 TO 21.12.2028	06.09.2018

ii. **Abandoned or Expired Quarries**

S.No	Name of the owner	GO.NO.& Dated	Village	S.F .No	Extent (In Ha.)	Lease Period
-	---------------------------Nil---					

iii. **Present Proposed Quarries**

S.No	Name of the owner	GO.NO. & Dated	Village	S.F .No	Extent (In Ha.)	Lease Period
-	---------------------------Nil---					

4. There will not be any hindrance or disturbance to the people living on enroute / nearby my quarry site while transporting the mined out materials and due to quarrying activities.

5. There are no habitations / villages located within 300 meters radius from the periphery of my quarry.

6. I swear that afforestation will be carried out during the course of quarrying operation and maintained.

7. The required insurance will be taken in the name of the labourers working in my proposed quarry.

8. The existing road from the main road to the quarry is in good condition and the same will be maintained and utilized for transportation of granite.

9. I will not engaging any child labour at my mines 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 laborers working in my quarry.

11. No permanent structures, temples etc are located within 500 m from the periphery of my quarry.

12. The quarrying activity has not yet commenced and it will be carried out only after obtaining environmental clearance.

Deponent

(E.Jagadeesan)

Solemnly and sincerely affirmed and Signed before me Notary Public on the day of 29/10/------- 2022

29/10/2022

Cell:(0)9443286345
M.SARAVANAKUMAR.B.SC.,B.L.
ADVOCATE & NOTARY,
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