Application For Environmental Clearance (Public Hearing)

JUNE 2024

Draft Environmental Impact Assessment Report

For

Thiru.S.Venkatesan Grey Granite Quarry – 3.22.0 Ha

(Brownfield Project)

at

S.F. No. 9 (Part) of Jagadevipalayam Village, Bargur Taluk (formerly Krishnagiri taluk), Krishnagiri District, Tamil Nadu State

Sector No. 1(a) (Sector No. 1 as per NABET)

Category of the Project: B1 Cluster Mining

Baseline Period: March - June 2022

Environmental Consultant & Laboratory details:

Ecotech Labs Pvt Ltd,

No 48, 2nd Main road,
South extension Ram nagar,
Pallikaranai,
Chennai -600100.

Proponent details:

Thiru.S.Venkatesan,
S/o.Subban,
No.26/1, CB Road,
Bargur Post,
Bargur Taluk
(formerly Krishnagiri Taluk),
Krishnagiri District – 635 104.

Thiru.S.Venkatesan
S/o.Subban,
No.26/1, CB Road,
Bargur Post,
Bargur Taluk (formerly Krishnagiri Taluk),
Krishnagiri District-635 104.

UNDERTAKING

I, Thiru.S.Venkatesan, undertaking that the Draft Environmental Impact Assessment (EIA) Report for 'Thiru.S.Venkatesan Grey Granite Quarry' over an extent of 3.22.0 Ha at S.F.No. 9 (Part) of Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk), Krishnagiri District, Tamil Nadu State under project category B1 and Schedule S.No.1 (a). TOR issued by the State Expert Appraisal Committee, TN vide Lr.No.SEIAA-TN/F.No.8965/SEAC/TOR-1133/2021, Dated 25.03.2022.

I, hereby assure that all the information and data provided in the EIA report is accurate, true and correct and owns responsibility for the same.

Place: Krishnagiri

Date:

Yours faithfully

Thiru.S.Venkatesan

Plot No.48A, 2nd Main Road,
Ram Nagar, South Extension,
Pallikkaranai, Chennai - 600 100
GST NO. 33AADCE6103A2ZH
PAN NO. AADCE6103A

Eco Tech Labs Pvt Ltd

Cell No. 98400 87542
Email : info@ecotechlabs.in
Website www.ecotechlabs.in
CIN : U74900TN2014PTC094895

UNDERTAKING

I, Dr. A. Dhamodharan, Managing Director confirms that this Draft EIA Report of 'Thiru.S.Venkatesan Grey Granite Quarry' over an extent of 3.22.0 Ha at S.F.No. 9 (Part) of Jagadevipalayam Village, Bargur Taluk (formerly Krishnagiri Taluk), Krishnagiri District, Tamil Nadu State has been prepared at M/s. Ecotech Labs Pvt. Ltd., Chennai.

I also confirm that I shall be fully accountable for any miss-leading information mentioned in this Report.

Signature: 

Name: Dr. A. Dhamodharan

Designation: Managing Director

Name of the EIA Consultant Organization: M/s. Ecotech Labs Pvt Ltd.,

Chennai. NABET Certificate No: NABET/EIA/2124/SA 0147

Date: 20.11.2022 Place: Chennai

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Abbreviation

LU –Land use

AP – Air Pollution monitoring, prevention and control

AQ- Meteorology, Air quality modeling and prediction

WP – Water pollution monitoring, prevention and control

EB- Ecology and Biodiversity

NV- Noise & Vibration

SE- Socio-economics

HG- Hydrology, ground water and water conservation

GEO –Geology

RH – Risk assessment and hazards management

SHW –Solid and Hazardous waste management

SC- Soil conservation

Declaration of Experts contributing to the EIA

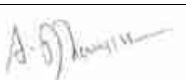
Declaration by experts contributing to the EIA report for Proposed Grey Granite Quarry mining project of Thiru.S.Venkatesan Grey Granite Quarry over an extent of 3.22.0 Ha is situated at Survey No. 9 (Part) of Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk), Krishnagiri District, Tamil Nadu State.

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

Project	Thiru.S.Venkatesan Grey Granite Quarry - 3.22.0 Ha
Type & Category	1 (a) Mining of Minerals
Project Proponent	Thiru.S.Venkatesan
Environment Consultant with their Accreditation Status	M/s. Eco Tech Labs Pvt. Ltd., QCI Accreditated
NABET Certificate No.	NABET/ EIA/2124/ SA 0147
EIA Coordinator Name **Signature** **Period of Involvement**	Dr. A. Dhamodharan (Mining of Minerals) Dr. A. DHAMODHARAN (NABET APPROVED EIA COORDINATOR) NABET/EIA/2124/SA 0147 Environmental Consultant Eco Tech Labs Pvt. Ltd Plot No.48A, 2nd Main Road, Ram Nagar South Extn. Pallikaranai, Chennai - 600 100. March to June 2022
Contact Information	**M/s. Eco Tech Labs Pvt. Ltd.** No. 48, 2nd Main Road, Ram Nagar South Extension Pallikaranai, Chennai - 600 100 Mobile: +91 9789906200 E-mail: dhamo@ecotechlabs.in

Functional Area Experts

The basic fact division that environment and laboratory are accredited by NABL and Ministry of Environment and Forests, India and by other international bodies, stand testimony to its emphasis.

S. No.	Functional areas	Name of the experts	Involvement (period and task)	Signature and date
1	AP	Mrs. K. Vijayalakshmi	1. Selection of Baseline Monitoring stations based on the wind direction 2. Interpretation of Baseline data by comparing it with standards prescribed by CPCB against the type of area 3. Identification of sources of air pollution and suggesting mitigation measures to minimize impact ***Period: March 2022 – Till now***	
2	WP	Dr. A. Dhamodharan	1. Selection of baseline Monitoring Locations for Ground water analysis and also identifying nearest surface water to be studied. 2. Interpretation of baseline data collected 3. Identification of impacts based on the baseline study conducted and also to the ground water and nearby surface water due to the proposed project 4. Preparation of suitable and appropriate mitigation plan. ***Period: March 2022 – Till now***	
3	SHW	Dr. A. Dhamodharan	1. Identification of nature of solid waste generated 2. Categorization of the generated waste and estimating the quantity of waste to be generated based on the per capita basis. Identification of impacts of SHW on Environment	

			3. Suggesting suitable mitigation measures by recommending appropriate disposal method for each category of waste generated 4. Top soil and refuse management ***Period: March 2022 – Till now***	
4	SE	Mr. S. Pandian	1. Primary data collection through the census questionnaire 2. Obtaining Secondary data from authenticated sources and incorporating the same in EIA report. 3. Impact assessment & proposing suitable mitigation plan 4. CSR budget allocation by discussing with the local body and allotting the same for need based activity. ***Period: March 2022 – Till now*** ****Involves Public Hearing***	
5	EB	Dr. A. Dhamodharan	1. Primary data collection through field survey and sheet observation for ecology and biodiversity 2. Secondary Collection through various authenticated sources 3. Prediction of anticipated impacts and suggesting appropriate mitigation measures. ***Period: March 2022 – Till now***	
6	HG	Dr. T. P. Natesan	1. Study of existing surface drainage arrangements in the core and buffer zone, impact due to mining on these drainage courses and suggestion of mitigative measures 2. Determination of groundwater use pattern, development of rainwater harvesting program. Storm water management through garland drainage system. ***Period: March 2022 – Till now***	

7	GEO	Dr. T. P. Natesan	1. Field survey for assessing regional and local geology, aquifer distribution, Determination of groundwater use pattern, development of rainwater harvesting program. ***Period: March 2022 – Till now***	
8	SC	Dr. A. Dhamodharan	1. Interpretation of baseline report 2. Identification of possible impacts on soil, prediction of soil conservation and suggesting suitable mitigation measures. ***Period: March 2022 – Till now***	
9	AQ	Mrs. K. Vijayalakshmi	1. Collection of Meteorological data for the baseline study period 2. Plotting wind rose plot and thereby selecting the monitoring locations based on the wind pattern 3. Estimation of sources of air emissions and air quality modeling is done 4. Interpretation of the results obtained 5. Identification of the impacts and suggesting suitable mitigation measures. ***Period: March 2022 – Till now***	
10	NV	Mrs. K. Vijayalakshmi	1. Selection of monitoring locations 2. Interpretation of baseline data 3. Prediction of impacts due to noise pollution and suggestion of appropriate mitigation measures ***Period: May 2022 – Till now***	
11	LU	Dr. T. P. Natesan	1. Collection of Remote sensing satellite data to study the land use pattern. 2. Primary field survey and limited field verification for land categorization in the study area 3. Preparation of Land use map using Satellite data for 10km radius around the project site. ***Period: March 2022 – Till now***	

12	RH	Mrs. K. Vijayalakshmi	1. Identification of the risk 2. Interpreting consequence contours 3. Suggesting risk mitigation measures ***Period: March 2022 – Till now***	

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

I, Dr. A. Dhamodharan, hereby confirm that the above mentioned experts prepared the EIA report of mining project at Survey number. 9 (Part) of Jagadevipalayam Village, Bargur Taluk (formerly Krishnagiri Taluk), Krishnagiri District, Tamil Nadu State.

I also confirm that the consultant organization shall be fully accountable for any misleading information mentioned in this statement.

Signature:

ECO TECH LABS PRIVATE LIMITED CHENNAI 600 100

Name: Dr.A.Dhamodharan

Designation: Managing Director

Name of the EIA consultant organization: M/s. Eco Tech Labs Private Limited

NABET Certificate No: NABET/EIA/2124/SA 0147

EXECUTIVE SUMMARY

1. Project Background:

Thiru.S.Venkatesan had obtained Environmental Clearance from SEIAA for the quarry lease area 3.22.0 Ha in Survey number 9 (Part) of Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk), Krishnagiri District, Tamil Nadu vide EC Lr. No. SEIAA-TN/F.No.4964/EC/1(a)/2863/2015 dated 15.02.2016 which was expired 13.02.2020.

The Proposed Grey Granite Quarry over an extent of 3.22.0 Ha at S.F.No.9 (Part) of Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk), Krishnagiri District, Tamilnadu. Based on the 500m radius letter obtained from geology of mining, Krishnagiri vide letter no Roc.No.1166/2020/Mines dated 05.12.2020 proposal coming under Cluster of mine exceeding more than 5 Ha and the total cluster area is 9.97.5 Ha. We have submitted our fresh application for ToR to SEIAA vide Proposal No: SIA/TN/MIN/71690/2021 on 31.01.2022.

The category of the project is B1 (cluster), the lease area exhibits plain terrain and sloping towards south side covered with Grey Granite. The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 5.0 meter vertical bench with a bench width of 5.0 meter. In addition to the above the Quarry operation involves Diamond wire saw cutting, loading and transportation.

The quarry operation is proposed up to depth for 15m below ground level. The Total Geological reserve is about 3,82,992 m^3 of Grey Granite. The Mineable and the Recoverable reserves are 2,01,566 m^3 respectively, the proposed Year wise production is carried out 10,240 m^3 of Grey Granite is to be mined for (Sixty months) Five years only.

Mining plan was approved by Commissionerate of Geology and Mining, Guindy vide letter R.c.No.0489/MM4/2021 dated 12.02.2021. The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats,

notified Bird sanctuaries, wild life sanctuaries as per Wild life protection Act 1972, within the radius of 15Km.

2. Nature & Size of the Project

The proposed Grey Granite Quarry over an extent of 3.22.0 Hectares land is located at Jagadevipalayam Village of Bargur taluk (formerly Krishnagiri Taluk), Krishnagiri District.

Mineral intends to quarry : Grey Granite
District : Krishnagiri
Taluk : Krishnagiri
Village : Jagadevipalayam
S. F. Nos. : 9 (Part)
Extent : 3.22.0 Hectares

Table 1: Brief Description of the Project

S. No.	Particulars	Details
1	Latitude	12° 29' 25.93" N to 12° 29' 31.58" N
2	Longitude	78° 18' 42.34" E to 78° 18' 44.07" E
3	Site Elevation above MSL	478 m
4	Topography	Plain terrain
5	Land use of the site	Patta land
6	Extent of lease area	3.22.0 Ha
7	Nearest highway	NH 77 (Jagadevipalayam-Krishnagiri Road) – 1.5km, S
8	Nearest railway station	Tirupattur Railway Station – 28 km, E
9	Nearest airport	Bangalore Airport – 96km, NW
10	Nearest town / city	Town - Bargur- 7 Km -NE City - Krishnagiri – 11km, W District - Krishnagiri – 11km, W
11	Rivers / Canal	Nil
12	Lake	❖ Modikuppam Lake – 4km, SW ❖ Marudepalli Lake – 4.5 km, W

		❖ Orappam Lake – 6km, N ❖ Marachandiram Lake – 9.5 km, W ❖ Karadigollapatti Lake – 9km, SE
13	Hills / valleys	Nil in 15 km radius
14	Archaeologically places	Nil in 15 km radius
15	National parks / Wildlife Sanctuaries	Nil in 15 Km radius
16	Reserved / Protected Forests	❖ Bargur RF – 9km, NE ❖ Varatanapalli RF – 8km, N ❖ Thogarapallai RF – 3.5 km, S
17	Seismicity	Proposed Lease area come under Seismic zone-II (low risk area)
18	Defense Installations	Nil in 15 Km radius

3. Need for the Project

The demand for granite increased due to rapid industrialization and growth in infrastructure. So the number of granite producing quarries is increasing in India. Granite is the chief material for the export industries like monuments, flooring slabs, Kitchen articles, sculptures & export. Based on the demand of Granite, the lessee intends to produce the required quantity of Grey Granite for domestic market.

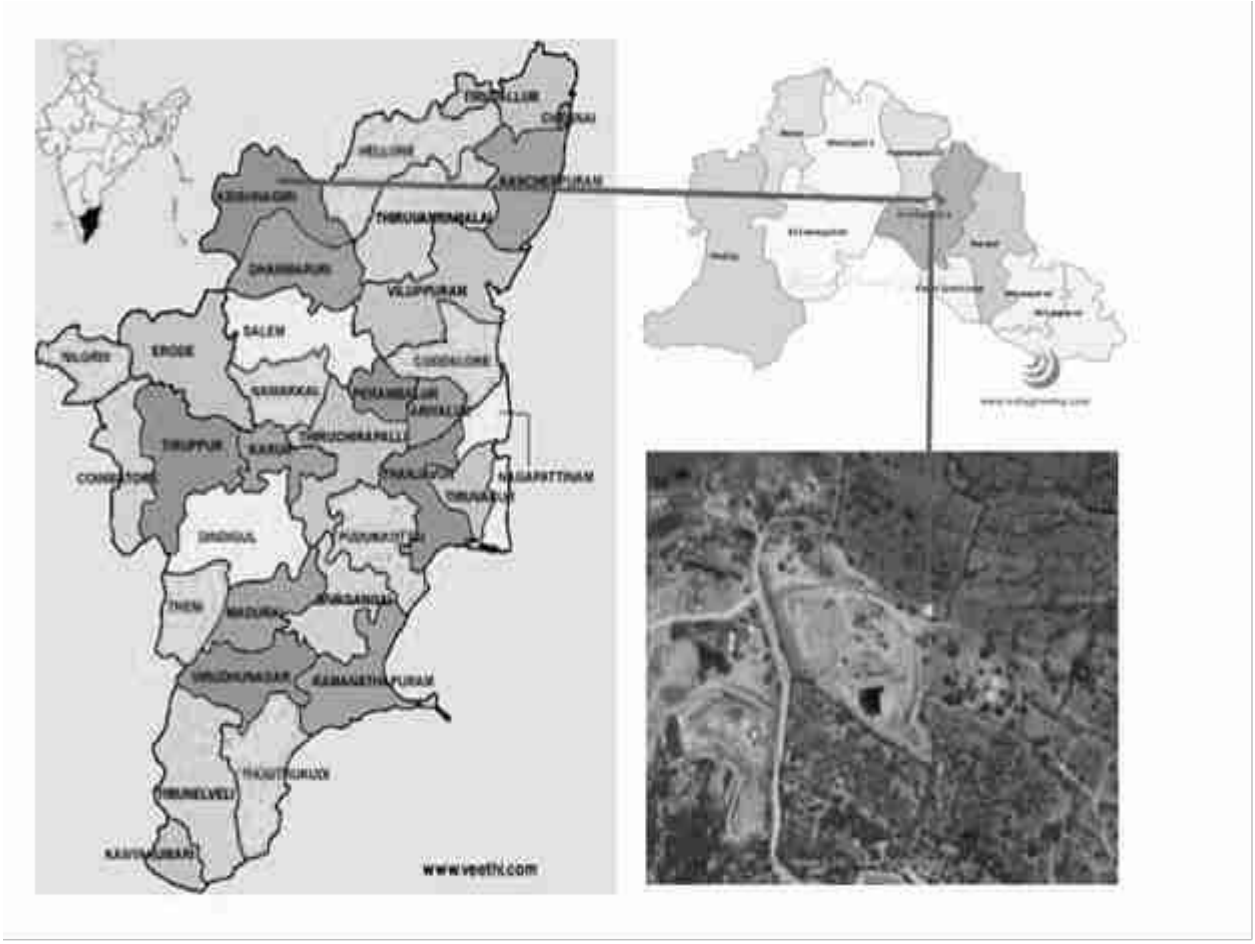


Figure 1: Location Map of the Project Site

Figure 2: Google Image of the Project Site

4. Grey Granite

The Grey Granite and granite gneiss is mainly composed of medium to fine grained with feldspar and quartz are main constituents, garnet and other mafic minerals are secondary minerals. It has commercially called as 'Paradiso' which is widely used for Slabs, Tiles and Monuments after cutting and polishing.

5. Geological Resources

The geological reserves have been calculated based on the cross section method

Table 2. Geological resources

GEOLOGICAL RESERVES								
Section	**Bench**	**Length in (m)**	**Width in (m)**	**Depth in (m)**	**Top Soil in m3**	**Total Reserve m3**	**Recoverable Reserve (Grey Granite) 40% in m3**	**Granite Waste 60% in m3**
TOP SOIL								
XY-A1B1	I	75	120	1	9000			
XY-A2B2	I	42	140	1	5880			
XY-A3B3	I	1	69	1	69			
XY-A4B4	I	28	155	1	4340			
TOTAL					**19289**			
GREY GRANITE								
XY-A1B1	II	75	120	5		45000	18000	27000
	III	75	120	5		45000	18000	27000

	IV	75	120	5		45000	18000	27000
	V	75	120	5		45000	18000	27000
	VI	75	120	5		45000	18000	27000
	VII	75	120	5		45000	18000	27000
XY-A2B2	II	42	140	5		29400	11760	17640
	III	42	140	5		29400	11760	17640
	IV	42	140	5		29400	11760	17640
	V	42	140	5		29400	11760	17640
	VI	42	140	5		29400	11760	17640
	VII	42	140	5		29400	11760	17640
XY-A3B3	II	44	79	5		17380	6952	10428
	III	59	99	5		29205	11682	17523
	IV	59	139	5		41005	16402	24603
	V	59	139	5		41005	16402	24603
	VI	59	139	5		41005	16402	24603
	VII	59	139	5		41005	16402	24603
XY-A4B4	II	28	155	5		21700	8680	13020
	III	63	177	5		55755	22302	33453
	IV	63	177	5		55755	22302	33453
	V	63	177	5		55755	22302	33453
	VI	63	177	5		55755	22302	33453
	VII	63	177	5		55755	22302	33453
TOTAL					**19289**	**957480**	**382992**	**574488**

Table 3. Year wise Production Plan

YEARWISE DEVELOPMENT & PRODUCTION RESERVES								
Year	**Section**	**Bench**	**length in (m)**	**Width in (m)**	**Depth in (m)**	**Total Reserve m3**	**Grey Granite Production Recovery 40% in m3**	**Granite Waste 60% in m3**
04.03.2021 to 03.03.2022	XY-AB	II	8	5	5	200	80	120
		III	50	20	5	5000	2000	3000
		TOTAL				**5200**	**2080**	**3120**
04.03.2022 to 03.03.2023	XY-AB	III	15	20	5	1500	600	900
		IV	13	54	5	3510	1404	2106
		TOTAL				**5010**	**2004**	**3006**
04.03.2023 to 03.03.2024	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
04.03.2024 to 03.03.2025	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
04.03.2025 to 03.03.2026		IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
	GRAND TOTAL					**25600**	**10240**	**15360**

6. Mining

Opencast mining

The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 5.0 meter vertical bench with a bench width of 5.0 meter. The Quarry operation involves Diamond wire saw cutting, loading and transportation.

Process Description

The proposed mining is planned to be carried out by open cast-semi mechanized method of mining, in this proposed mining area by using compressor operated jack hammer drills, excavators and dumpers etc.

Hydraulic excavator will be used to remove the over burden, Shifting of Blocks and waste removal etc. Compressor operated jack hammers will be used to drill the holes as preparatory work before cutting the Block by using Wire saw.

The diamond wire saw has many advantages to its credit such as

1) Reduced Consumption of Explosives.

2) Reduced noise level

3) Reduced Loss of material

4) Simple to use and saves squaring operation.

7. Water Requirement

Total water requirement for the mining project is 2.08 KLD. Domestic water will be sourced from nearby Balinayanapalli Village and other water will be source from nearby road tankers supply.

Table 4. Water Balance

Purpose	Quantity	Source
Drinking Water	1.08 KLD	Packaged Drinking water vendors available in Balinayanapalli village which is about 1.0 Km north of the area.
Green belt	0.5 KLD	Other domestic activities through road tankers supply.
Dust suppression	0.5 KLD	From road tankers supply.
Total	**2.08 KLD**	

8. Man Power

Total manpower required for the project is approximately 24 persons. Workers will be from nearby villages.

Table 5. Man Power

S.No.	Name of the Employment	No. of Employees
1.	Project Manager	1 No.
2.	Record Clerk	1 No.
3.	Skilled	
	Compressor and Wagon Drill operators	1 No.
	Drillers /Workers	5 No.
	Excavator / Rock Breaker Operators	3 No.
	Vehicle Drivers	2 No.
4.	Semi – skilled	
	Watchman	1No.
5.	Unskilled	
	Dressor/Cutter	10 Nos.
	Total	**24 Nos.**

No child less than 18 years will be entertained during quarrying operations.

9. Solid Waste Management

Table 6 Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	4.32 kg/day	Municipal bin including food waste
2	Inorganic	6.48 kg/day	TNPCB authorized recyclers

As per CPCB guidelines: MSW per capita/day =0.45 kg/day

Table 7 500m Radius Cluster Mine

1) Existing quarries:

S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
1.	Thiru. S. Venkatesan	Jagadeveipalayam Village & Bargur Taluk	9 (Part)	3.22.0	04.03.2016 to 03.03.2036 **Instant Proposal**
2.	Tmt.Mariam Banu	Chendarapalli Village & Krishnagiri Taluk	378/3, 379/7, 379/8	3.90.0	01.03.2016 to 29.02.2036
3.	Thiru.S.Ameed	Chendarapalli Village & Krishnagiri Taluk	377/1B, 378/2, 377/2A, 378/1, 377/2B, 377/1A1B, 377/1A2	2.85.5	03.03.2016 to 02.03.2036

2) Abandoned/Old quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
Nil				

3) Details of Proposed quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent	Lease Status
Nil					

4) Details of applied area:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent	Lease Status
Nil					

The Total extent of the Existing / Lease expired / Proposed quarries are 9.97.5 Ha

10. Land Requirement

The total extent area of the project is 3.22.0 Ha, Patta land in Jagadevipalayam Village of Bargur taluk (formerly Krishnagiri Taluk), Krishnagiri District.

Table 8 Land Use Breakup

Description	Present Area (Ha.)	Area to be required at the present scheme period (Ha)	End of life of Quarrying Period (Ha.)
Area under Quarry	0.66.2	0.05.3	2.65.9
Dumps	0.61.2	0.61.2	Backfilling
Stockyard	Nil	Nil	Nil
Infrastructure	Nil	0.02.0	0.02.0
Roads	0.02.0	0.03.0	0.05.0
Green Belt	Nil	0.37.3	0.49.1
Unutilized Area	1.92.6	0.83.8	Nil
Grand Total	**3.22.0**	**1.92.6**	**3.22.0**

11. Human Settlement

There are no habitations within 500m radius. There are villages located in this area within 5km radius of the quarry.

Table 9 Habitation

S. No.	Direction	Name of the Village	Approximate Distance	Approximate population
1	North	Balinayanapalli	1.0km	400
2	West	Soolamalai	3.7km	600
3	East	Kondappanayakempalli	3.6km	150
4	South	Jagadevi	1.2km	600

12. Power Requirement

The proposed granite building stone quarrying does not required any power supply for the quarrying operation.16 Litres diesel per hour required for excavator whenever needed.

13. Scope of the Baseline Study

This chapter contains information on existing environmental scenario on the following parameters.

1. Micro – Meteorology
2. Water Environment
3. Air Environment
4. Noise Environment
5. Soil / Land Environment
6. Biological Environment
7. Socio-economic Environment

13.1 Micro – Meteorology

Meteorology plays a vital role in affecting the dispersion of pollutants, once discharged into the atmosphere. Since meteorological factors show wide fluctuations with time, meaningful interpretation can be drawn only from long-term reliable data.

i) Average Minimum Temperature : 26.3 ^{0}C

ii) Average Maximum Temperature. : 40 ^{0}C

iii) Average Annual Rainfall of the area : 806 mm

13.2 Air Environment

Ambient air monitoring was carried out on monthly basis in the surrounding areas of the Mine Lease area to assess the ambient air quality at the source. To know the ambient air quality at a larger distance i.e. in the study area of 5 km. radius, air quality survey has been conducted at 5 locations. Major air pollutants like Particulate Matter (PM10), Sulphur Dioxide (SO2), Nitrogen Dioxide (NO2) were monitored and the results are summarized below.

The baseline levels of PM10 (57-33 µg/m³), PM2.5 (27-14 µg/m³), SO2 (11-5µg/m³), NO2 (24-10 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from March to June 2022.

13.3 Noise Environment

Ambient noise levels were measured at 5 locations around the proposed project site. The maximum Day noise and Night noise were found to be 60 dB(A) and 44 dB(A) respectively in AES Higher Secondary School. The minimum Day Noise and Night noise were 41 dB(A) and 33 dB(A) respectively which was observed in Project Site.

13.4 Water Environment

- The average pH ranges from 7.21-8.05
- TDS value varied from 415 mg/l to 794 mg/l
- Hardness varied from 176.2 to 526.7 mg/l
- Chloride varied from 48.9 to 137 mg/l

13.5 Land Environment

The analysis results shows that the majority of soil in the project and surrounding area is slightly alkaline in nature and pH value ranges from 7.25 to 8.50 with organic matter 0.2 % to 3.9 %. The concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

13.6 Biological Environment

The proposed Mining lease area is mostly dry barren ground with small shrubs and bushes. No specific endangered flora & fauna exist within the mining lease area.

14. Rehabilitation/ Resettlement

- The overall land of the mine is private patta land. There are no displacement of the population within the project area and adjacent nearby area. Social development of nearby villages will be considered in this project.
- The mine area does not cover any habitation. Hence the mining activity does not involve any displacement of human settlement.

15. Greenbelt Development

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. Green belt has been recommended as one of the major component of Environmental Management Plan, which will improve ecology, environment and quality of the surrounding area.
3. Local trees like Casuarina & Pungan etc. will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 80 trees per annum with interval 5m.
4. The rate of survival expected to be 80% in this area

Table 10 Plantation/ Afforestation Program

Year	Name of species	No of species	Spacing	Survival
04.03.2021-03.03.2022	Casuarina & Pungan	80	5m	80%

04.03.2022-03.03.2023	Casuarina & Pungan	80	5m	80%
04.03.2023-03.03.2024	Casuarina & Pungan	80	5m	80%
04.03.2024-03.03.2025	Casuarina & Pungan	80	5m	80%
04.03.2025-03.03.2026	Casuarina & Pungan	80	5m	80%
	Total	**400**		

16. Anticipated Environmental Impacts

16.1 Air Environment and Mitigation Measures

1. Water sprinkling will be done on the roads & unpaved roads.
2. Proper mitigation measures like water sprinkling will be adopted to control dust emissions.
3. Plantation will be carried out on approach roads, solid waste site & nearby mine premises.
4. To control the emissions regular preventive maintenance of equipments will be carried out.

16.2 Noise Environment and Mitigation Measures

1. Periodical monitoring of ambient noise will be done as per CPCB guidelines.
2. No other equipment except the transportation vehicles and excavator for loading will be allowed.
3. Noise generated by these equipments shall be intermittent and does not cause much adverse impact

17. Responsibilities for Environmental Management Cell (EMC)

The responsibilities of the EMC include the following:

i. Environmental Monitoring of the surrounding area

ii. Developing the green belt/Plantation

iii. Ensuring minimal use of water

iv. Proper implementation of pollution control measures

18. Environmental Monitoring Program

A monitoring schedule with respect to Ambient Air Quality, Water & Wastewater Quality, Noise Quality as per Tamil Nadu State Pollution Control Board (TNPCB), shall be maintained.

19. Project Cost

The total project cost is **Rs.1,37,30,000** for deployment of machinery and creation of infrastructural facilities like approach road, Mine office / Workers Shed, First Aid Room etc., including electrifications and water supply

Table 11 Project Cost details

S. No.	Description	Cost
1	Fixed Asset Cost	38,50,000
2	Operational Cost	95,00,000
3	EMP Cost	3,80,000
	Total	**1,37,30,000**

20. Corporate Environmental Responsibility

The Corporate Environment Responsibility (CER) fund will be provided to the below activity.

Table 12 CER Cost

S.No.	CER Activity	CER 2% of the project cost (Rs.)
1.	Developing the library, Sports/Drinking water facilities in nearby school	**2,74,600**

21. Benefits of the Project

- There is positive impact on socio-economics of people living in the villages. Mining operations in the subject area has positive impact by providing direct and indirect jobs opportunities

- The project is environmentally compatible, financially viable and would be in the interest of construction industry thereby indirectly benefiting the masses.
- Quarrying in this area is not going to have any negative impact on the social or cultural life of the villagers in the near vicinity.

1 Introduction

1.1 Preamble

Environment Impact Assessment (EIA) is a process used to identify the environmental, social & economic impacts of a project prior to decision making. It is a decision-making tool, which guides the project proponent in taking appropriate decisions for proposed projects. It aims to predict environmental impacts at an early stage of project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the prediction options to the proponent. By using EIA, both environmental & economic benefits can be achieved. By considering environmental effects - prediction & mitigation, early benefits in project planning, protection of the environment, optimum utilization of resources, thus saving overall time & cost of the project. EIA also lessens conflicts by promoting community participation, informs project proponent, and helps to lay the base for environmentally sound projects.

The Ministry of Environment & Forests, Govt. of India, made environmental clearance (EC) for certain development projects mandatory through its notification of 27/01/1994 under the Environment Protection Act, 1986 and subsequently the MoEF came out with Environment Impact Notification, S.O.1533(E), and dt.14/09/2006. It has been made mandatory to obtain environmental clearance for different kinds of developmental projects (Schedule-1 of notification). The proposed project falls under item 1(a) of the EIA notification, 2006.

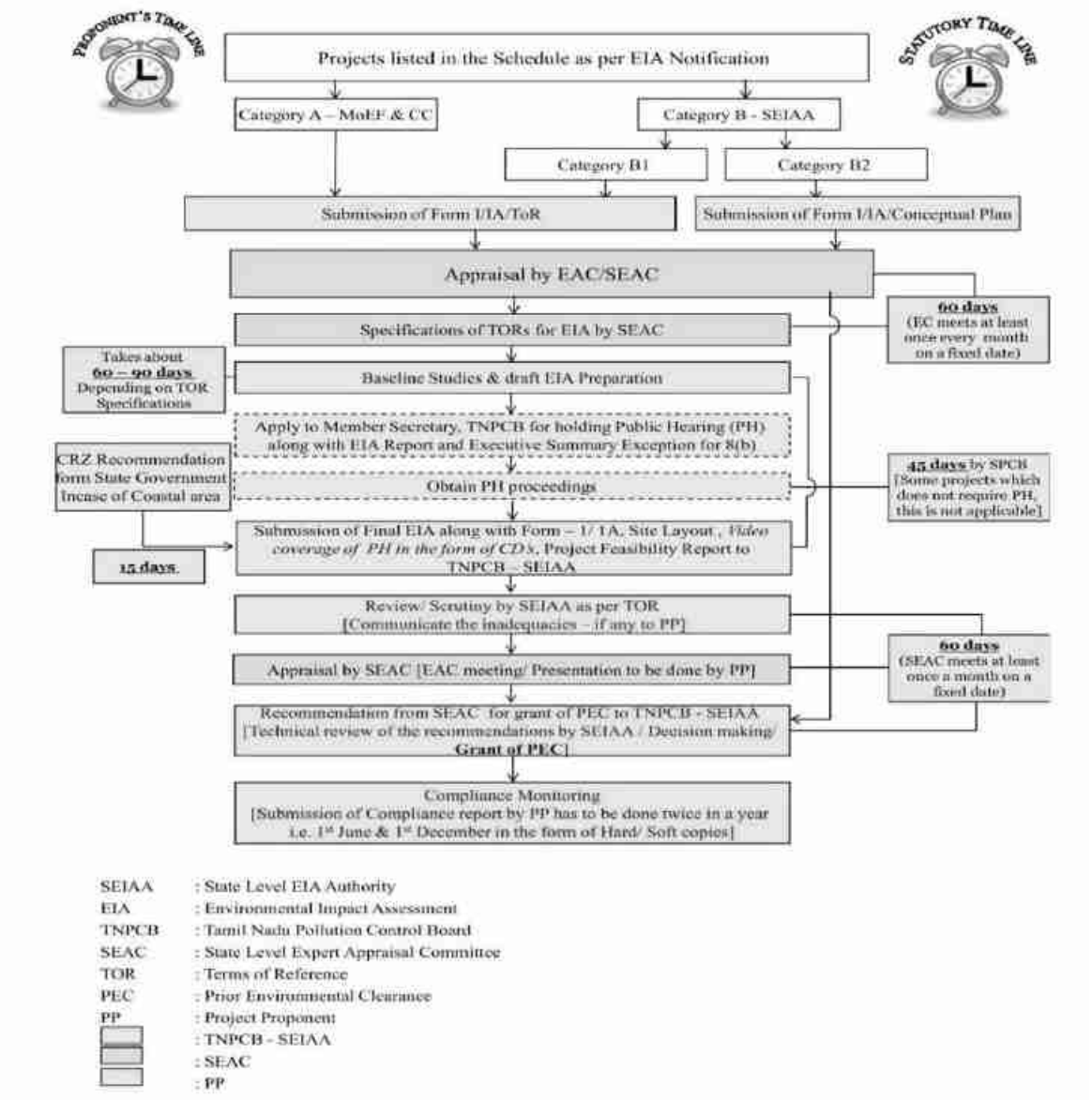
1.2 General Information on Mining of Minerals

Krishnagiri District is covered with wide range of metamorphic rocks of peninsular gnessic complex. These rock formations occur as massive hillocks all over the district in government lands and patta lands, and extensively weathered formations are overlined by soil / alluvium deposits with an average thickness of 1 to 5mts. Granite deposits suitable for the production of Jelly, cut stones and Pillar Stones are available throughout the Krishnagiri District. Granites are widely used in this district as building stones, boulders, cut stones and for the production of Jelly, M.Sand, Crusher Dust. The rock products which are produced not only used in the Krishnagiri District alone but also transported to the neighboring districts. These products enter into the market in different parts of the country.

1.3 Environmental Clearance

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II(M) Govt of India MOEF&CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1

The proposed project is categorized under Category "B1" 1(a) (Cluster) - {Mining of Minerals} as the 500m radius area is more than 5 Ha including the mine lease area. Hence, the project will be considered at SEAC, Tamil Nadu.



1.4 Terms of Reference (ToR)

The terms of Reference has been issued by SEAC TN vide Letter No. SEIAA-TN/F. No. 8965/SEAC/ToR-1133/2021 Dated: 25.03.2022. 33 additional ToR points were recommended by SEAC TN in addition to the Standard ToR Points. The replies for the same were addressed in this report.

1.5 Post Environmental Clearance Monitoring

1.5.1 Methodology adopted

Post project monitoring will be carried out as per conditions stipulated in environmental clearance letter issued by SEIAA, consent issued by SPCB as well as according to CPCB guidelines. The lease area is considered as core zone and the area lying within 10 km radius from the lease boundary is considered as buffer zone, where some impacts may be observed on physical and biological environment. In the buffer zone slight impact may be observed and that too is occasional.

Table 1-1: Post Environmental Clearance Monitoring

S. No.	Description	Frequency of Monitoring
1.	Ambient Air Quality Monitoring	Quarterly/ Half Yearly
2.	Water level & Quality Monitoring	Quarterly/ Half Yearly
3.	Noise Level Monitoring	Quarterly/ Half Yearly
4.	Soil Quality Monitoring	Yearly
5.	Medical Check-up	Yearly

1.6 Generic Structure of the EIA Document

Chapter 1: Introduction. This chapter contains the general information on the mining of minerals, major sources of environmental impacts in respect of mining projects and details of environmental clearance process.

Chapter 2: Project Description. In this chapter the proponent should also furnish detailed description of the proposed project, such as the type of the project, need for the project, project location, layout, project activities during construction and operational phases, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing and other requirements. If the project site is near a sensitive area it is to

be mentioned clearly why an alternative site could not be considered. The project implementation schedule, estimated cost of development as well as operation etc should be also included.

Chapter 3: Analysis of Alternatives (Technology and Site). This chapter gives details of various alternatives both in respect of location of site and technologies to be deployed, in case the initial scoping exercise considers such a need.

Chapter 4: Description of Environment. This chapter should cover baseline data in the project area and study area.

Chapter 5: Impact Analysis and mitigation measures. This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modelling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give the details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

Chapter 6: Environmental Monitoring Program. This chapter should cover the planned environmental monitoring program. It should also include the technical aspects of monitoring the effectiveness of mitigation measures.

Chapter 7: Additional Studies. This chapter should cover the details of the additional studies required in addition to those specified in the ToR and which are necessary to cater to more specific issues applicable to the particular project.

Chapter 8: Project Benefits. This chapter should cover the benefits accruing to the locality, neighbourhood, region and nation as a whole. It should bring out details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

Chapter 9: Environmental Cost Benefit Analysis. This chapter should cover on Environmental Cost Benefit Analysis of the project.

Chapter 10: Environmental Management Plan. This chapter should comprehensively present the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, both during the construction and operational phase and provisions made towards the same in the cost estimates of project

construction and operation. This chapter should also describe the proposed post-monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

Chapter 11: Summary and Conclusions. This chapter gives the summary of the full EIA report condensed to ten A-4 size pages at the maximum. It should provide the overall justification for implementation of the project and should explain how the adverse effects have been mitigated.

Chapter 12: Disclosure of Consultants. This chapter should include the names of the consultants engaged with their brief resume and nature of consultancy rendered.

1.7 Details of Project Proponent

Project Proponent : Thiru.S.Venkatesan

Status of the Proponent : Private & Individual

Proponent's Name & Address : S/o. Subban,
No.26/1, CB Road,
Bargur Post,
Bargur taluk (formerly Krishnagiri Taluk)
Krishnagiri District.

1.8 Brief Description of the Project

1.8.1 Project Nature, Size & Location

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II(M) Govt of India MOEF&CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1.

Proposed proposal pertains to grey granite mining project by semi mechanized open cast method on allotted mine lease area at Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk) of Krishnagiri District, Tamil Nadu. It is an Plain terrain. The total allotted mine lease for the proposed project is 3.22.0 Ha with their maximum production capacity i.e. 10240m^3 of Grey Granite for (Sixty months) Five years only.

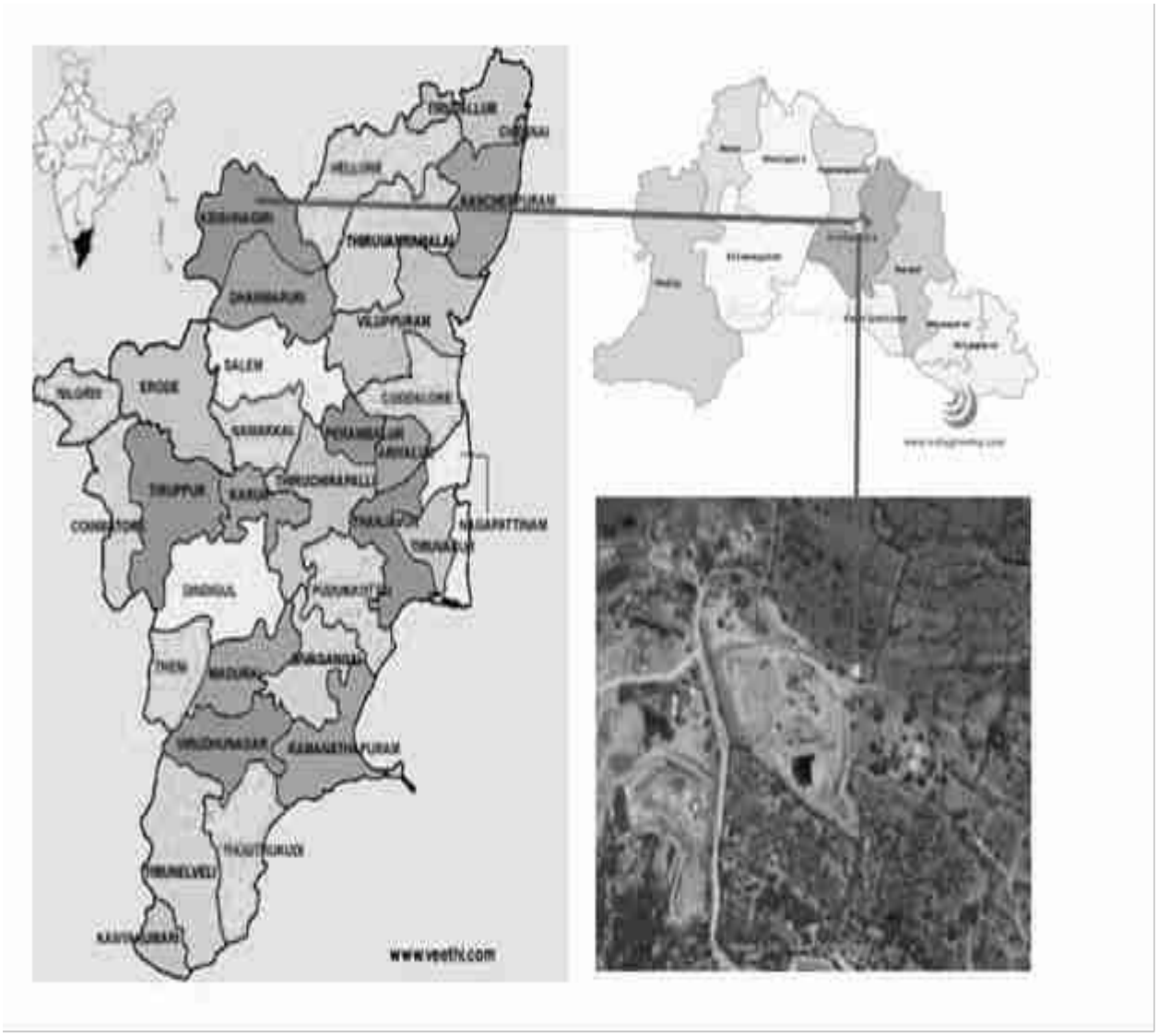


Figure 1-1: Location Map of the Project site

2 Project Description

This chapter furnishes detailed description of the proposed project, such as the type of the project, need for the project, project location, layout, project activities during mining, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing and other requirements. The project implementation schedule estimated cost for carrying out entire mining activity is included.

2.1 General

- Proposed proposal pertains to grey granite mining project by open cast semi mechanized method on allotted mine lease area at Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk) of Krishnagiri District, Tamil Nadu. It is a plain terrain. We have obtained scheme of mining plan approval from 2021-22 to 2025-26 from Commissionerate of Geology and Mining, Guindy for 3.22.0 Ha land area in the S.F.No. 9 (Part) for a proposed mining depth of 15m below ground level and five years production of 10,240m^3 of Grey Granite.

Type of the project:

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II(M) Govt of India MOEF&CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1. The project required to be appraised at state level by State Environment Impact Assessment Authority, Tamil Nadu. Environment Clearance study will involve preparation of final EIA report on the basis of baseline & impact assessment study is carried out. Also, before appraisal, under 7(III) of EIA notification 2006, the project involves the Public Consultation and the same will be conducted under SPCB (TN) in Krishnagiri District. The proceedings of the same has been incorporated in the Final EIA Report.

The mines within 500m radius from the project site is listed below.

Table 2-1: Quarry within 500m Radius

1) Existing quarries:

S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
1.	Thiru. S. Venkatesan	Jagadeveipalayam Village & Bargur Taluk	9 (Part)	3.22.0	04.03.2016 to 03.03.2036 **Instant Proposal**
2.	Tmt.Mariam Banu	Chendarapalli Village & Krishnagiri Taluk	378/3, 379/7, 379/8	3.90.0	01.03.2016 to 29.02.2036
3.	Thiru.S.Ameed	Chendarapalli Village & Krishnagiri Taluk	377/1B, 378/2, 377/2A, 378/1, 377/2B, 377/1A1B,377/1A2	2.85.5	03.03.2016 to 02.03.2036

2) Details of abandoned/old quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
Nil				

3) Details of proposed quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
Nil				

4) Details of applied area:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
Nil				

The Total extent of the Existing / Lease expired / Proposed quarries are 9.97.5 Ha

2.1.1 Need for the project:

Grey Granite is specifically used for the buildings, paving, monuments, aesthetics and many other exterior projects. This project will give employment opportunities to the nearby villagers directly and indirectly. The products of Grey Granite is well known in the international supermarket which will fetch a good foreign exchange to the nation. The Grey Granite quarry provides perennial employment to the villages and improves their standard of living. The product manufacturing industry from Grey Granite improves the technical skill of the local people. This provides economic development and earn foreign exchange to our country

2.2 Brief Description of the project

Table 2-2 Salient Features of the Project

S. No.	Description	Details
1	Project Name	Proposed Grey Granite Quarry-3.22.0 Ha
2	Proponent	Thiru.S.Venkatesan
3	Mining Lease Area Extent	3.22.0Ha
4	Location	S.F.No.9 (Part) Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk), Krishnagiri District.
5	Latitude	N 12° 29' 25.93" to N 12° 29' 31.58"
6	Longitude	E 78° 18' 42.34" to E 78° 18' 44.07"
7	Topography	Plain terrain
8	Site Elevation above MSL	≃478 m
9	Topo sheet No.	57-L/7
10	Minerals of Mine	Grey Granite
11	Proposed production of Mine	Proposed capacity of Grey Granite: 10240 m^3
12	Ultimate depth of Mining	15 m below ground level
13	Method of Mining	Open cast, semi-mechanized mining
14	Water demand	2.08 KLD

15	Source of water	Water will be supplied through tankers supply
16	Man power	Direct :10 nos, Indirect :14 nos
17	Mining Lease	Precise Area Communication Letter obtained from vide G.O.(3D) No.31, Industries (MME.2) Department dated 22.02.2016 for a period of twenty years
18	Mining Plan Approval	First Scheme of Mining plan was approved by Commissionerate of Geology and Mining, Guindy vide Letter Rc.No. 0489/MM4/2021 dated 12.02.2021
19	Production details	Geological reserves of Grey Granite : 3,82,992 m^3 Proposed year wise recoverable reserves of Grey Granite : 10,240 m^3
20	Boundary Fencing	7.5m barrier all along the boundary, Fencing will be provided.
21	Disposal of overburden	The top soil of the lease area is nil. Grey Granite waste forms nearly 60% of ROM and the quantity of waste in the five years will be around 15360m3. Granite Waste will be dumped in the Western side of the lease area for the next five years.
22	Ground water	The quarry operation is proposed up to a depth of **15m** below ground level. The water table is below **42-48m** from ground level which is observed from the nearby open wells and bore wells. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire lease period.
23	Habitations within 500m radius of the Project Site	There is no Habitation within 500m radius of the project site.
24	Drinking water	Water will be supplied through tankers from Balinayanapalli Village which is 1.0 km from the project site.

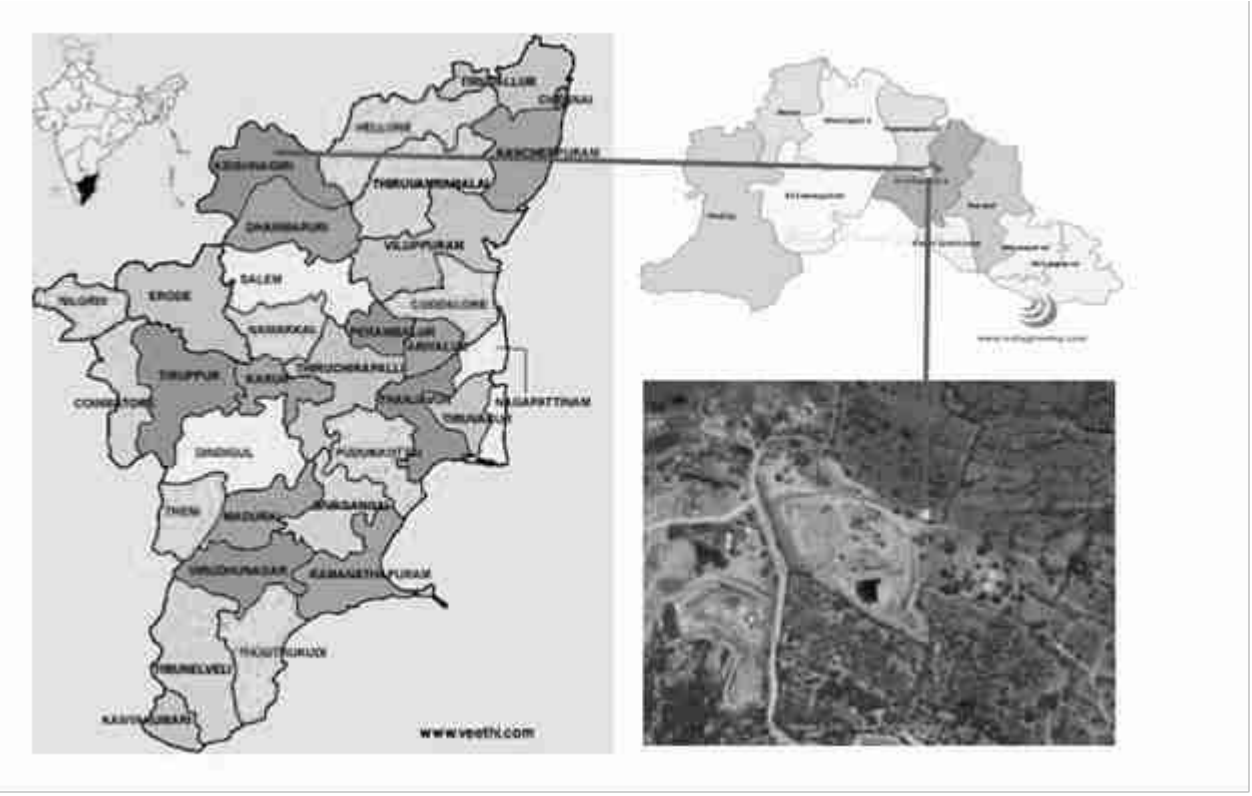


Figure 2-1: Location Map of the Project Site

Figure 2-2: Google Earth Image of the Project Site

2.2.1 Site Connectivity:

The site is connected to NH 77 (Jagadevipalayam-Krishnagiri Road) – 1.5 km towards South side.

Figure 2-3: Site Connectivity

2.3 Location Details:

Table 2-3: Location Details

S. No	Particulars	Details
1.	Latitude	N 12° 29' 25.93" to N 12° 29' 31.58"
2.	Longitude	E 78° 18' 42.34" to E 78° 18' 44.07"
3.	Site Elevation above MSL	478 m
4.	Topography	Plain terrain
5.	Land use of the site	Patta land
6.	Extent of lease area	3.22.0 Ha

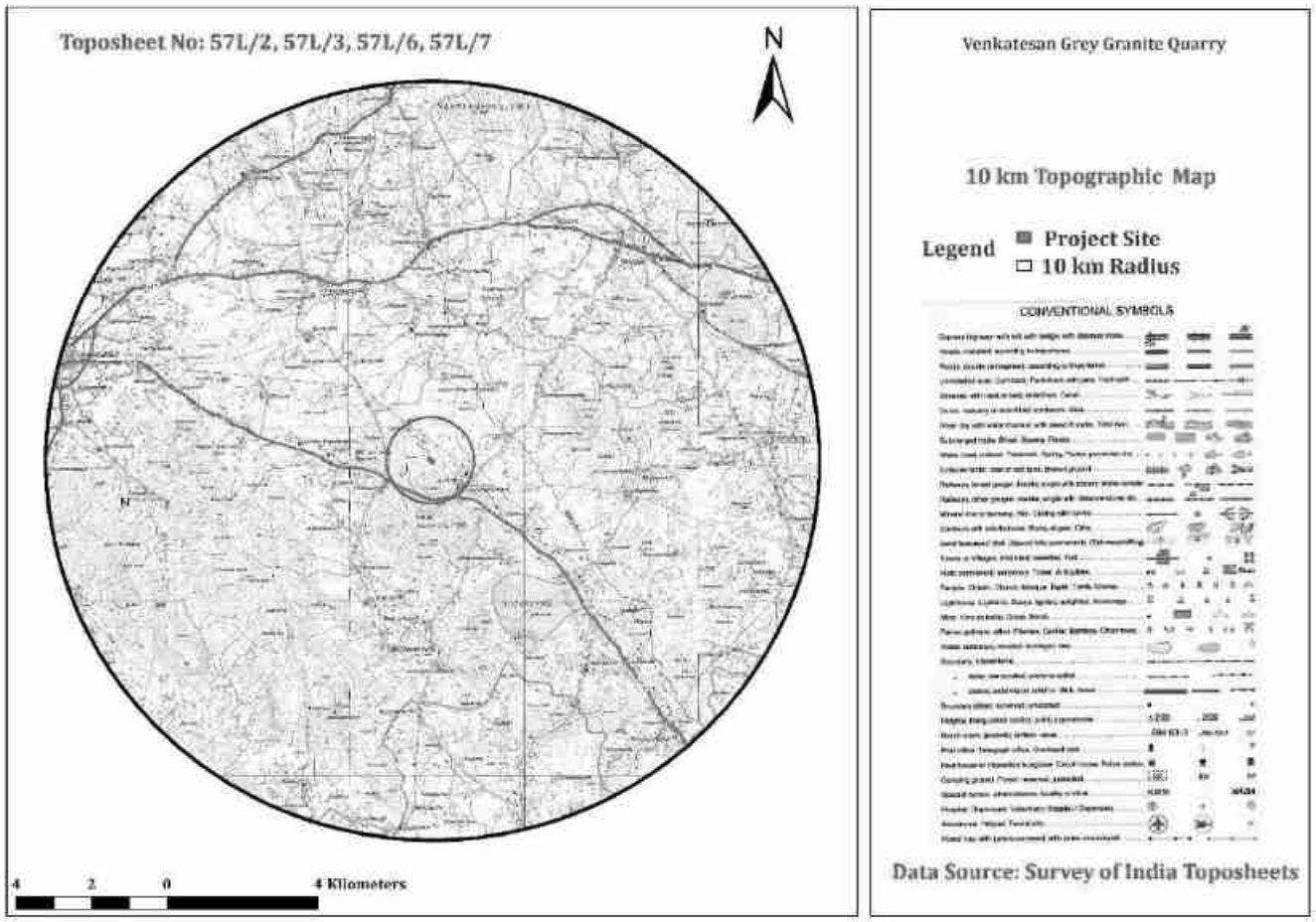


Figure 2-4: Topo Map of Project Site

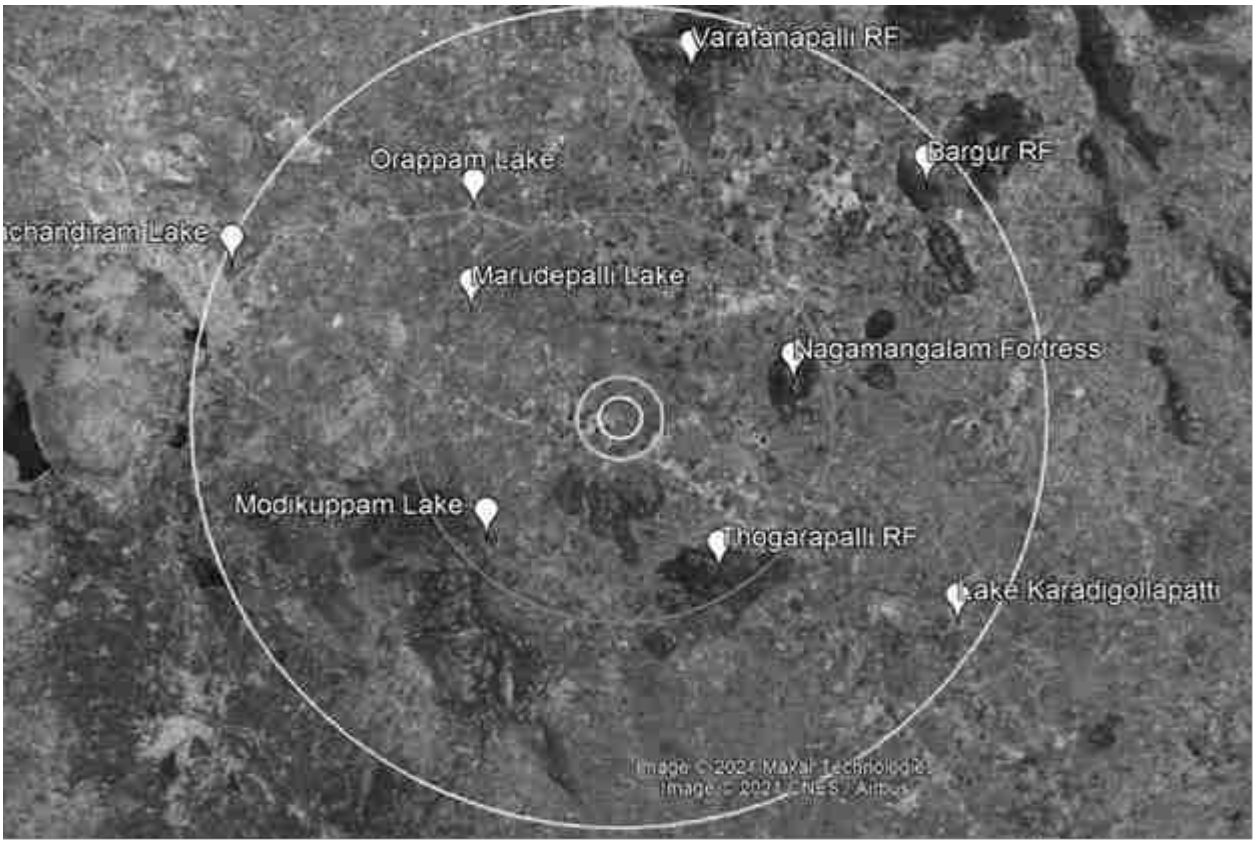


Figure 2-5: Environmental Sensitivity within 15km radius

2.3.1 Site Photographs

The site photographs of the project site are as follows.

Figure 2-6: Site Photographs

2.3.2 Land Use Breakup of the Mine Lease Area

The Mine Lease area is undulated terrain. The land use pattern of the mine lease area as follows.

Table 2-4: Land use pattern

Description	Present Area (Ha.)	Area to be required at the present scheme period (Ha)	End of life of Quarrying Period (Ha.)
Area under Quarry	0.66.2	0.05.3	2.65.9
Dumps	0.61.2	0.61.2	Backfilling
Stockyard	Nil	Nil	Nil
Infrastructure	Nil	0.02.0	0.02.0
Roads	0.02.0	0.03.0	0.05.0
Green Belt	Nil	0.37.3	0.49.1
Unutilized Area	1.92.6	0.83.8	Nil
Grand Total	**3.22.0**	**1.92.6**	**3.22.0**

2.3.3 Human Settlement

There are no habitations within the radius of 500m. The nearby habitations are as follows

Table 2-5: Habitation

S.No.	Direction	Name of the Village	Approximate Distance	Approximate population
1	North	Balinayanapalli	1.0km	400
2	West	Soolamalai	3.7km	600
3	East	Kondappanayakempalli	3.6km	150
4	South	Jagadevi	1.2km	600

2.4 Leasehold Area

The proposed Grey Granite Quarry mine of 3.22.0 Ha is a Patta land. The lease area falls in S.F.No. 9 (P) of Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk), Krishnagiri District. There is no reserve forest or protected forest land within the lease area. There is neither human settlement within 500m radius from the lease area.

2.5 Geology

Krishnagiri District is comprised of Achaean peninsular gneisses such as Charnockites, Hornblende gneisses, Biotite gneisses and migmatites, dolerites and is intruded by younger formations like pegmatite and quartz veins. The peninsular gneiss/migmatite consists of biotite mica, plagioclase and orthoclase feldspars and Quartz and are found as sheet rocks running to several kms from NNE-SSW as a massive rock formation.

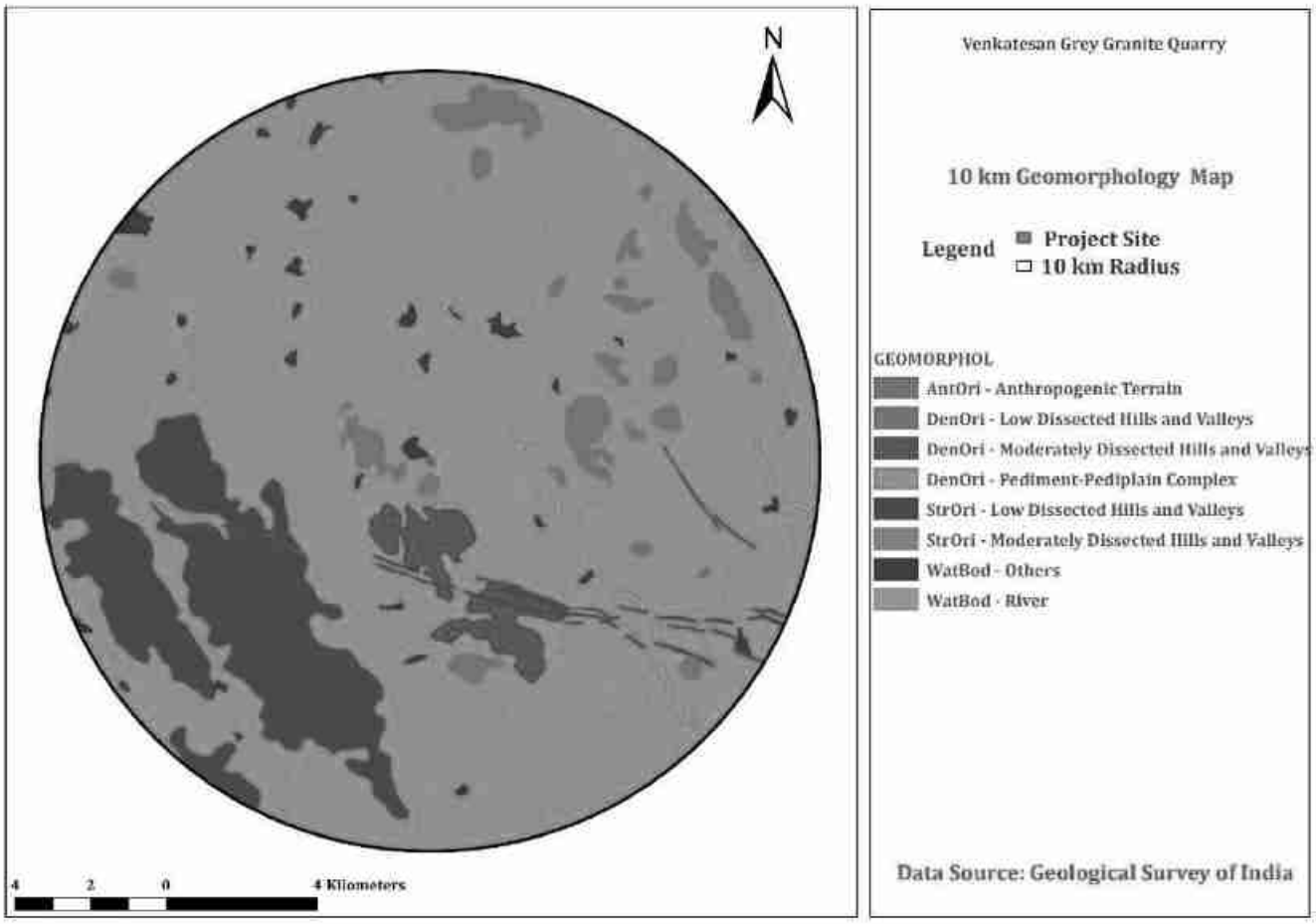


Figure 2-7: Geomorphology

The area applied for quarry lease is a plain ground sloping towards South. The general geological sequences of the rocks in this area are given below.

Description	Geological Age
Top soil	- Recent Age
Pegmatite and Quartz veins	- Archaean Age
Dolerite Dyke	- Archaean Age
Peninsular gneisses and Migmatites	- Archaean (Kolar Group)
Biotite gneisses	- Archaean complex

The regional rocks mostly composed of Quartz, plagioclase feldspar, Orthoclase feldspar and accessories like mica.

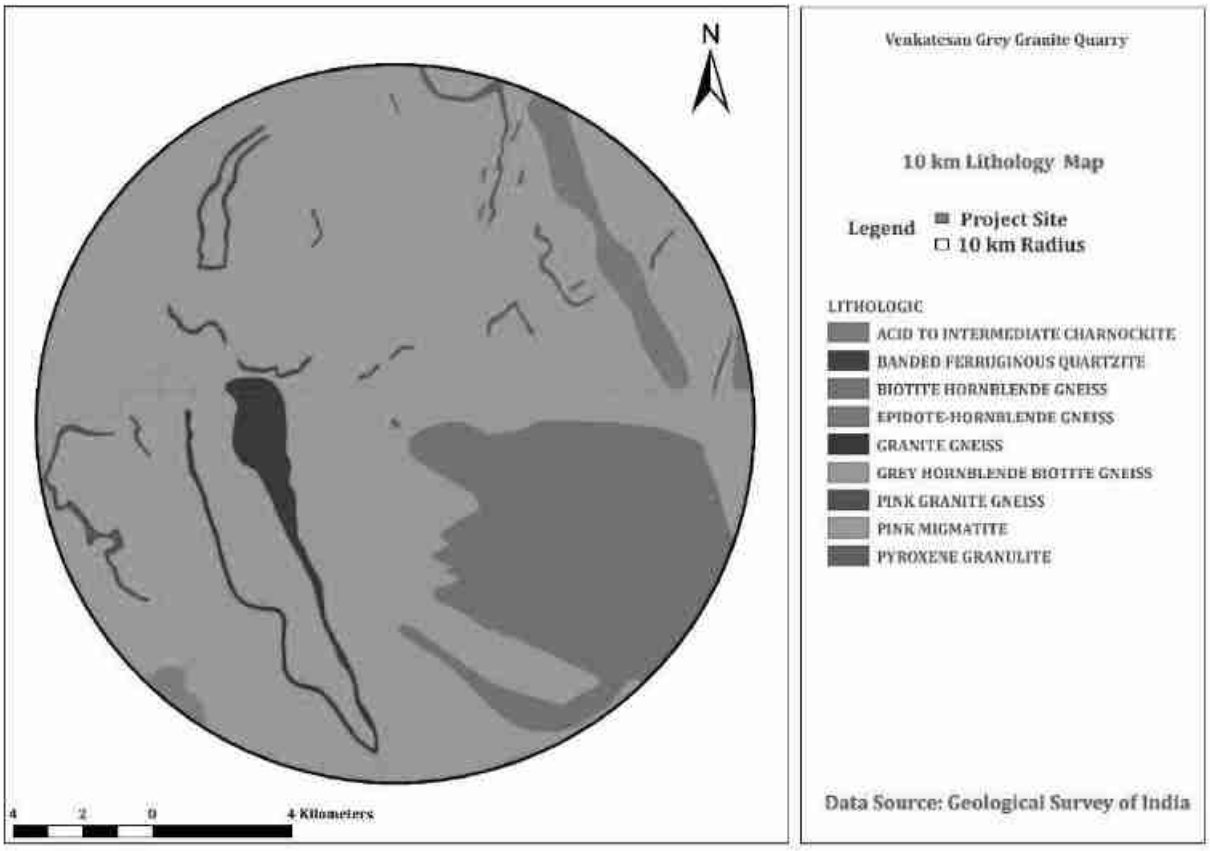


Figure 2-8 Lithology

2.6 Quality of Reserves:

The mining lease area is of 3.22.0 Ha, with production capacity of **10,240 m^3** of Grey Granite, Due to significant role in the domestic as well as infrastructural market, making the mining of Stone along with associated minor minerals is economically viable.

Table 2-6: Details of Mining

S. No	Particulars	Details
1	Method of Mining	Open Cast Semi-mechanized
2	Geological Reserves	Grey Granite – 3,82,992 m^3
3	Mineable Reserves	Grey Granite – 2,01,566 m^3
4	Proposed Production	Grey Granite – 10,240 m^3
5	Elevation Range of the Mine Site	478 m

2.6.1 Estimation of Reserves

The geological plan demarcating the commercially viable granite body has been prepared in 1:1000 scale (Plate No. IV). Totally five sections have been drawn, One section along the strike direction length wise as (X-Y) and another Four sections are drawn perpendicular to strike as (A1-B1), (A2-B2), (A3-B3) & (A4-B4) width wise which are suitably chosen to cover the maximum area, in the scale of plan & Section - 1: 1000. (Plate No. IV & IV-A).

The cross sectional area for the proved depth persistence of 31.0m (1.0m Top Soil + 30.0m Grey Granite) has been worked out for each section. The cross sectional area multiplied by its length of influence on the longer axis gives the volume (insitu) in the cross sectional area. The sum total of the insitu reserves available within the individual cross sectional area gives the Geological Reserves of the quarry lease area.

From the total Geological insitu Reserves, the quantity of saleable granite stones and quantity of granite waste generation are computed by applying recovery factor of about 40% by volume.

As the saleable Grey Granite stone are in terms of cubic meters (Volume) only and not in terms of tonnage as in the case of major industrial mineral, the geological Reserves, mineable reserves and quantum of waste generated etc, are given only in terms of cubic meters. (Volume).

The details of estimation of Geological Reserves and Mineable Reserves with reference to the Geological Plan & section and Conceptual Plan & Section as shown in (Plate no.IV and VII) respectively.

2.6.2 Geological Reserves

The Geological reserve is estimated as 957480 m^3 upto a depth of 31.0m (1.0m Top Soil + 30.0m Grey Granite), by area cross sectional method

Table 2-7: Geological Reserves

GEOLOGICAL RESERVES								
Section	**Bench**	**length in (m)**	**Width in (m)**	**Depth in (m)**	**Top Soil in m3**	**Total Reserve m3**	**Recoverable Reserve (Grey Granite) 40% in m3**	**Granite Waste 60% in m3**
TOP SOIL								
XY-A1B1	I	75	120	1	9000			
XY-A2B2	I	42	140	1	5880			
XY-A3B3	I	1	69	1	69			
XY-A4B4	I	28	155	1	4340			
TOTAL					19289			
GREY GRANITE								
XY-A1B1	II	75	120	5		45000	18000	27000
	III	75	120	5		45000	18000	27000
	IV	75	120	5		45000	18000	27000
	V	75	120	5		45000	18000	27000
	VI	75	120	5		45000	18000	27000

	VII	75	120	5		45000	18000	27000
XY-A2B2	II	42	140	5		29400	11760	17640
	III	42	140	5		29400	11760	17640
	IV	42	140	5		29400	11760	17640
	V	42	140	5		29400	11760	17640
	VI	42	140	5		29400	11760	17640
	VII	42	140	5		29400	11760	17640
XY-A3B3	II	44	79	5		17380	6952	10428
	III	59	99	5		29205	11682	17523
	IV	59	139	5		41005	16402	24603
	V	59	139	5		41005	16402	24603
	VI	59	139	5		41005	16402	24603
	VII	59	139	5		41005	16402	24603
XY-A4B4	II	28	155	5		21700	8680	13020
	III	63	177	5		55755	22302	33453
	IV	63	177	5		55755	22302	33453
	V	63	177	5		55755	22302	33453
	VI	63	177	5		55755	22302	33453
	VII	63	177	5		55755	22302	33453
TOTAL					**19289**	**957480**	**382992**	**574488**

2.6.3 Mineable Reserves

The Mineable reserves are calculated by deducting 7.5m Safety distance and Bench Loss. The Mineable Reserve is calculated upto a depth of 31.0m (1.0m Top Soil + 30.0m Grey Granite).

Table 2-8: Mineable Reserves

MINEABLE RESERVES								
Section	**Bench**	**length in (m)**	**Width in (m)**	**Depth in (m)**	**Top Soil in m^3**	**Total Reserve m^3**	**Recoverable Reserve (Grey**	**Granite Waste 60% in m^3**

							Granite) 40% in m^3	
TOP SOIL								
XY-A1B1	I	66	98	1	6468			
XY-A2B2	I	42	125	1	5250			
XY-A3B3	I	1	50	1	50			
XY-A4B4	I	20	117	1	2340			
TOTAL					**14108**			
GREY GRANITE								
XY-A1B1	II	65	96	5		31200	12480	18720
	III	60	86	5		25800	10320	15480
	IV	55	76	5		20900	8360	12540
	V	50	66	5		16500	6600	9900
	VI	45	56	5		12600	5040	7560
	VII	40	46	5		9200	3680	5520
XY-A2B2	II	42	123	5		25830	10332	15498
	III	42	113	5		23730	9492	14238
	IV	42	103	5		21630	8652	12978
	V	42	93	5		19530	7812	11718
	VI	42	83	5		17430	6972	10458
	VII	42	73	5		15330	6132	9198
XY-A3B3	II	44	58	5		12760	5104	7656
	III	59	74	5		21830	8732	13098
	IV	59	109	5		32155	12862	19293
	V	59	99	5		29205	11682	17523

	VI	59	89	5		26255	10502	15753
	VII	59	79	5		23305	9322	13983
XY-A4B4	II	19	115	5		10925	4370	6555
	III	49	128	5		31360	12544	18816
	IV	44	118	5		25960	10384	15576
	V	39	108	5		21060	8424	12636
	VI	34	98	5		16660	6664	9996
	VII	29	88	5		12760	5104	7656
TOTAL					**14108**	**503915**	**201566**	**302349**

2.6.4 Year wise Production Plan

The year-wise development for the ensuing Five Years period is shown in the plates with cross sections. In view of the development, year wise proposal for the present scheme period is from existing pit towards Southeastern side of the lease area.

The Proposal for the next five Years reserves are calculated upto a depth of 15.0m

Table 2-9: Year wise Production Plan

YEARWISE DEVELOPMENT & PRODUCTION RESERVES								
Year	**Section**	**Bench**	**length in (m)**	**Width in (m)**	**Depth in (m)**	**Total Reserve m3**	**Grey Granite Production Recovery 40% in m3**	**Granite Waste 60% in m3**
04.03.2021 to 03.03.2022	XY-AB	II	8	5	5	200	80	120
		III	50	20	5	5000	2000	3000
		TOTAL				**5200**	**2080**	**3120**
04.03.2022 to 03.03.2023	XY-AB	III	15	20	5	1500	600	900
		IV	13	54	5	3510	1404	2106
		TOTAL				**5010**	**2004**	**3006**

04.03.2023 to 03.03.2024	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
04.03.2024 to 03.03.2025	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
04.03.2025 to 03.03.2026		IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
	GRAND TOTAL					**25600**	**10240**	**15360**

Total Reserves ROM = 25600 m3

Total production for the next Five Years (40%) = 10240 m3

(Grey Granite)

Granite waste (60%) = 15360 m3

Total Waste = 15360 m3

Granite: Waste ratio is = 1:1.50

(* Total Waste- Granite waste)

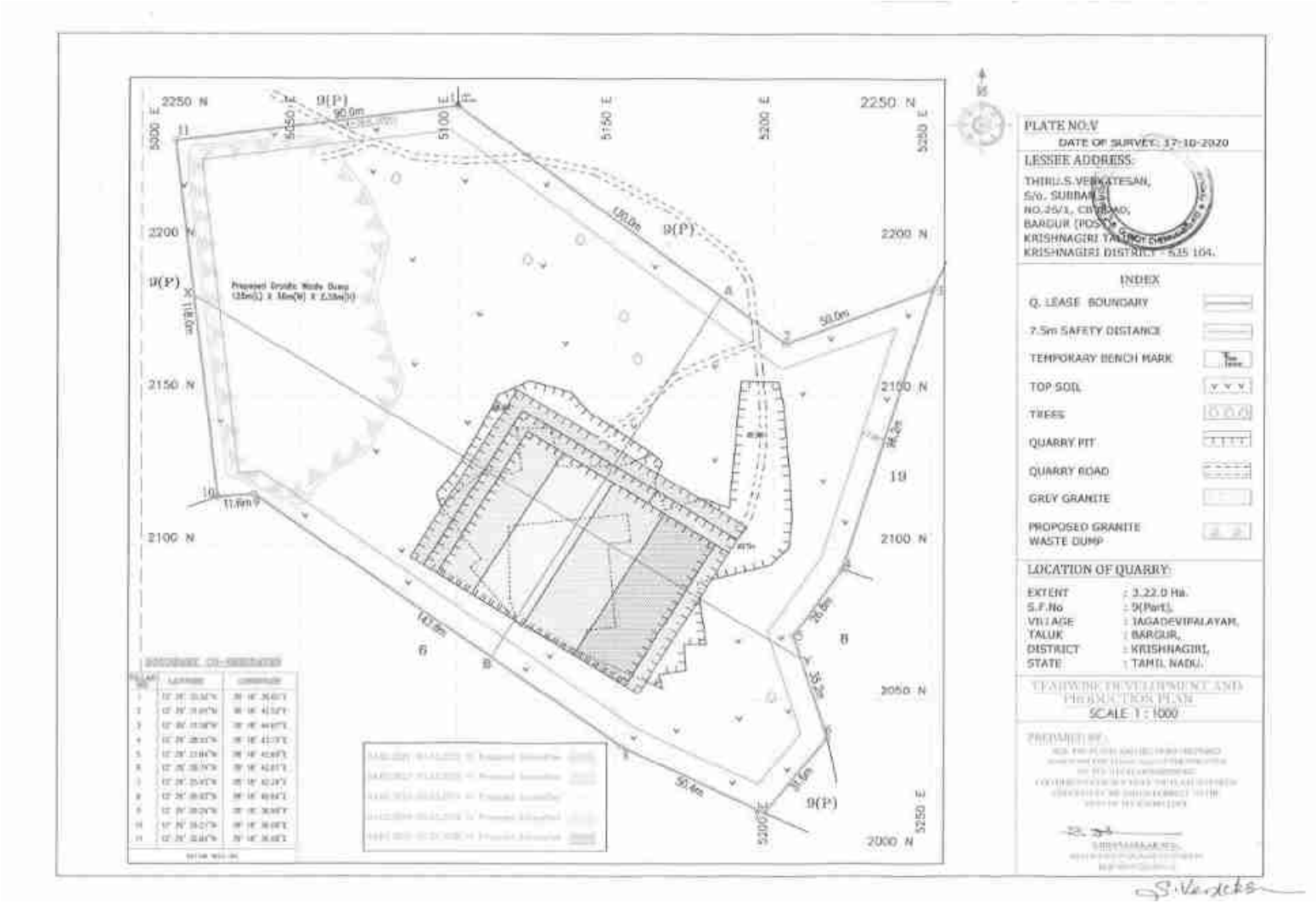


Figure 2-9 Year wise Production Plan

2.7 Type of Mining

The proposed project is an open cast semi mechanized mining with one 5.0 m bench for Top soil & Gravel followed by 5.0m vertical bench with a bench width not less than the bench height. However, as far as the quarrying of Granite is concerned, observance of the provisions of regulations 106(2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence, it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with the Regulation 106(2) (b) of MMR-1961, under Mines Act- 1952.

2.7.1 Method of Working:

In mechanized mining help of compressor, drilling, machine, various diamond saws, wire saws, channeling machines, wedges and broaching tools, cranes, dumpers etc., is taken. Endless braided steel wires and diamond saws are employed for cutting blocks. Jet channeling or jet piercing is quite common. In some mines flame cutting is done to cut the rocks.

In this proposed Quarry area under consideration mining will be done by opencast semi-mechanized method.

2.7.2 Overburden

The Top soil of the lease area is Nil for the next five years. Grey Granite waste forms nearly 60% of ROM and the quantity of waste in the five years will be around 15360 m^3. Granite Waste will be dumped in the Western side of the lease area for the next five years.

	Proposed Waste Dump (Granite waste)
Length (m)	120.0
Width (m)	56.0
Height (m)	2.28
Total Quantity (m^3)	15360

2.7.3 Machineries to be used

Type of machineries proposed for quarrying operation for the entire project is listed below.

Table 2-10: List of Machineries used

S.No.	Type	Nos	Dia Hole mm	Size Capacity	Make	Motive power
1	Jack hammer & Accessories	4	35	1.2m to 6m	Atlas Copco	Compressed air
2	Compressor	1	7.5kgs/cm^2	400 psi	ELGI	Diesel Drive
3	Diamond wire saw	1	-	30m^3/Day	Optima	Diesel Generator
4	Gen set	1	-	Powerica	-	CP 125 D5P (H.P)
5	Excavator	1	-	300	Tata Hitachi	Diesel Drive
6	Tipper	2	-	10 Tonnes	Tata	Diesel Drive

2.7.4 Blasting:

2.7.4.1 Blasting Pattern:

Conventional low explosives were used. Since the dimensional stones, which are needed to be without internal cracks, high explosives were not used. The scale of blasting was however very less considering the rate of production.

2.7.4.2 Drilling & Blasting:

The drilling and blasting parameters are in correlation with the proposals laid down in the approved mining plan. Shallow holes of 32mm dia. holes are drilled and the depth of hole will be generally about 1.0m. Water sprinkled for suppression of air borne dust on Mine haulage roads and waste dumps on regular intervals by water tankers. Drilling of blast holes will be always under wet condition to prevent flying of dust. In the unloading point of Tippers, water was sprinkled and further the drillers were provided with respirators in accordance with mines regulations.

Conventional low explosives were used. Since the dimensional stones, which are needed to be without internal cracks, high explosives were not used. The scale of blasting was however very less considering the rate of production. Muffle blasting was not necessary as the area was free from dwelling houses, public utilities etc., Now wire saw machine is being utilized for primary cutting to liberate the required sizes of block from the parent rock The secondary splitting of the blocks been done by pressure-split method with the help of feather and wedges. In view of above, there is no adverse effect on dust, noise and ground vibration by mining activities.

2.7.4.3 Storage & Safety measures taken during blasting:

The project proponent "Thiru.S.Venkatesan" will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by Permit Mines Manager. The copy of the explosive certificate is attached as ***Annexure.***

2.8 Man Power Requirements

The manpower requirement to meet out the production Schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations is as follows.

Table 2-11: Man Power Requirements

S.No.	Name of the Employment	No. of Employees
1.	Project Manager	1 No.
2.	Record Clerk	1 No.
3.	Skilled	
	Compressor and Wagon Drill operators	1 No.
	Drillers /Workers	5 No.
	Excavator / Rock Breaker Operators	3 No.
	Vehicle Drivers	2 No.
4.	Semi – skilled	
	Watchman	1No.
5.	Unskilled	
	Dressor/Cutter	10 Nos.
	Total	**24 Nos.**

No child less than 18 years will be entertained during quarrying operations.

2.8.1 Water Requirement

Total water requirement for the mining project is 2.08 KLD. Domestic water will be sourced from nearby Balinayanapalli Village and other water will be source from nearby road tankers supply.

Table 2-12: Water Requirment

Purpose	Quantity	Sources
Drinking Water	1.08KLD	Packaged Drinking water vendors available in Balinayanapalli Village which is about 1.0 km from the project site.
Green belt	0.5KLD	Other domestic activities through road tankers supply
Dust suppression	0.5KLD	From road tankers supply
Total	**2.08 KLD**	

2.9 Project Implementation Schedule

The implementation schedule of the proposed Mine Lease of Thiru.S.Venkatesan (3.22.0 Ha) is as follows.

Table 2-13: Mining Schedule

MINING SCHEDULE					
Activity	April-23	April-24	April-25	April-26	April-27
Site Clearance					
Excavation - Top Soil Removal/Overburden					
I Year Production – 2080 Cum – Grey Granite					
II Year Production – 2004 Cum – Grey Granite					
III Year Production – 2052 Cum – Grey Granite					
IV Year Production - 2052 Cum – Grey Granite					
V Year Production - 2052 Cum – Grey Granite					

2.10 Solid Waste Management

Table 2-14: Solid Waste Management

S.No	Type	Quantity	Disposal Method
1	Organic	4.32 kg/day	Municipal bin including food waste
2	Inorganic	6.48 kg/day	TNPCB authorized recyclers

As per CPCB guidelines: MSW per capita/day =0.45 kg/day

2.11 Mine Drainage

The quarry operation is proposed up to a depth of 15m below ground level. The water table is below 42-48m from the ground level which is observed from the nearby bore wells and bore wells of this area. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire lease period.

2.12 Power Requirement

The proposed Grey Granite Building Stone quarrying does not required any power supply for the quarrying operation. **16 Liter** diesel per hour used for excavator whenever needed.

2.13 Project Cost

a. Fixed Assset Cost

Sl. No.	Description	Amount (Rs)
1	Land cost	35,00,000
2	Labour shed	1,20,000
3	Sanitary facility	70,000
4	Fencing cost	1,60,000
	Total	**38,50,000**

b. Operational Cost:

Sl. No.	Description	Approximate Amount (Rs)
1	Excavator	55,00,000
2	Tippers 2 Nos	20,00,000

3	Wire saw	10,00,000
4	Compressor with loose tools	10,00,000
	Total	**95,00,000**

c. EMP Cost:

SL.No	Description	Approximate Amount (Rs)
1	Drinking water facility	1,00,000
2	Safety kits	80,000
3	Water sprinkling	50,000
4	Afforestation	30,000
5	Water quality test	40,000
6	Air quality test	40,000
7	Noise / Vibration test	40,000
	Total	**3,80,000**

Grand Total project Cost = Rs. 1,37,30,000/-

2.14 Greenbelt

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. Green belt has been recommended as one of the major component of Environmental Management plan, which will improve ecology, environment and quality of the surrounding area.
3. Local trees like, Casuarina, Pungan etc. will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 80 trees per annum with interval 5m.
4. The rate of survival expected to be 80% in this area

Table 2-15 Plantation/ Afforestation Program

Year	Name of species	No of species	Spacing	Survival

04.03.2021-03.03.2022	Casuarina & Pungan	80	5m	80%
04.03.2022-03.03.2023	Casuarina & Pungan	80	5m	80%
04.03.2023-03.03.2024	Casuarina & Pungan	80	5m	80%
04.03.2024-03.03.2025	Casuarina & Pungan	80	5m	80%
04.03.2025-03.03.2026	Casuarina & Pungan	80	5m	80%
	Total	**400**		

3 Description of the Environment

3.1 General:

The method of mining for extracting grey granite quarry is required to be selected in such a manner to ensure sustainable development. Mining activities invariably affect the existing environmental status of the site. It has both adverse and beneficial effects. In order to maintain the environmental commensuration with the mining operation, it is essential to undertake studies on the existing environmental scenario and assess the impact on different environmental components. This would help in formulating suitable management plans and sustainable resource extraction.

To understand the existing environmental scenario, Baseline data helps in identification, prediction and evaluation of impacts in Environmental Impact assessment. Through field study, baseline data are collected considering various factors of the project. This includes-

- Physical- the area, the soil properties, the geological characteristics, the topography, etc
- Chemical- water, air, noise and soil pollution levels, etc.
- Biological- the biodiversity of the area, types of flora and fauna, species richness, species distribution, types of ecosystems, presence or absence of endangered species and/or sensitive ecosystems etc.
- Socioeconomic- demography, social structure, economic conditions, developmental capabilities, displacement of locals, etc.

3.1.1 Study Area:

The study area for the mining projects is as follows:

- Mine lease area as the "core zone"
- A study area of 10 km radius from the project boundary is designated as buffer Zone and for the study of Socio-economic status, 10 km radius from the boundary limits of the mine lease area has been selected.

We have obtained Terms of Reference from SEIAA vide Lr.No.SEIAA–TN/F.No.8965/SEAC/ToR-1133/20210 dated 25.03.2022. The baseline monitoring is carried out in March to June 2022 and the analysis is briefed in the EIA report. The proponent has engaged M/s. Ecotech labs Pvt. Ltd for carrying out the existing baseline study.

3.1.2 Instruments Used

The following instruments were used at the site for baseline data collection.

1. Respirable Dust Sampler with attachment for gaseous Pollutants, Envirotech APM 460, APM411.
2. Fine Particulate Matter (FPM) Sampler, APM 550
4. Sound Level Meter Model SL–4010
5. 2000 series watchdog automatic weathering monitoring station

3.1.3 Baseline Data Collection Period:

The baseline data is collected in accordance with the CPCB Guidelines. The Baseline study is carried out from March to June 2022.

3.1.4 Frequency of Monitoring

Table 3-1: Frequency of Sampling and Analysis

Attributes	Sampling	Frequency
Air environment – Meteorological (wind speed, wind direction, rainfall, humidity, temperature)	Project site	1 hourly continuous
Air environment – Pollutants PM 10 PM 2.5 SO_2 NO_X Lead in PM	5 locations	24 hourly twice a week 4 hourly. Twice a week, One non-monsoon season 8 hourly, twice a week 24 hourly, twice a week
Noise	5 locations	24 hourly Once in 5 locations
Water (Ground water) pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium, Potassium,	5 locations	Once in 5 locations

Salinity, Total nitrogen, Total Coliforms, Fecal Coliforms		
Water (surface water) pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium, Potassium, Salinity, Total nitrogen, Total Coliforms, Fecal Coliforms	Sample from nearby lakes/river	One-time Sampling
Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	5 locations	Once in 5 locations
Ecology and biodiversity Study	Study area covering 10 km radius	One-time Sampling
Socio- Economic study (Population, Literacy Level, employment, Infrastructure like school, hospitals & commercial establishments)	Villages around 10 km radius	One-time Sampling

3.1.5 Secondary data Collection

Apart from the primary data, Secondary data is also used for the collection; collation; synthesis and interpretation

- Flora & Faunal Study
- Land use study
- Demography and socio-economic analysis
- Meteorological data, from Indian Meteorological Department (IMD)

3.1.6 Study area details

Table 3-2 Study area details

S. No	Description	Details	Source
1.	Project Location	S.F.No.9 (Part), Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk) , Krishnagiri District	Field Study
2.	Latitude & Longitude	Latitude: N 12° 29' 25.93" to N 12° 29' 31.58" Longitude: E 78° 18' 42.34" to E 78° 18' 44.07"	Topo Sheet
3.	Topo Sheet No.	57-L/7	Survey of India Toposheet
4.	Mine Lease Area	3.22.0 Ha	--
Demography in the study area (as per Census 2011)			
5.	Total Population	6747	Census Survey of India
6.	Total Number of Households	1607	
7.	Maximum Temperature (°C)	40	IMD
8.	Minimum Temperature (°C)	26.3	
9.	Ecological Sensitive Areas - Wetlands, watercourses or other waterbodies, coastal zone, biospheres, mountains, forests	❖ Modikuppam Lake – 4km, SW ❖ Marudepalli Lake – 4.5 km, W ❖ Orappam Lake – 6km, N ❖ Marachandiram Lake – 9.5 km, W ❖ Karadigollapatti Lake – 9km, SE ❖ Bargur RF – 9km, NE ❖ Varatanapalli RF – 8km, N ❖ Thogarapallai RF – 3.5 km, S	Google Earth/Field Study
10.	Densely Populated area	Bargur (7km, NE)	

11.	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	**Schools & Colleges** 1. Government Primary school, Jagadevipalayam - 800m, SE 2. Government Higher Secondary school, Shendarapallli - 1km, SW 3. Govt High school, Karadikal - 3 km, N **Hospitals** 1. Jagadevi Government Hospital - 800m, SE 2. TCR Multi speciality Hospital - 9.6km, W	Google Earth/ Field Study

3.1.7 Site Connectivity:

The site is connected to (NH 77) - Jagadevipalayam-Krishnagiri Road – 1.5 km towards South side.

Figure 3-1: Site Connectivity

3.2 Land use Analysis

3.2.1 Land Use Classification

Land Use / Land Cover - Land Use refers to man's activity and the various uses, which are carried on land. Land Cover refers to natural vegetation, water bodies, rock/soil, artificial cover and others, resulting due to land transformation. The present Land Use/Land Classification map is developed with following objectives. The main objective of the study is to classify the different land use within 10 km from the project boundary.

3.2.2 Methodology

Information of land use and land cover is important for many planning and management activities concerning the surface of the earth (Agarwal and Garg, 2000). Land use refers to man's activities on land, which are directly related to land (Anderson et al., 1976). The land use and the land cover determine the infiltration capacity. Barren surfaces are poor retainers of water as compared to grasslands and forests, which not only hold water for longer periods on the surface, but at the same time allow it to percolate down.

The terms 'land use' and 'land cover' (LULC) are often used to describe maps that provide information about the types of features found on the earth's surface (land cover) and the human activity that is associated with them (land use). Satellite remote sensing is being used for determining different types of land use classes as it provides a means of assessing a large area with limited time and resources. However, satellite images do not record land cover details directly and they are measured based on the solar energy reflected from each area on the land. The amount of multi spectral energy in multi wavelengths depends on the type of material at the earth's surface and the objective is to associate particular land cover with each of these reflected energies, which is achieved using either visual or digital interpretation. In the present study the task is to study in detail the land use and land cover in and around the project site. The study envisages different LULC around the proposed project area and the procedure adopted is as below.

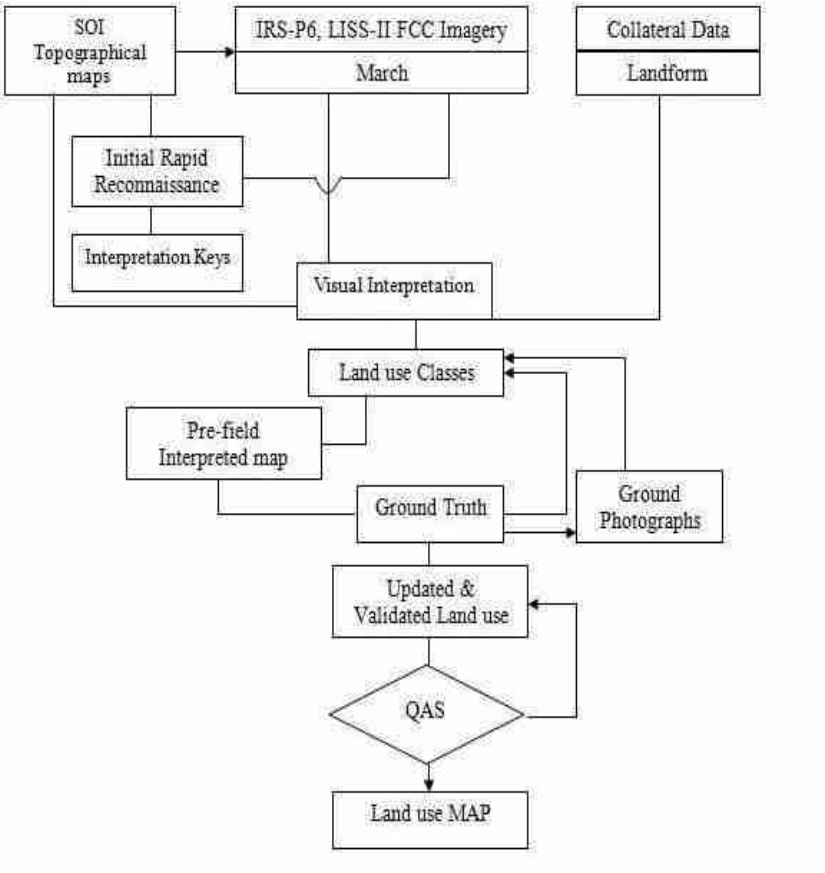


Figure 3-2 Flow Chart showing Methodology of Land use mapping

3.2.3 Satellite Data

IRS Resourcesat-2 LISS-III multispectral satellite data of 05th March 2016 was utilized for the present study. Details of satellite data is given below. The rectification of imagery was carried out on to bring the digital data on the earth coordinate system by means of ground control point (GCP) assignments/SOI topo sheets.

3.2.4 Scale of mapping

Considering the user defined scale of mapping, 1:50000 IRS-P6, LISS-III data on 1:50000 Scale was used for Land use / Land cover mapping of 10 km radius for proposed site. The description of the land use categories for 10 km radius and the statistics are given for 10 km radius.

3.2.5 Interpretation Technique

Standard on screen visual interpretation procedure was followed. The various Land use / Land cover classes interpreted along with the SOI topographical maps during the initial rapid reconnaissance of the study area. The physiognomic expressions conceived by image elements of color, tone, texture, size, shape, pattern, shadow, location and associated features are used to interpret the FCC imagery. Image interpretation keys were developed for each of the LU/LC classes in terms of image elements.

February 2016 FCC imagery (Digital data) of the study area was interpreted for the relevant land use classes. On screen visual interpretation coupled with supervised image classification techniques are used to prepare the land use classification.

1. Digitization of the study area (10 km radius from the proposed site) from the topo maps
2. In the present study the IRS –P6 satellite image and SOI topo sheets of 47-F/01,02,03 have been procured and interpreted using the ERDAS imaging and ARC-GIS software adopting the necessary interpretation techniques.
3. Satellite data interpretation and vectorization of the resulting units
4. Adopting the available guidelines from manual of LULC mapping using Satellite imagery (NRSA, 1989)
5. Field checking and ground truth validation

6. Composition of final LULC map

The LULC Classification has been done at three levels where level -1 being the broad classification about the land covers that is Built-up land, agriculture land, waste land, wet lands, and water bodies. These are followed by level –II where built-up land is divided into towns/cities as well villages. The Agriculture land is divided into different classes such as cropland, Fallow, Plantation, while wastelands are broadly divided into, Land with scrub and without Scrub and Mining and Industrial wasteland. The wetlands are classified into inland wetlands, coastal wetlands and islands. The water bodies are classified further into River/stream, Canal, Tanks and bay. In the present study level II classification has been undertaken. The SOI Topo map is presented in Annexure and Satellite imagery of 10 km radius from the project site is presented Annexure

3.2.6 Field Verification

Field verification involved collection, verification and record of the different surface features that create specific spectral signatures / image expressions on FCC. In the study area, doubtful areas identified in course of interpretation of imagery is systematically listed and transferred on to the corresponding SOI topographical maps for ground verification. In addition to these, traverse routes were planned with reference to SOI topographical maps to verify interpreted LU/LC classes in such a manner that all the different classes are covered by at least 5 sampling areas, evenly distributed in the area. Ground truth details involving LU/LC classes and other ancillary information about crop growth stage, exposed soils, landform, nature and type of land degradation are recorded and the different land use classes are taken the Land use map is presented in Annexure

3.2.7 Description of the Land Use / land cover classes

3.2.7.1 Built-up land

It is defined as an area of human settlements composed of houses, commercial complex, transport, communication lines, utilities, services, places of worships, recreational areas, industries etc. Depending upon the nature and type of utilities and size of habitations, residential areas can be aggregated into villages, towns and cities. All the man-made construction covering land belongs to this category. The built- up in 10 km radius from the proposed project site is as follows.

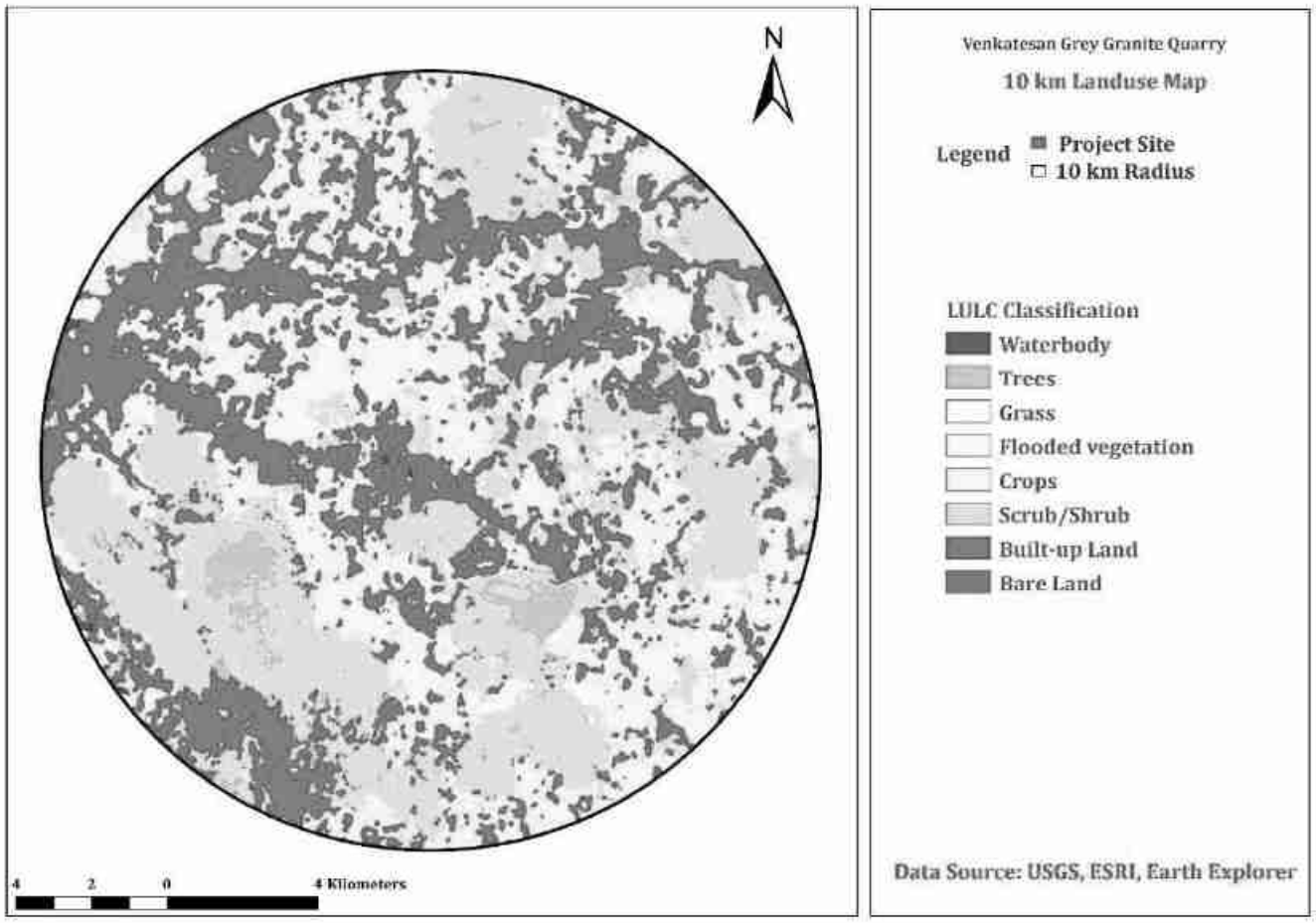


Figure 3-3 Land use classes around 10 km radius from the project site

3.2.7.2 Different Land use classes around 10 km radius from the project site

Table 3-3 Land use pattern in Krishnagiri District

Sl.No	Categories	Area in Hectares
1	Water Body	0.42
2	Trees	8.99
3	Grass	0.01
4	Flooded Vegetation	0.01
5	Crops	119.43
6	Scrub/Shrub	93.74
7	Built-up Area	102.97

8	Barren Land	0.06

3.3 Water Environment

3.3.1 Contour & Drainage

The project site is 489 m AMSL. The drainage pattern within in the 10 km of the project site is dendritic.

3.3.2 Geomorphology

The geological formations of the district belong mainly to Archaean age along with rock of Proterozoic age. The former is rerpresented by Khondalite Group of rocks, Charnockite Group of rocks, Migmatites Complex, Sathyamangalam Group of rocks, while the latter is represented by Alkaline rocks. The Khondalite Group includes garnet sillimanite gneiss and quartzite which occur as small patches. The migmatite complex includes garnetiferous quartzofeldspathic gneiss and hornblends biotite gneiss, the former exposed on the western part of the district. The Sathyamangalam Group includes fuchsite quartzite, sillimanite mica schist and amphibolites. The Bhavani Group in this area includes fissile hornblende-biotite gneiss, granitoid gneiss and pink migmatite. Amphibolites with barbed ferruginous quartzite and associated quartzo- feldspathic rocks (Champion Gneiss) represent the Kolar group and are found west and southwest of Veppanapalli. Following this there are basic intrusions occurring as dykes.

The Charnockite Group occupies a major part of the south-westportion of this district with small bands of Garnetiferous quartzo-feldspathic gneiss, Granite gneiss and dolerite dykes. The North-East and Northern part of the District mainly consist of granite gneiss with small patches of Pink Migmatite, hornblende-biotite gneiss and dolerite dykes. The Eastern part of the district consists of Epidote-Hornblende Gneiss, Ultra Mafics, Syenite and Carbonatite.

The Alkaline Complex is represented by epidote-hornblende gneiss, ultramafics, syenite and carbonatite and these are distributed in the eastern part of the district. Innumerable basic dykes and felsites, quartz, barites and pegmatite veins form part of the Alkali Complex.

The geomorphologic study is done within 10 km from the project site. The major formations are

- Denudational Origin- Pediment Pediplain Complex: The groundwater condition in pediments generally varies depending upon the type of underlying folded structures, fracture systems and degree of weathering. Groundwater prospecting in pediments is considered as normal to poor.

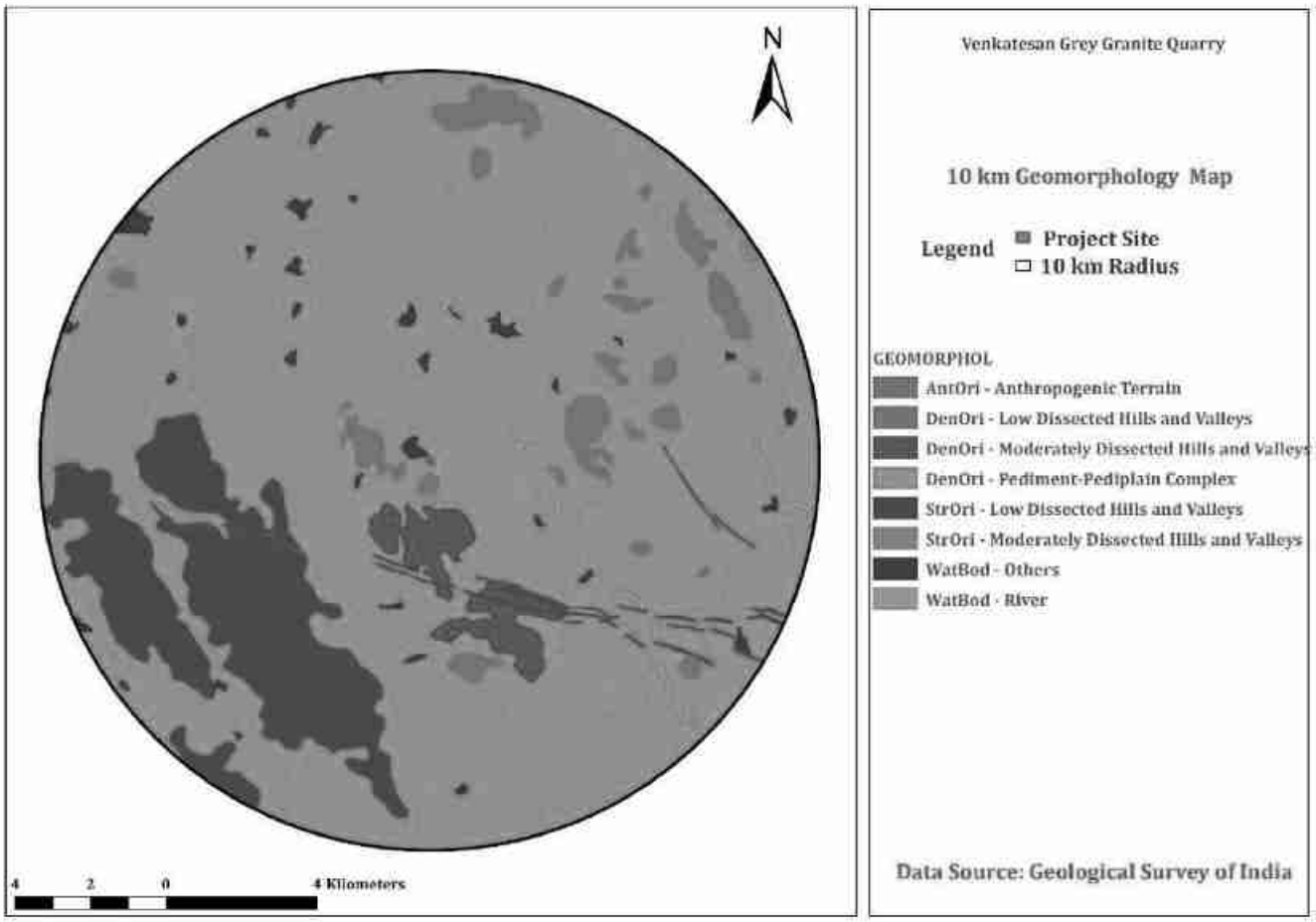


Figure 3-4 Geomorphology within 10km from the project site

3.3.3 Geology:

The area of mining lease comprised of Migmatite, a type of Grey Granite. Its mineral constituents are biotite, Quartz, orthoclase feldspar, and plagioclase feldspar. The biotite is fine grained and other minerals are medium grained. The graphic texture and intergrowth of quartz and feldspar indicates that younger intrusive were invaded into the pre-existing country rock, which preferably would have been biotite gneisses (Peninsular Gneisses), Flowage structure and texture of rock indicates deep seated metamorphism at high temperature and pressure. Xenolith of schistose rock is also found in the adjacent

Peninsular Gneisses which indicates assimilation of older rocks by the younger intrusive. Therefore, it is clear from the regional flow structure and texture of Xenolith, the rock would be a type of Migmatite. Since the fine-grained biotite is rich in assemblages shows a Grey shade to the Granite. The pinkish colour of the rock is due to rich fresh orthoclase feldspar. Dimensional cutting and polishing of these types of hard and compact rocks exhibits an attractive pinkish and Grey shades of background with attractive wave patterns. It is a part of peninsular gneisses migmatised by younger intrusive. It is commercially called as Paradiso by the buyers in view of its wave pattern of accessory minerals.

The rock is hard, compact and sheet in nature so as to cut required sizes of blocks.

The mineral constituents of the rock mass shall be about Orthoclase feldspar 40%, quartz roughly 25%, Plagioclase feldspar 25%, mica 15% and others 5%.

3.3.4 Hydrogeology

Krishnagiri district is underlained by Archaean crystalline formations with Recent alluvial deposits of limited areal extent and thickness along the courses of major rivers. The occurrence and movement of ground water are controlled by various factors such as physiography, climate, geology and structural features. Weathered, and fractured crystalline rocks constitute the important aquifer systems in the district. Ground water generally occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fractured zones at deeper levels. The thickness of weathered zones in the district ranges from less than a meter to more than 15m. The yield of large diameter dug wells in the district, tapping the weathered mantle of crystalline rocks ranges from 100 to 500 lpm. These wells normally sustain pumping for 2 to 6 hours per day, depending upon the local topography and characteristics of the weathered mantle. The depth to water level (DTW) during pre monsoon (May 2006) ranged between 0.5 and 9.9 m bgl in the district. In major part of the district the DTW is more than 5 5 mbgl. Whereas it ranged between 2 and 9.9 m bgl during post monsoon, in the district and the DTW is in the range of 5 – 10 m bgl in the entire district except a few isolated pockets. The yield of successful exploratory wells drilled in the district ranged from 0.78 lps to 26 lps. As per the studies the wells drilled in granitic gneiss have higher yields than the wells drilled in charnockites. The specific capacity of the wells ranged from 1.2 to 118.0 lpm/m/dd. The piezometric head of fracture zones varied between 0.50 and 18.45 m bgl.

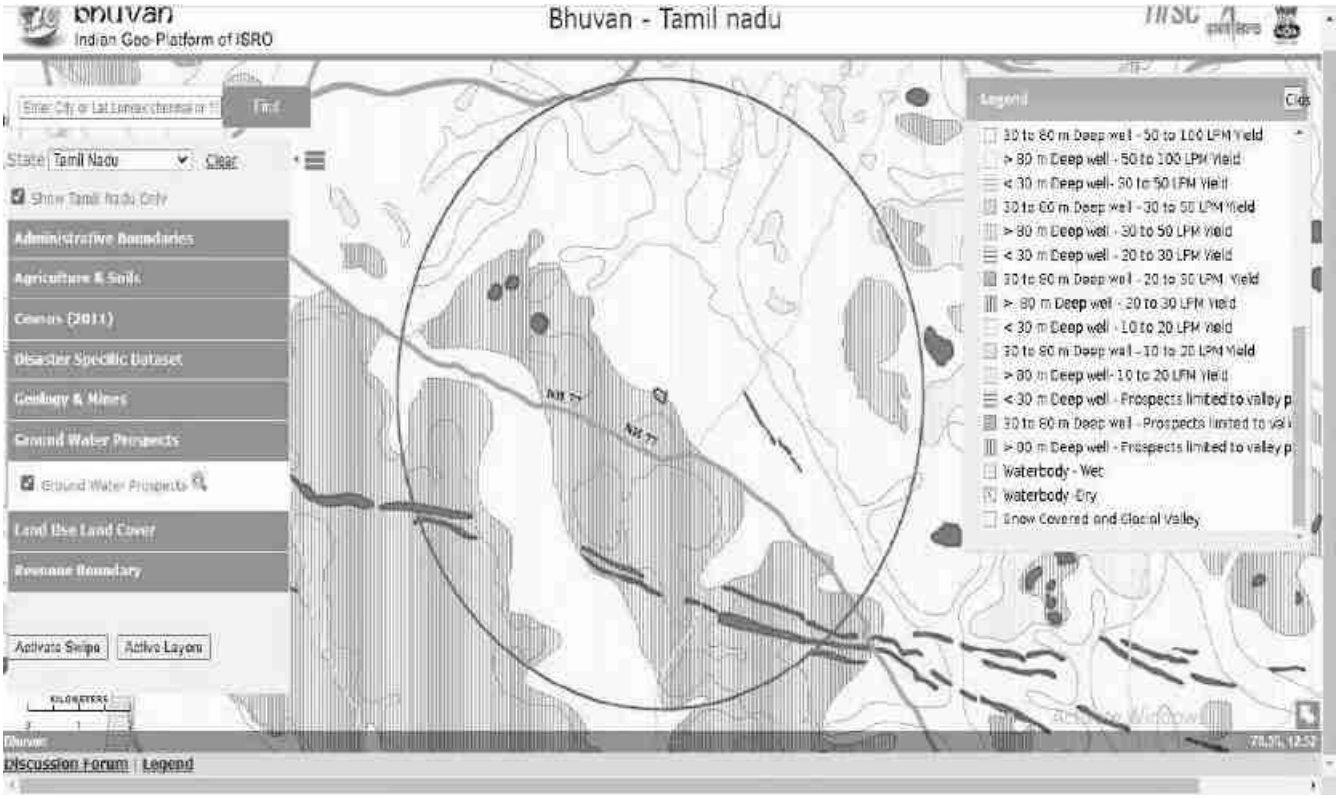


Figure 3-5 Ground water prospects within 5 km radius of the project site

3.3.5 Ground water quality monitoring

Ground water quality monitoring is done in the following locations and analysis will be done for physical, chemical & Biological parameters.

Table 3-4 Ground water Quality Analysis

Environmental Parameters: Ground water Quality Analysis	
Monitoring Period	March to June 2022
Design Criteria	Based on the Environmental settings in the study area
Monitoring Locations	Project Site – GW Jagadevi Village – GW 2 Magithgollahalli Village – GW 3 AES Higher Secondary School- GW 4 CSI St John's Church, Mittapalli– GW5
Methodology	Water Samples were collected in 5 Litre fresh cans as per IS 3025 Part I and transported to the laboratory in Iceboxes

Frequency of Monitoring	Once in a season

3.3.5.1 Sampling Procedure

Quality of ground water was compared with IS: 10500: 1991 (Reaffirmed 1993 With Amendment NO -3 July 2010) for drinking purposes. Water samples were collected as Grab sample from five sampling locations in a 5-liter plastic jerry can and 250 ml sterilized clean glass/pet bottle for complete physico-chemical and bacteriological tests respectively. The samples were analyzed as per standard procedure / method given in IS: 3025 (Revised Part) and standard method for examination of water and wastewater Ed. 21st, published jointly by APHA.

Table 3-5: Standard Procedure

S. No	Parameters	Test Method
1	pH (at 25°C)	IS:3025(P -11)1983 RA: 2012
2	Electrical Conductivity	IS:3025(P -14) 2013
3	Colour	IS:3025 (P -4)1983 RA: 2012
4	Turbidity	IS:3025(P -10)1984 RA: 2012
5	Total Dissolved Solids	APHA 22nd Edn.2012-2540-C
6	Total Suspended Solids	IS:3025(P-17)-1984 RA:2012
7	Total Hardness as $CaCO_3$	APHA 22nd Edn.2012-2340-C
8	Calcium as Ca	APHA 22nd Edn2012.3500 Ca-B
9	Magnesium as Mg	APHA 22nd Edn.2012-3500 Mg-B
10	Chloride as Cl	IS:3025(P -32)-1988 RA: 2014
11	Sulphate as SO_4	APHA 22nd Edn.2012-4500 SO_4^--E
12	Total Alkalinity as $CaCO_3$	APHA 22nd Edn.2012-2320-B
13	Iron as Fe	IS:3025(P -53):2003 RA: 2014
14	Silica as SiO_2	IS:3025(P -35)1988 RA: 2014
15	Fluoride as F	APHA 22nd Edn.2012-4500-F-D
16	Nitrate as NO_3	IS:3025(P -34):1988 RA: 2014
17	Sodium as Na	IS:3025(P -45):1993 RA: 2014
18	Potassium as K	IS:3025(P -45):1993 RA: 2014
19	Coliform	IS:1622:1981:RA:2014
20	E.coli	IS:1622:1981:RA:2014

Table 3-6 Ground water sampling results

S. No	Parameters	Units	Project Site	Jagadevi Village GW 2	Magithgollahalli Village GW 3	AES Higher Secondary School GW 4	CSI St John's Church, Mittapalli GW 5
1	pH (at 25°C)	-	8.05	7.97	7.47	7.21	8.01
2	Electrical Conductivity	µS/cm	707	798	1302	1090	1105
3	Colour	Hazen Unit	1	3	3	1	1
4	Turbidity	NTU	BQL(LOQ:1.0)	1.6	2.1	BQL(LOQ:1.0)	BQL(LOQ:1.0)
5	Total Dissolved Solids	mg/L	431	415	794	665	674
6	Total Suspended Solids	mg/L	BQL(LOQ:2.0)	2.3	BQL(LOQ:2.0)	BQL(LOQ:2.0)	BQL(LOQ:2.0)
7	Total Hardness as $CaCO_3$	mg/L	176.2	213.8	526.7	445.5	514.8
8	Calcium Hardness as $CaCO_3$	mg/L	87.12	134.64	281.16	297	259.38
9	Magnesium Hardness as $CaCO_3$	mg/L	89.1	79.2	245.52	148.5	255.42
10	Calcium as Ca	mg/L	34.9	54.0	112.7	119.0	104.0
11	Magnesium as Mg	mg/L	21.7	19.3	59.7	36.1	62.1
12	Chloride as Cl	mg/L	48.9	93.9	137.0	102.0	126.0
13	Sulphate as SO_4	mg/L	94.3	30.7	65.5	70.8	98.0
14	Total Alkalinity as $CaCO_3$	mg/L	216	160	457	255	307
15	Iron as Fe	mg/L	BQL(LOQ:0.1)	0.186	0.674	BQL(LOQ:0.1)	BQL(LOQ:0.1)
16	Silica as SiO_2	mg/L	23.9	7.4	25	54.5	43.2
17	Fluoride as F	mg/L	BQL(LOQ:0.2)	0.215	0.341	0.296	BQL(LOQ:0.2)
18	Nitrate as NO_3	mg/L	20.41	21.542	18.451	19.241	19.524
19	Potassium as K	mg/L	5.7	7.2	19.1	7.9	15.6

20	Sodium as Na	mg/L	44.9	86.1	107	92.3	104

3.3.6 Interpretation of results:

3.3.6.1 Physical parameters of water:

The basic physical parameters of water include

Colour:

Value observed in Project Site (True/Apparent Color): 1 Hazel unit.

Acceptable and permissible limits: 5 Hazel units and 15 Hazel units respectively. The value in the project site is as same as the acceptable limits prescribed by IS 10500:2012 (referred as "*Standards*" from herein).

Odour & Taste:

The water is odourless. The taste of the water is slightly salty which is due to the presence of hardness in water, which is attributed to the presence of calcium and magnesium in the water. As per the standards, the odour and taste should be agreeable.

pH:

Value observed in the Project Site: 8.05

Acceptable and permissible limits: 6.5-8.5. The pH value is the measure of acid – base equilibrium. The value of pH in the project site clearly indicates that water is slightly alkaline in nature.

Turbidity:

Value observed in the Project Site: BQL (LOQ:1.0)

Acceptable and permissible limits: 1 NTU & 5 NTU respectively. The value of turbidity generally indicates the presence of phytoplanktons and other sediments. The value in the project site indicates the water is less turbid and no any physical treatment is required to treat the turbidity of the water.

Total Dissolved Solids:

Value observed in the Project Site: 431 mg/L.

Acceptable and permissible limits: 500 mg/L and 2000 mg/L respectively.

The TDS is the presence of the inorganic salts and small amounts of organic matter present in the water. This is mainly due to the result of surface runoff as the cations and anions in the top soil is carried away by the water. The value in the project site indicates the water is less turbid.

3.3.6.2 Chemical parameters of water:

The chemical parameters of the drinking water include,

Calcium:

Value observed in the Project Site: 87.12 mg/L.

Acceptable and permissible limits: 75mg/L and 200 mg/L respectively.

Calcium is the essential macronutrient. The value of the calcium is within the prescribed permissible standards. The higher level of calcium may cause hardening in domestic equipment and will also reduce the detergent efficiency. Higher levels of calcium will lead to constipation, gas, and bloating. Apart from that, extra calcium may also increase the risk of kidney stones. If the calcium deposit in blood is high, it may lead to hypercalcemia.

Magnesium:

Value observed in the Project Site: 89.1 mg/L.

Acceptable and permissible limits: 30 mg/L and 100 mg/L respectively.

The value of Magnesium in the project site is higher than acceptable limit and within the permissible limit. The increase in the level of magnesium will cause diarrhea and vomiting in children.

Chloride

Value observed in the project site: 48.9mg/L.

Acceptable and permissible limits: 250 mg/L and 1000 mg/L respectively.

The chloride level in the project site is within the acceptable and permissible limit. If the level of chloride is more, it may cause galvanic and pitting corrosion, increases level of metals. It imparts bitter taste to the water.

Total Alkalinity as $CaCO_3$:

Value observed in the project site: 216 mg/L.

Acceptable and permissible limits: 200 mg/L and 600 mg/L respectively.

Total Alkalinity is the measure of the concentration of all alkaline substances dissolved in the water which includes carbonates, bicarbonates and hydroxides. The value of the total alkalinity is slightly greater in the project site, which will impart soda taste to the water.

Hardness:

Value observed in the Project Site: 176.2 mg/L.

Acceptable and permissible limits: 200 mg/L and 600 mg/L respectively.

The value of Hardness in the project site is lesser than the acceptable limit and permissible limit. The increase in the level of hardness may cause corrosion and scaling problems, increased soap consumption and it also contributes to the salty taste of water.

3.3.7 Surface Water Analysis

Surface water samples were taken from Project site nearby lake, 80m NW and Marudepalli lake, 4.37 km, NW. The results are summarized below.

Table 3-7 Surface Water Sample Results

S. No.	Parameters	Units	Marudepalli lake, 4.37 km, NW	Project site lake, 80m NW
1	pH (at 25°C)	-	8.28	10.5
2	Electrical Conductivity	µS/cm	575	481
3	Colour	Hazen Unit	5	3
4	Turbidity	NTU	5.3	BQL(LOQ:1.0)
5	Total Dissolved Solids	mg/L	351	298
6	Total Suspended Solids	mg/L	BQL(LOQ:2.0)	BQL(LOQ:2.0)
7	Total Hardness as $CaCO_3$	mg/L	142.6	75.2
8	Calcium Hardness as $CaCO_3$	mg/L	79.2	9.9
9	Magnesium Hardness as $CaCO_3$	mg/L	63.36	65.34
10	Calcium as Ca	mg/L	31.7	4.0
11	Magnesium as Mg	mg/L	15.4	15.9
12	Chloride as Cl	mg/L	50.9	60.7
13	Sulphate as SO_4	mg/L	32.4	40.6
14	Total Alkalinity as $CaCO_3$	mg/L	174	115
15	Iron as Fe	mg/L	0.672	BQL(LOQ:0.1)
16	Silica as SiO_2	mg/L	68.9	13.3

17	Fluoride as F	mg/L	1.248	0.98
18	Nitrate as NO_3	mg/L	18.45	17.9
19	Potassium as K	mg/L	3.7	9.6
20	Sodium as Na	mg/L	45.4	48.7

Inference: The surface water quality is compared with the CPCB Water Quality Criteria against A, B, C, D & E class of water. From the test result, it is found that the both the water does not fit Class A (Drinking Water Source without conventional treatment but after disinfection). But they can be used for outdoor bathing as it meets the requirements shown for class B water.

3.3.8 Climatology & Meteorology:

Climate and meteorology of a place can play an important role in the implementation of any developmental project. Meteorology is also the key to understand local air quality as there is an essential relationship between meteorology and atmospheric dispersion involving wind in the broadest sense of the term.

The year may broadly be divided into four seasons:

Winter season : December to February

Pre-monsoon season : March to May

Monsoon season : June to September

Post-monsoon season : October to November

i) Climate

High temperature throughout the year. Generally a dry and hot climate prevails in the District. The district receives the rainfall under the influence of northeast monsoon. The heaviest rainfall in the district used to be received in the year of 2017 was 1145.9 mm.

ii) Temperature

The average daily temperature ranges from a maximum of 40 °C to a minimum of 26.3 °C

iii) Rainfall:

The total rainfall received during 2017 is 1130mm against the Normal rainfall of 842mm with average of 59 rainy days.

KRISHNAGIRI DISTRICT -NORMAL AND ACTUAL RAINFALL (2013 TO 2017)

Unit in mm.

Acutal Rainfall In Mm					Normal Rainfall In Mm
2013	2014	2015	2016	2017	
766.0	757.6	1049.7	590.6	1145.9	850.58

Source: TWAD Board

Metrological Data

The meteorological data – Temperature, rainfall, Wind Speed, Wind direction are recorded through AWS by setting it up in the site.

vi) Wind Rose Diagram

The wind rose denotes a class of diagrams designed to display the distribution of wind direction at a given location over a period of time. Wind roses are also useful as they project a large quantity of data in a simple graphical plot.

The wind speed & wind direction data are taken and wind rose is plotted for March to June 2022.

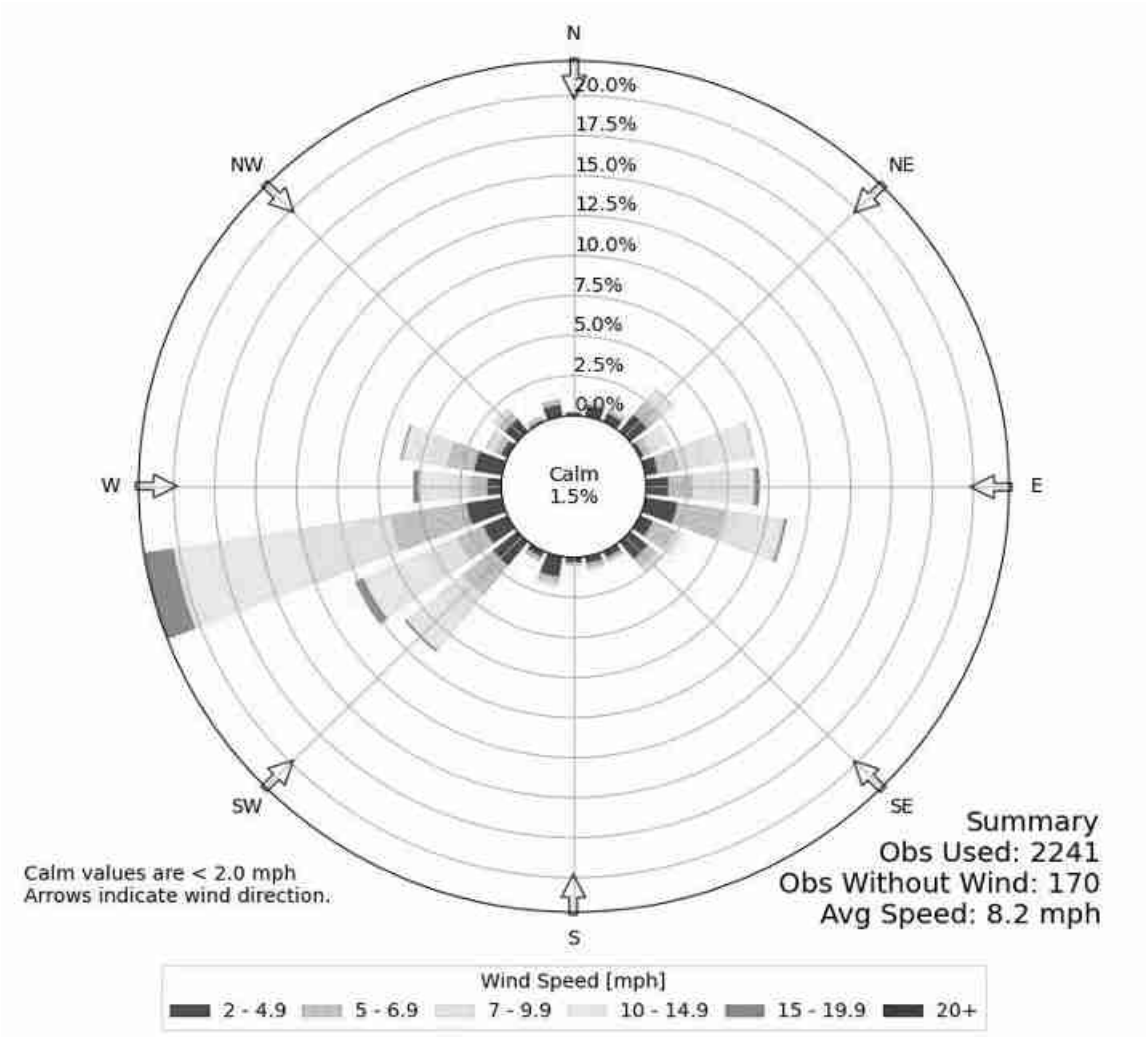


Figure 3-6 Wind rose

3.3.9 Selection of Sampling Locations:

Four Monitoring locations along with the project site is selected based on Wind Direction & Wind Speed. All the monitoring locations are chosen in the downwind direction.

3.4 Ambient Air Quality

Table 3-8: Selection of Sampling Location

Environmental Parameters*: Ambient Air*	
Monitoring Period	March to June 2022

Design Criteria	The monitoring stations are selected based on factors like topography/terrain, prevailing meteorological conditions like predominant wind direction (March to June 2022), etc, play a vital role in the selection of air sampling stations. Based on these criteria, 5 air sampling station were selected in the area as shown below.
Monitoring Locations	
Methodology	Respirable Particulate Matter (PM10) - Gravimetric (IS 5182: Part 23:2006) Particulate Matter PM2.5 - Gravimetric (Fine particulate matter) Sulphur Dioxide - Calorimetric (West & Gaeke Method) (IS 5182: Part 02: 2001) Nitrogen Dioxide - Calorimetric (Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2006)
Frequency of Monitorin	2 days in a week, 4 weeks in a month for 3 months in a season.

Location & Code	Distance (km)	Direction
Project Site - AAQ 1	-	-
Jagadevi Village – AAQ 2	1.13	E
Magithgollahalli Village – AAQ 3	4.40	S
AES Higher Secondary School – AAQ 4	4.14	W
CSI St John's Church, Mittapalli – AAQ 5	4.10	S

3.4.1 Ambient Air Quality: Results & Discussion

The test results of the ambient air quality monitored in project site and other four locations is summarized below.

Table 3-9 Ambient Air Quality

Code	Location	PM 10 (µg/m³)				PM 2.5 (µg/m³)				SO2 (µg/m³)				NOx (µg/m³)			
		Min	Max	Avg	98 percentile	Min	Max	Avg	98 percentile	Min	Max	Avg	98 percentile	Min	Max	Avg	98 percentile
AAQ 1	Project Site	33	44	38.2	43.5	14	21	17.2	20.5	5	9	6.7	8.5	11	20	15.3	20
AAQ 2	Jagadevi Village, 1.13km, E	40	51	45.3	50.5	18	24	20.7	23.5	5	11	7.4	10.1	11	24	16.8	23.2
AAQ 3	Magithgollahalli Village, 4.10 km, N	48	57	52.2	56.3	19	27	23.1	26.5	5	10	6.7	9.5	10	22	14.8	21
AAQ 4	AES Higher Secondary School, 4.14 km, W	42	54	48.3	53.1	18	24	21.4	24	5	9	6.8	9	12	20	15.5	19.4
AAQ 5	CSI St John's Church, Mittapalli, 4.10 km, N	45	57	51.3	56.7	19	26	22.7	25.9	5	10	7	9.5	11	22	15.7	21.5
NAAQ Standards - Residential Area		100 (µg/m³)				60(µg/m³)				80 (µg/m³)				80 (µg/m³)			

3.4.2 Interpretation of ambient air quality:

To assess the impact, AAQ were monitored in project site and four locations.

Observation:

The Maximum value of PM10 (57(µg/m3), PM 2.5(27 (µg/m3), SOx 11 (µg/m3) ,NOx (24(µg/m3) is observed in different places.

Inference:

The monitoring results for PM10, PM2.5, NOx was found to be high in Magithgollahalli Village which densely populated small rural area where there is no commercial development like industry, college, etc. The only contributing factor to the higher values is due to the vehicular movement. In the absence of vehicular movement, the values of PM10, PM2.5, NOx was found to be less.

The observed values are all well within the Standards prescribed by NAAQ.

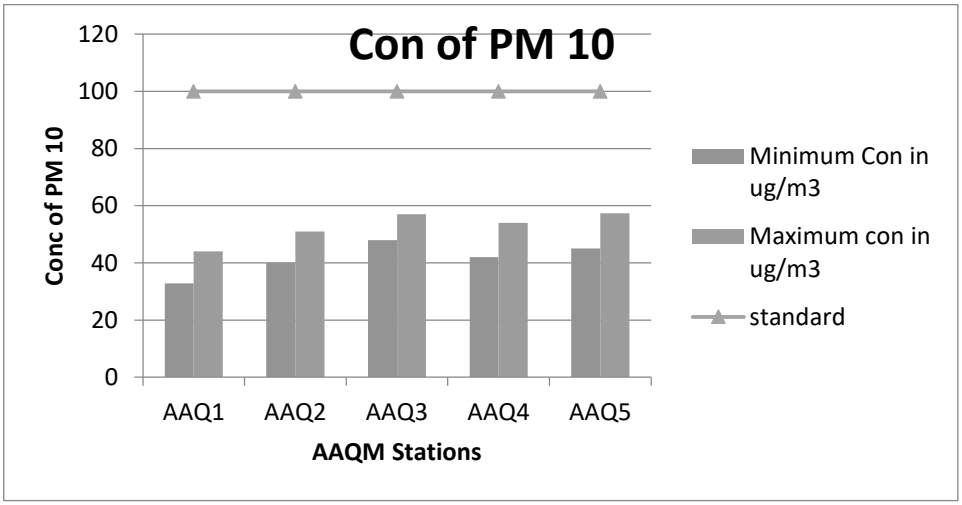


Figure 3-7 Concentration of PM10 (µg/m^3) in Study Area

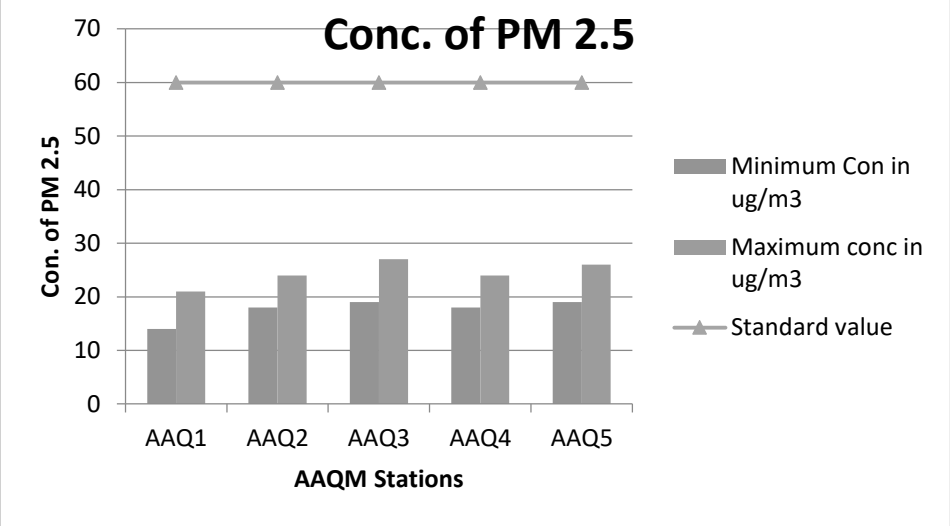


Figure 3-8 Concentration of PM2.5 (µg/m^3) in Study Area

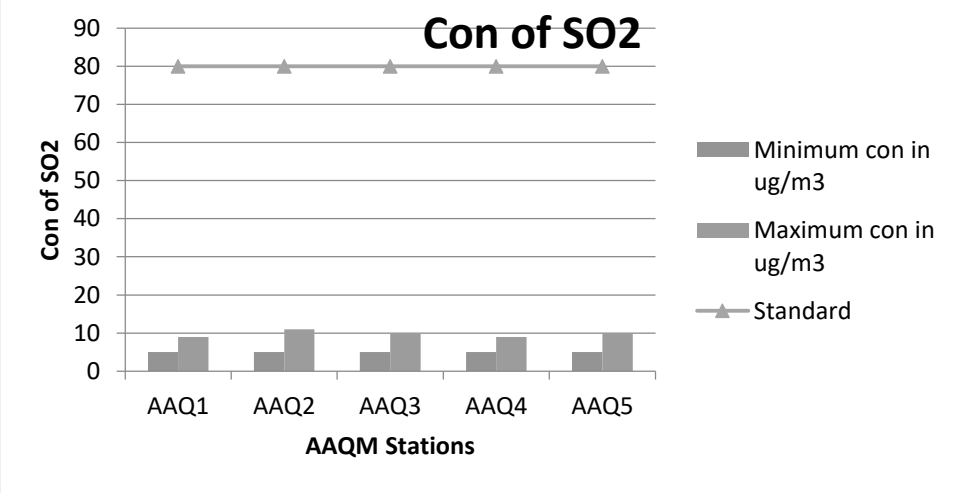


Figure 3-9 Concentration of SOx (µg/m^3) in Study Area

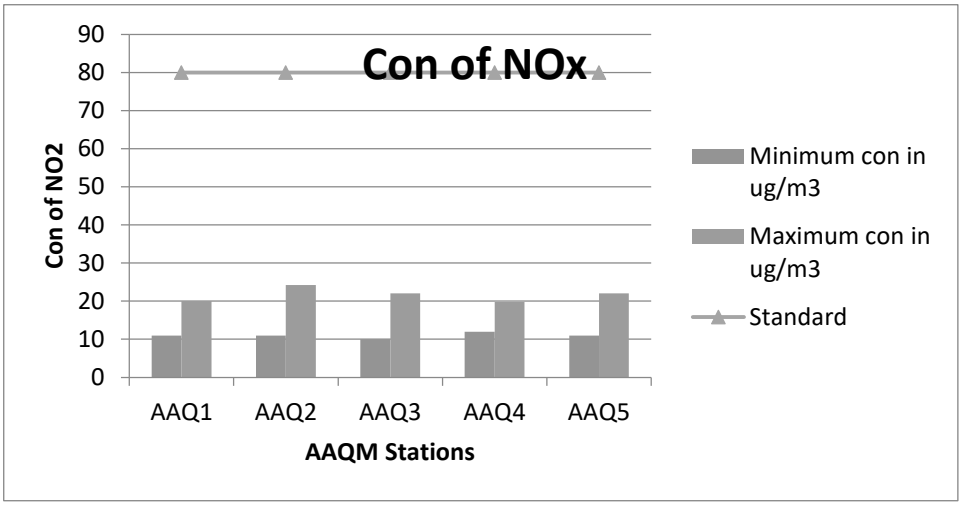


Figure 3-40 Concentration of NOx (µg/m3) in Study Area

3.5 Noise Environment:

Table 3-10 Noise Analysis

Environmental Parameters*: Noise Analysis*	
Monitoring Period	March to June 2022
Design Criteria	Based on the Sensitivity of the area
Monitoring Locations	Project Site – N1 Jagadevi Village – N2 Magithgollahalli Village – N3 AES Higher Secondary School – N4 CSI St John's Church, Mittapalli – N5
Methodology	Noise level measurements were taken at the selected locations using noise level meter both during day and night time. Noise level measurements were taken continuously for 24 hours at hourly intervals
Frequency of Monitoring	Noise samples were collected from 5 locations - Once season

Ambient Noise Levels are monitored in the chosen 5 Locations including the project Site and the monitoring results are summarized below

3.5.1 Day Noise Level (Leq day)

Table 3-11 Day Noise Level (Leq day)

Location	Leq day in dB(A)		
	Max	Min	Average
Project site	53	41	47
Jagadevi Village	55	45	50
Magithgollahalli Village	56	43	51
AES Higher Secondary School	60	44	53
CSI St John's Church, Mittapalli	57	43	52

3.5.2 Night Noise Level (Leq Night)

Table 3-12 Night Noise Level (Leq Night)

Location	Leq Night in dB(A)		
	Max	Min	Average
Project Site	42	33	37
Jagadevi Village	44	37	40
Magithgollahalli Village	44	37	40
AES Higher Secondary School	44	37	41
CSI St John's Church, Mittapalli	44	36	40

Observation:

The maximum Day noise and Night noise were found to be 60 dB(A) and 44 dB(A) respectively in AES Higher Secondary School . The minimum Day Noise and Night noise were 41 dB(A) and 33 dB(A) respectively which was observed in Project Site.

The observed values are all well within the Standards prescribed by CPCB.

3.6 Soil Environment

Soil environment is studied for 10 km radius from the project site. The 10 km radius image shows that the soil is not affected by any kind of erosion.

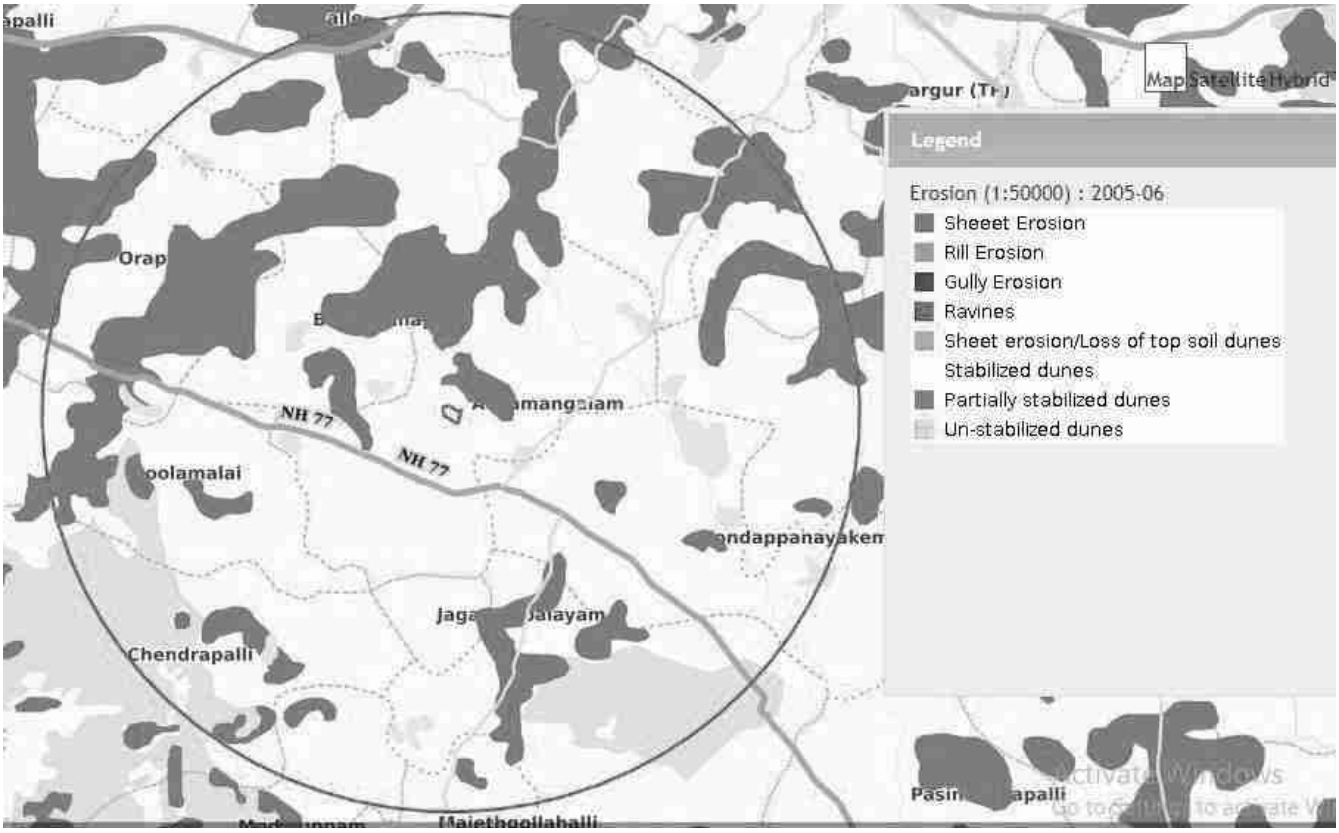


Figure 3-11 Soil Erosion pattern within 5 km radius of the project site

3.6.1 Baseline Data:

The present study of the soil quality establishes the baseline characteristics which will help in future in identifying the incremental concentrations if any, due to the operation Phase of the proposed project. The sampling locations have been identified with the following objectives:

- To determine the impact of proposed project on soil characteristics and

- To determine the impact on soils more importantly from agricultural productivity point of view.

Table 3-13 Soil Quality Analysis

Environmental Parameters*: Soil Quality Analysis*	
Monitoring Period	March to June 2022
Design Criteria	Based on the environmental settings of the study area
Monitoring Locations	Project Site – SQ 1, Jagadevi Village – SQ 2, Magithgollahalli Village – SQ 3, AES Higher Secondary School – SQ 4 CSI St John's Church, Mittapalli – SQ 5
Methodology	Composite soil samples using sampling augers and field capacity apparatus
Frequency of Monitoring	Soil samples were collected from 5 locations Once in a season

To assess the soil quality of the study area, 5 monitoring stations were selected and the results are summarized below.

Table 3-14 Soil Quality Analysis Results

Parameters	Unit	Project Site SQ 1	Jagadevi Village SQ 2	Magithgollahalli Village SQ 3	AES Higher Secondary School SQ 4	CSI St John's Church, Mittapalli SQ 5
pH (at 25°C)	-	8.25	7.25	8.50	8.15	7.90
Specific Electrical Conductivity	mS/cm	0.17	0.12	0.16	0.17	4.64
Water Holding Capacity	ml/l	7.80	8.60	9.97	9.50	8.80

Bulk Density	mg/kg	1.22	1.22	1.22	1.41	1.18
Calcium as Ca	g/cm3	35	37	19	26	122
Sodium as Na	mg/kg	186	144	134	156	115
Potassium as K	mg/kg	31.2	18.0	20.2	19.5	17.6
Organic matter	%	3.9	0.2	0.3	0.4	2.5
Magnesium as Mg	mg/kg	41	48	29	47	147
Total Nitrogen	%	10.6	0.5	0.9	1.0	6.8
Available Phosphorous	mg/kg	175	167	186	199	156
Sand	%	52	43	23	56	41
Clay	%	7	5	7	4	8
Silt	%	41	52	70	39	51
Cation exchange capacity	meg/100g	12.4	12.5	13.8	14.2	13.5
SAR	meg/kg	186	1.3	4.6	1.4	2.3
Silicon	%	0.714	0.74	0.85	0.81	0.89
Chloride	Meq/kg	99	102	57	78	110
Total Soluble Sulphates	mg/kg	53	21	41	49	354

3.6.1.1 Physical Properties:

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 in the study area ranged between 1.18 to 1.41 g/cc which indicates favorable physical condition for plant growth. The water holding capacity was found in the range of 7.80 ml/l to 9.97 ml/l.

3.6.1.2 Chemical Properties:

Chemical characteristics of soils include pH, exchangeable cations and fertility status in the form of NPK values and organic matter. The value of the pH ranges from 7.25 to 8.50, which it indicates majority of pH of the soil is slightly alkaline. The soil in the project site is sodic in nature, which challenges because they tend to have very poor structure which limits or prevents water infiltration and drainage. The organic matter varies from 0.2 to 3.9 mg/kg, which indicates the soil is slightly unfertile.

3.7 Ecology and Biodiversity

Ecology and Biodiversity is studied for 10 km radius around the project site. Project site and 2 km around the project site is considered as core zone and from 2 km to 10 km radius, it is considered as buffer zone.

- Primary field survey is carried out for the assessment of flora and fauna in the core zone
- Secondary data from Journals/Literature were studied and compiled to understand the species present in the buffer zone

3.7.1 Methods available for floral analysis:

3.7.1.1 Plot Sampling Methods

- Quadrat – 2D shape (e.g. square or rectangle, or other shape) used as a sampling unit
- Transect
    - Line transects feature only a length dimension, usually defined by a tape stretched across the area to be sampled.
    - Belt transects have a width as well as length.
    - Pace-transects are established when the observer strides along an imaginary line across the sample site and uses their foot placement to determine specific sampling points.

3.7.1.2 Plot less Sampling Methods

- Closest individual method - Distance is measured from each random point to the nearest individual.
- Nearest neighbour method - Distance is measured from an individual to its nearest neighbour.

- Random pairs method - Distance is measured from one individual to another on the opposite side of the sample point.
- Point-centered quarter (PCQ) method - Distance is measured from the sampling point to the nearest individual in each quadrat.

3.7.2 Field study& Methodology adopted:

To assess the suitability of the methodology, random field survey was done. Field survey was conducted around 2 km radius from the project site and five locations were chosen based on the species density. Quadrat method is chosen for the proposed study as compared to other sampling methods, because they are relatively simple to use. Quadrat plots are uniform in size and shape and distributed randomly throughout the sample area, which makes the study design straightforward. They are also one of the most affordable techniques because they require very few materials.

3.7.3 Study outcome:

Phyto-sociological parameters, such as ***Density, Frequency, Basal Area, Abundance and Importance Value Index*** of individual species (Trees) were determined in randomly placed quadrate of different sizes in the study area. Relative frequency, relative basal area and relative density were calculated and the sum of these three represented Importance Value Index (IVI) for various species. For shrubs, herbs and grasses, ***Density, Frequency, Relative Density & Relative Frequency were found***.

Sample plots were selected in such a way to get maximum representation of different types of vegetation and plots were laid out in different part of the study area of 2 km radius. Analysis of the vegetation will help in determining the relative importance of each species in the study area and to reveal if any economically valuable species is threatened in the process.

Table 3-15 Calculation of Density, Frequency (%), Dominance, Relative Density, Relative Frequency, Relative Dominance & Important Value Index

Parameters	Formula
Density	Total No. of individuals of species/ Total No. of Quadrats used in sampling
Frequency (%)	(Total No. of Quadrats in which species occur/ Total No. of Quadrats studied) * 100
Dominance	Total Basal Area /Total area sampled
Abundance	Total No. of individuals of species/ No. of Quadrats in which they occur

Relative Density	(Total No. of individuals of species/Sum of all individuals of all species) * 100
Relative Frequency	(Total No. of Quadrats in which species occur/ Total No. of Quadrats occupied by all species) * 100
Relative Dominance	Dominance of a given species/Total Dominance of all species
Important Value Index	Relative Density + Relative Frequency + Relative Dominance

Table 3-16 Tree Species in the core Zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Dominance	Relative Density	Relative Frequency	Relative Dominance	IVI	IUCN Conservation Status
1	Ficus Carica	Athi Maram	2	2	6	0.33	33.33	1	0.28	1.68	2.17	4.45	8.31	Least Concern
2	Cassia siamea	ManjalKonrai	3	2	6	0.50	33.33	1.5	0.07	2.52	2.17	1.11	5.81	Least Concern
3	Acacia nilotica	Karuvelai	4	4	6	0.67	66.67	1	0.28	3.36	4.35	4.45	12.16	Least Concern
4	Bambusa vulgaris	Moongil	4	4	6	0.67	66.67	1	0.50	3.36	4.35	7.92	15.63	Not assessed
5	Anacardium occidentale	Cashew	1	1	6	0.17	16.67	1	0.44	0.84	1.09	6.96	8.88	Not assessed
6	Alstonia scholaris	Elilaipalai	2	2	6	0.33	33.33	1	0.27	1.68	2.17	4.31	8.16	Least Concern
7	Psidium guajava	Guava	3	3	6	0.50	50.00	1	0.23	2.52	3.26	3.61	9.39	Not assessed
8	Aegle marmelos	Vilvam	1	1	6	0.17	16.67	1	0.16	0.84	1.09	2.50	4.43	Not assessed
9	Causuarina equisetifolia	Savukku	2	2	6	0.33	33.33	1	0.21	1.68	2.17	3.34	7.20	Not assessed
10	Albizia amara	Wunja	1	1	6	0.17	16.67	1	0.20	0.84	1.09	3.22	5.14	Not assessed
11	Cocos nucifera	Thennai	10	6	6	1.67	100.0	1.67	0.15	8.40	6.52	2.39	17.32	Not assessed
12	Artocarpus heterophyllus	Palaa	2	2	6	0.33	33.33	1	0.18	1.68	2.17	2.85	6.70	Not assessed
13	Bombax ceiba	Sittan	4	4	6	0.67	66.67	1	0.08	3.36	4.35	1.27	8.98	Not assessed
14	Azadirachta indica	Veppam	17	6	6	2.83	100.0	2.83	0.13	14.29	6.52	1.98	22.79	Not assessed
15	Delonix regia	Cemmayir-Konrai	1	1	6	0.17	16.67	1	0.21	0.84	1.09	3.34	5.27	Least Concern
16	Delonix elata	Perungondrai	1	1	6	0.17	16.67	1	0.17	0.84	1.09	2.62	4.54	Least Concern
17	Dalbergia sissoo	Shisham	1	1	6	0.17	16.67	1	0.15	0.84	1.09	2.29	4.21	Not assessed
18	Ficus benghalensis	Alai	2	2	6	0.33	33.33	1	0.08	1.68	2.17	1.19	5.04	Not assessed

19	Annona squamosa	Sitapalam	1	1	6	0.17	16.67	1	0.23	0.84	1.09	3.61	5.53	Not assessed
20	Pithecellobium dulce	Kodukapuli	1	1	6	0.17	16.67	1	0.14	0.84	1.09	2.18	4.11	Not assessed
21	Ficus religiosa	Arasa maram	3	3	6	0.50	50.00	1	0.09	2.52	3.26	1.35	7.13	Not assessed
22	Couroupita guianensis	Nagalingam	5	3	6	0.83	50.00	1.67	0.14	4.20	3.26	2.18	9.64	Not assessed
23	Musa paradise	Vaazhai	3	3	6	0.50	50.00	1	0.08	2.52	3.26	1.19	6.97	Not assessed
24	Prosopis juliflora	Vaelikaruvai	3	3	6	0.50	50.00	1	0.21	2.52	3.26	3.34	9.13	Not assessed
25	Mangifera indica	Mamaram	7	6	6	1.17	100.0	1.16	0.07	5.88	6.52	1.11	13.52	Data insufficient
26	Mimusops elengi	Magizham	2	2	6	0.33	33.33	1	0.18	1.68	2.17	2.85	6.70	Not assessed
27	Morinda pubescens	Nuna	6	6	6	1.00	100.0	1	0.24	5.04	6.52	3.74	15.31	Not assessed
28	Thespesia populnea	Poovarasam	3	3	6	0.50	50.00	1	0.15	2.52	3.26	2.39	8.18	Not assessed
29	Tectona grandis	Thekku	3	3	6	0.50	50.00	1	0.12	2.52	3.26	1.88	7.66	Not assessed
30	Tamarindus indica	Puli	10	6	6	1.67	100.0	1.66	0.20	8.40	6.52	3.09	18.02	Not assessed
31	Syzygium cumini	naval	5	1	6	0.83	16.67	5	0.11	4.20	1.09	1.79	7.07	Not assessed
32	Carica papaya	Papaya	3	3	6	0.50	50.00	1	0.09	2.52	3.26	1.43	7.21	Not assessed
33	Ziziphus mauritiana	Elandai	1	1	6	0.17	16.67	1	0.28	0.84	1.09	4.45	6.38	Not assessed
34	Citrus medica	Elumichai	2	2	6	0.33	33.33	1	0.23	1.68	2.17	3.61	7.46	Not assessed
		Total	119	92					6.35					

Table 3-17 Shrubs in the Core Zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Relative Density	Relative Frequency	IUCN Conservation Status
1	Jatropagossypifolia	Kaatamanaku	28	17	24	1.17	0.71	1.65	14.43	17.17	Not Assessed
2	Lantana trifolia	Shrub verbana	10	3	24	0.42	0.13	3.33	5.15	3.03	Not Assessed
3	Robiniapseudoacacia	Black locust	17	5	24	0.71	0.21	3.4	8.76	5.05	Least Concern
4	Lantana camara	Unnichedi	9	6	24	0.38	0.25	1.5	4.64	6.06	Not Assessed
5	Calotropis gigantea	Erukam	14	12	24	0.58	0.50	1.17	7.22	12.12	Not Assessed
6	Stachytarpheaurticifolia	Rat tail	15	9	24	0.63	0.38	1.67	7.73	9.09	Not Assessed
7	Datura metal	Ummattangani	5	4	24	0.21	0.17	1.25	2.58	4.04	Not Assessed
8	Hibiscus rosa sinensis	Sembaruthi	3	2	24	0.13	0.08	1.5	1.55	2.02	Not Assessed
9	Tabernaemontanadivaricata	Crepe Jasmine	3	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
10	Chloromolaena odorata	Venapacha	9	6	24	0.38	0.25	1.5	4.64	6.06	Least Concern
11	Euphorbia geniculata	Amman Pacharisi	3	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
12	Catharanthus roseus	Nithyakalyani	3	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
13	Woodfordiafruiticosa	Velakkai	3	3	24	0.13	0.13	1	1.55	3.03	Least Concern
14	Morindapubescens	Mannanunai	2	2	24	0.08	0.08	1	1.03	2.02	Not Assessed
15	Acalypha indica	Kuppaimeni	20	8	24	0.83	0.33	2.5	10.31	8.08	Not Assessed
16	Parthenium hysterophorous	Vishapoondu	50	13	24	2.08	0.54	3.85	25.77	13.13	Not Assessed

Table 3-18 Herbs & Grasses in the core zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Relative Density	Relative Frequency	IUCN Conservation status
1	Plumbago zeylanica	Chittiramoolam	3	3	30	0.10	0.10	1	1.19	3.23	Not assessed
2	Mimosa pudica	Thottacherungi	6	5	30	0.20	0.17	1.2	2.38	5.38	Least concern
3	Sida acuta	Malaidangi	10	3	30	0.33	0.10	3.33	3.97	3.23	Not assessed
4	Scrophularia nodosa	Sarakkothini	15	7	30	0.50	0.23	2.14	5.95	7.53	Not assessed
5	Helicteresisora	Valampuri	2	2	30	0.07	0.07	1	0.79	2.15	Not assessed
6	Cynodondactylon	Arugu	12	6	30	0.40	0.20	2	4.76	6.45	Not assessed
7	Sporobolus fertilis	Giant Parramatta Grass	9	4	30	0.30	0.13	2.25	3.57	4.30	Not assessed
8	Viburnum dentatum	Viburnum	5	5	30	0.17	0.17	1	1.98	5.38	Least concern
9	Heraculem spondylium	Hog Weed	20	10	30	0.67	0.33	2	7.94	10.75	Not assessed
10	Laportea canadensis	Peruganchori	30	20	30	1.00	0.67	1.5	11.90	21.51	Not assessed
11	Euphorbia hirta	Amman Pacharisi	5	4	30	0.17	0.13	1.25	1.98	4.30	Not assessed
12	Tridax procumbens	Vettukaayathalai	5	4	30	0.17	0.13	1.25	1.98	4.30	Not assessed
13	Tephrosia purpurea	Kavali	20	4	30	0.67	0.13	5	7.94	4.30	Not assessed
14	Sida cordifolia	Maanikham	45	4	30	1.50	0.13	11.25	17.86	4.30	Not assessed
15	Tridax procumbens	Cuminipachai	15	4	30	0.50	0.13	3.75	5.95	4.30	Not assessed
16	Ruelliastrepens	Grandinayagam	25	4	30	0.83	0.13	6.25	9.92	4.30	Not assessed
17	Senna occidentalis	Nattamsakarai	25	4	30	0.83	0.13	6.25	9.92	4.30	Not assessed

3.7.4 Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef:

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

Table 3-19 Calculation of species diversity

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

3.7.5 Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef for trees

i. Species Diversity

Scientific Name	**Common Name**	**No. of Species**	**Pi**	**ln (Pi)**	**Pi x ln (Pi)**
Ficus Carica	Athi Maram	2	0.017857	-4.02535	-0.07188
Cassia siamea	ManjalKonrai	2	0.017857	-4.02535	-0.07188
Acacia nilotica	Karuvelai	4	0.035714	-3.3322	-0.11901
Bambusa vulgaris	Moongil	4	0.035714	-3.3322	-0.11901
Anacardium occidentale	Cashew	2	0.017857	-4.02535	-0.07188
Alstonia scholaris	Elilaipalai	2	0.017857	-4.02535	-0.07188
Psidium guajava	Guava	3	0.026786	-3.61989	-0.09696
Aegle marmelos	Vilvam	1	0.008929	-4.7185	-0.04213

Causuarina equisetifolia	Savukku	2	0.017857	-4.02535	-0.07188
Albizia amara	Wunja	1	0.008929	-4.7185	-0.04213
Cocos nucifera	Thennai	15	0.133929	-2.01045	-0.26926
Artocarpus heterophyllus	Palaa	2	0.017857	-4.02535	-0.07188
Bombax ceiba	Sittan	4	0.035714	-3.3322	-0.11901
Azadirachta indica	Veppam	10	0.089286	-2.41591	-0.21571
Delonix regia	Cemmayir-Konrai	1	0.008929	-4.7185	-0.04213
Delonix elata	Perungondrai	1	0.008929	-4.7185	-0.04213
Dalbergia sissoo	Shisham	1	0.008929	-4.7185	-0.04213
Ficus benghalensis	Alai	2	0.017857	-4.02535	-0.07188
Annona squamosa	Sitapalam	1	0.008929	-4.7185	-0.04213
Pithecellobium dulce	Kodukapuli	1	0.008929	-4.7185	-0.04213
Ficus religiosa	Arasa maram	3	0.026786	-3.61989	-0.09696
Couroupita guianensis	Nagalingam	5	0.044643	-3.10906	-0.1388
Musa paradise	Vaazhai	3	0.026786	-3.61989	-0.09696
Prosopis juliflora	Vaelikaruvai	3	0.026786	-3.61989	-0.09696
Mangifera indica	Mamaram	8	0.071429	-2.63906	-0.1885
Mimusops elengi	Magizham	2	0.017857	-4.02535	-0.07188
Morinda pubescens	Nuna	6	0.053571	-2.92674	-0.15679
Thespesia populnea	Poovarasam	3	0.026786	-3.61989	-0.09696
Tectona grandis	Thekku	3	0.026786	-3.61989	-0.09696
Tamarindus indica	Puli	8	0.071429	-2.63906	-0.1885
Syzygium cumini	naval	1	0.008929	-4.7185	-0.04213
Carica papaya	Papaya	3	0.026786	-3.61989	-0.09696
Ziziphus mauritiana	Elandai	1	0.008929	-4.7185	-0.04213
Citrus medica	Elumichai	2	0.017857	-4.02535	-0.07188
Total		112			-3.22

H (Shannon Diversity Index) =1.76

Shrubs

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Jatropagossypifolia	Kaatamanaku	28	0.14433	-1.93565	-0.27937
Lantana trifolia	Shrub verbana	10	0.051546	-2.96527	-0.15285
Robiniapseudoacacia	Black locust	17	0.087629	-2.43464	-0.21335
Lantana camara	Unnichedi	9	0.046392	-3.07063	-0.14245
Calotropis gigantea	Erukam	14	0.072165	-2.6288	-0.18971
Stachytarpheaurticifolia	Rat tail	15	0.07732	-2.55981	-0.19792
Datura metal	Ummattangani	5	0.025773	-3.65842	-0.09429
Hibiscus rosa sinensis	Sembaruthi	3	0.015464	-4.16925	-0.06447

Tabernaemontanadivaricata	Crepe Jasmine	3	0.015464	-4.16925	-0.06447
Chloromolaena odorata	Venapacha	9	0.046392	-3.07063	-0.14245
Euphorbia geniculata	Amman Pacharisi	3	0.015464	-4.16925	-0.06447
Catharanthus roseus	Nithyakalyani	3	0.015464	-4.16925	-0.06447
Woodfordiafruiticosa	Velakkai	3	0.015464	-4.16925	-0.06447
Morindapubescens	Mannanunai	2	0.010309	-4.57471	-0.04716
Acalypha indica	Kuppaimeni	20	0.103093	-2.27213	-0.23424
Parthenium hysterophorous	Vishapoondu	50	0.257732	-1.35584	-0.34944
Total		194			-2.3656

H (Shannon Diversity Index) =1.97

Herbs

Scientific Name	**Common Name**	**No. of Species**	**Pi**	**ln (Pi)**	**Pi x ln (Pi)**
Plumbago zeylanica	Chittiramoolam	3	0.011905	-4.43082	-0.05275
Mimosa pudica	Thottacherungi	6	0.02381	-3.73767	-0.08899
Sida acuta	Malaidangi	10	0.039683	-3.22684	-0.12805
Scrophularia nodosa	Sarakkothini	15	0.059524	-2.82138	-0.16794
Helicteresisora	Valampuri	2	0.007937	-4.83628	-0.03838
Cynodondactylon	Arugu	12	0.047619	-3.04452	-0.14498
Sporobolus fertilis	Giant Parramatta Grass	9	0.035714	-3.3322	-0.11901
Viburnum dentatum	Viburnum	5	0.019841	-3.91999	-0.07778
Heraculem spondylium	Hog Weed	20	0.079365	-2.5337	-0.20109
Laportea canadensis	Peruganchori	30	0.119048	-2.12823	-0.25336
Euphorbia hirta	Amman Pacharisi	5	0.019841	-3.91999	-0.07778
Tridax procumbens	Vettukaayathalai	5	0.019841	-3.91999	-0.07778
Tephrosia purpurea	Kavali	20	0.079365	-2.5337	-0.20109
Sida cordifolia	Maanikham	45	0.178571	-1.72277	-0.30764
Tridax procumbens	Cuminipachai	15	0.059524	-2.82138	-0.16794
Ruelliastrepens	Grandinayagam	25	0.099206	-2.31055	-0.22922
Senna occidentalis	Nattamsakarai	25	0.099206	-2.31055	-0.22922

Total		252			-2.56298

H (Shannon Diversity Index) =2.39

i. Evenness

Details	H	Hmax	Evenness	Species Richness (Margalef)
Trees	3.22	3.5	0.9	7
Shrubs	2.36	2.77	0.85	2.84
Herbs	2.56	2.83	0.9	2.89

From the above, it can be interpreted that herb community has higher diversity. While the tree community shows less diversity. It is also observed that most of the quadrates have controlled generation of plant species with older strands. Higher herb species diversity can be interpreted as a greater number of successful species and a more stable ecosystem where more ecological niches are available, environmental change is less likely to be damaging to the ecosystem as a whole. Species richness is high for herb community when compared with tree and shrubs.

3.7.6 Frequency Pattern

To understand the frequency pattern, the observed frequency is compared with the Raunkiaer's frequency. Any deviation from Raunkiaer's frequency implies disturbed community.

Classes of species in a community and normal value of class according to Raunkiaer.

Table 3-20 Frequency Pattern

Class	Frequency (%)	Normal Value in the class
A	1-20	53
B	21-40	14
C	41-60	9
D	61-80	8
E	81-100	16

Where A>B>C>=<D<E

Raunkiaer's class for the observed species

S. No.	Scientific Name	Local Name	Frequency (%)	Class as per Raunkiaer's Law
1.	Ficus Carica	Athi Maram	33.33	B

2.	Cassia siamea	ManjalKonrai	33.33	B
3.	Acacia nilotica	Karuvelai	66.67	D
4.	Bambusa vulgaris	Moongil	66.67	D
5.	Anacardium occidentale	Cashew	33.33	B
6.	Alstonia scholaris	Elilaipalai	33.33	B
7.	Psidium guajava	Guava	50.00	C
8.	Aegle marmelos	Vilvam	16.67	A
9.	Causuarina equisetifolia	Savukku	33.33	B
10.	Albizia amara	Wunja	16.67	A
11.	Cocos nucifera	Thennai	100	E
12.	Artocarpus heterophyllus	Palaa	33.33	B
13.	Bombax ceiba	Sittan	66.67	D
14.	Azadirachta indica	Veppam	100	E
15.	Delonix regia	Cemmayir-Konrai	16.67	A
16.	Delonix elata	Perungondrai	16.67	A
17.	Dalbergia sissoo	Shisham	16.67	A
18.	Ficus benghalensis	Alai	33.33	B
19.	Annona squamosa	Sitapalam	16.67	A
20.	Pithecellobium dulce	Kodukapuli	16.67	A
21.	Ficus religiosa	Arasa maram	50.00	C
22.	Couroupita guianensis	Nagalingam	50.00	C
23.	Musa paradise	Vaazhai	50.00	C
24.	Prosopis juliflora	Vaelikaruvai	50.00	C
25.	Mangifera indica	Mamaram	100	E
26.	Mimusops elengi	Magizham	33.33	B
27.	Morinda pubescens	Nuna	100	E
28.	Thespesia populnea	Poovarasam	50.00	C
29.	Tectona grandis	Thekku	50.00	C
30.	Tamarindus indica	Puli	100	E
31.	Syzygium cumini	naval	16.67	A
32.	Carica papaya	Papaya	50.00	C
33.	Ziziphus mauritiana	Elandai	16.67	A
34.	Citrus medica	Elumichai	33.33	B

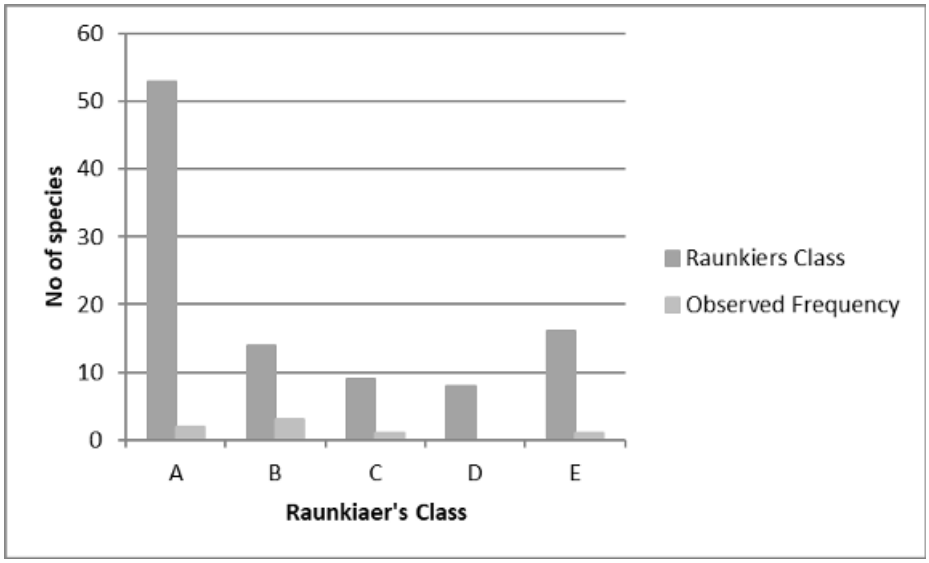


Figure 3-12 Raunkiaer's class for the observed species

Interpretation: Interpretation: The observed frequency is A<B>C>D<E, which does not follow Raunkiaer's Distribution Frequency and hence the ecology is disturbed.

3.7.7 Floral study in the Buffer Zone:

Economically important Flora of the study area

Agricultural crops: Paddy, Maize are the main crop grown. Different fruits like Banana, papaya, mangoes, guava and vegetables like brinjal, drumsticks, onion, Coriander also grown by the local people.

Medicinal species: The nearby area is also endowed with the several medicinal species which are commonly available in the shrub forest and waste lands. The common medicinal species of the region are Asparagus racemosus (satamulli), Aegle marmelos (golden apple), Azadirachta indica (Neem) etc.

Rare and endangered floral species: There are no rare or endangered or threatened (RET) species of in the study area. During the vegetation survey, there are no any species which are endangered or threatened under IUCN (International Union for Conservation of Nature and Natural resources) guidelines.

3.7.8 Faunal Communities

Both direct and indirect observation methods were used to survey the fauna.

- Point Survey Method: Observations were made in each site for 15 minutes duration.
- Road Side Counts: The observer traveled by motor vehicles from site to site, all sightings were recorded (this was done both in the day and night time). An index of abundance of each species was also established.
- Pellet and Track Counts: All possible animal tracks and pellets were identified and recorded (South Wood, 1978).

Additionally, survey of relevant literature was also done to consolidate the list of fauna distributed in the buffer zone.

Based on the Wildlife Protection Act, 1972 (WPA 1972, Anonymous. 1991, Upadhyay 1995, Chaturvedi and Chaturvedi 1996) species were short-listed as Schedule II or I and considered herein as endangered species. Species listed in Ghosh (1994) are considered as Indian Red List species.

Methodology Adopted:

Point Survey method was adopted for this development project where observations were made in each site for 15 minutes duration (10 times).

Study in the core zone:

Point Survey method was adopted for the study within 2 km radius and the following species were observed.

Mammals: No wild mammalian species was directly sighted during the field survey. Discussion with local villagers located around the study area also could not confirm presence of any wild animal in that area. Three stripped Palm Squirrel, Common Indian Hare, Common mongoose, Common Mouse etc were observed during primary survey.

Avifauna: Since birds are considered to be the indicators for monitoring and understanding human impacts on ecological systems (Lawton, 1996) attempt was made to gather quantitative data on the avifauna by walk through survey within the entire study area and surrounding areas. From the primary survey, a total of 26 species of avifauna were identified and recorded in the study area. The diversity of avifauna from this region was found to be quite high and encouraging.

The list of fauna species found in the study area is mentioned in Table below.

Table 3-21 List of fauna species

Scientific Name	Common Name	Schedule of wild protection act	IUCN conservation stat
Mammals			
Funambulus pennar	Palm Squirrel	IV	Least Concern
Mus rattus	Indian rat	IV	Not listed
Bandicota bengalen	Indian mole rat	IV	Least Concern
Funambulus palmar	Three stripped palm squ	IV	Least Concern
Herestes edwardsii	Common Mangoose	IV	Not listed
Mus musculus	Common Mouse	IV	Least Concern
Bandicota indica	Rat	IV	Least Concern
Lepus nigricollis	Indian Hare	IV	Least Concern
Felis catus	Cat	Not listed	Not listed
Canis lupus familiar	Indian dog	Not listed	Not listed
Bos Indicus	Indian Cow	Not listed	Not listed
Bubalus bubalis	Buffalo	I	Not listed
Sus scrofa domestic	Domestic pig	Not listed	Not listed
Birds			
Milvus migrans	Black kite	IV	Least concern
Saxicoloides fulicatu	Indian Robin	IV	Least concern
Pycnonotus cafer	Red vented Bulbul	IV	Least concern
Phragamaticola aed	Thick billed warbler	IV	Least concern
Pericrocotus cinnamomeus	Small Minivet	IV	Least concern
Eudynamys scolopa	Koel	IV	Least concern
Psittacula krameni	Rose ringed parakeet	IV	Least concern
Dicrurus marcocerc	Black drongo	IV	Least concern
Columba livia	Rock pigeon	IV	Least concern
Corvus splendens	House crow	IV	Least concern
Alcedo atthis	Small blue kingfisher	IV	Least concern
Cuculus canorus	Common Cukoo	IV	Least concern

Reptiles & Amphibians			
Chameleon zeylanic	Chameleon	IV	Not listed
Calotes versicolor	Common garden lizard	II	Not listed
Bungarus caeruleus	Common krait	IV	Not listed
Ophisops leschenau	Snake eyed lizard	--	Not listed
Bufo melanostictus	Toad	IV	Least concern
Ptyas mucosa	Rat snakes	IV	Least concern
Hemidactylus sp.	House lizard	--	Not listed
Butterflies			
Danaus chrysippus	Plain Tiger	--	Not listed
Papilio demoleus	Common lime	--	Not listed
Euploea core	Common crow	--	Least concern
Danaus genutia	Common tiger	--	Not listed
Eurema brigitta	Small grass yellow	--	Least concern

3.8 Demography and Socio Economics

The demography survey study is done within 10km radius from the project site. The population, Household, Sex ratio, Literacy rate, SC, ST details for all the villages in the study area is listed below:

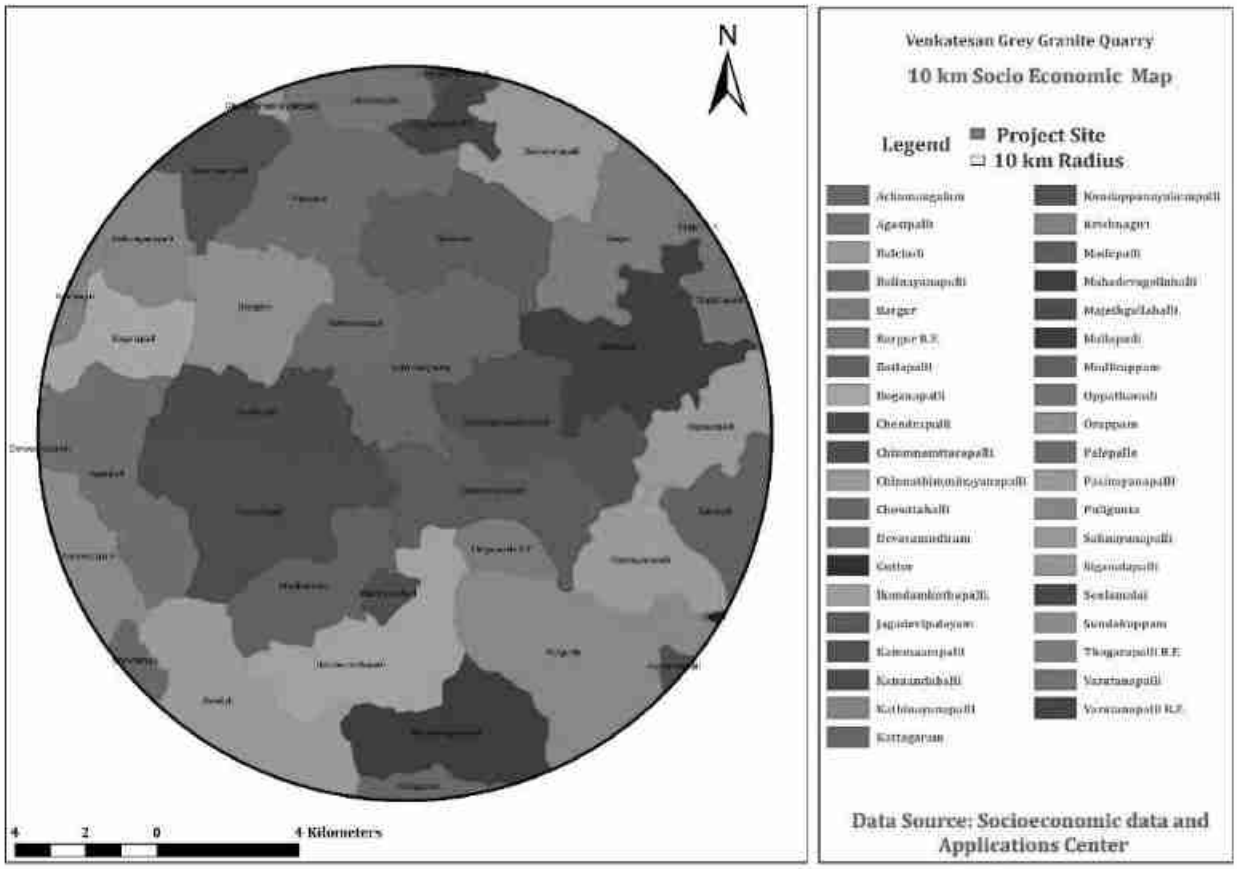


Figure 3.53 Socio Economic map around 10km radius from the project site

Table 3-22: Demography Survey Study

Source: Census of India, 2011

Villages	Household	Population	Sex Ratio		Literacy Rate		SC	ST
			Male	Female	Male	Female		
Oppathavadi	2156	9604	4805	4799	3162	2506	331	272
Mallapadi	1840	7707	3902	3805	2846	2238	724	46
Sigaralapalli	1799	7765	3975	3790	2998	2349	1643	3
Pasinayanapalli	631	2441	1224	1217	743	651	444	32
Batlapalli	1199	5036	2625	2411	1797	1359	2077	0
Kondappanayakempalli	846	3653	1903	1750	1331	981	95	7

Kannandahalli	2055	8562	4485	4077	3273	2417	638	0
Mahadevagollahalli	1395	5855	3015	2840	2028	1449	204	48
Ikondamkothapalli.	977	3964	1982	1982	1376	1108	358	111
Majethgollahalli	395	1592	776	816	551	453	32	0
Modikuppam	662	2525	1277	1248	951	674	213	23
Chendrapalli	1507	6467	3266	3201	2188	1629	1210	18
Jagadevipalayam	1607	6747	3398	3349	2464	2010	1602	447
Achamangalam	974	4179	2150	2029	1634	1187	611	0
Soolamalai	477	1966	1027	939	704	470	344	0
Balinayanapalli	1132	4761	2470	2291	1767	1354	495	0
Orappam	1549	6796	3378	3418	2385	1953	779	0
Palepalle	1847	7631	3698	3933	2832	2616	1092	43
Varatanapalli	1693	7102	3586	3516	2560	2062	365	97
Chinmnamttarapalli	1242	5138	2583	2555	1852	1503	467	218
Chinnathimminayanapalli	1115	4794	2390	2404	1716	1351	1716	5

3.9 Traffic Impact Assessment

Traffic data collected continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., heavy motor vehicles, light motor vehicles and two/three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station during each shift- one person on each of the two directions for counting the traffic. At the end of each hour, fresh counting and recording was undertaken. Total numbers of vehicles per hour under the three categories were determined.

Figure 3-64: Site Connectivity

Table 3-23: No. of Vehicles per Day

S. No	Vehicles Distribution	Number of Vehicles Distribution/Day	Passenger Car Unit (PCU)	Total Number of Vehicle in PCU
		NH-77	**-**	**NH-77**
1	Cars	1205	1	1205
2	Buses	170	3	510
3	Trucks	285	3	855
4	Two wheelers	648	0.5	324
5	Three wheelers	589	1.5	883
Total		**2897**	**-**	**3777**

Table 3-24: Existing Traffic Scenario and LOS

Road	V (Volume in PCU/hr)	C (Capacity in PCU/hr)	Existing V/C Ratio	LOS
NH45	3777/24=156	157	0.36	**B**

Note: The existing level may be "Very Good" for NH-77.

V/C	LOS	Performance
0.0-0.2	A	Excellent
0.2-0.4	B	Very Good
0.4-0.6	C	Good/ Average/ Fair
0.6-0.8	D	Poor
0.8-1.0	E	Very Poor

4 Anticipated Environmental Impacts & Mitigation Measures

This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modeling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give the details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

4.1 Introduction

An environmental impact is defined as any change to the environment, whether adverse or beneficial, resulting from a facility's activities, products, or services. The anticipation of the possible & potential Environmental impact due to the proposed project is a key step in EIA. Based on the impacts assessed, appropriate mitigation measures should be adopted to maintain the environment with less or no damage.

Environmental Impacts can be group into Primary impacts & Secondary Impacts

Primary Impacts: These impacts are directly attributed by the project

Secondary Impacts: These are those which are induced by primary impacts and include the associated investments and changed patterns of the social and economic activities by the action.

Assessment of impacts is done for the following Environmental Parameters:

- Land Environment
- Water Environment
- Air Environment
- Noise Environment
- Biological Environment
- Socio Economic Environment

4.2 LAND ENVIRONMENT:

<table>
<tr><th>Aspect</th><th>Impact</th><th>Mitigation Measures</th></tr>
<tr>
<td>Mining of Granite</td>
<td>The proposed 3.22.0 Ha mine located in Jagadevipalayakm Village, Grey granite of 10,240m^3 at a depth of 15 m BGL for the period of respectively. The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 5.0 meter vertical bench and bench width of 5.0 meter. At the end of 5 years, mining lease area will be converted into ultimate pit.
<table>
<tr><td colspan="3">ULTIMATE PIT DIMENSIONS</td></tr>
<tr><td>Length(m)</td><td>Width(m)</td><td>Depth(m)</td></tr>
<tr><td>221.0</td><td>139.0</td><td>31.0</td></tr>
</table>
</td>
<td>The proposed project site is not prone to any kind of soil erosion (Source: Bhuvan).

In addition, garland drainage of 1m x 1m will be provided to avoid storm water run- off.

It is proposed to plant 80 Nos of local tree species per year (Casuarina and Pungan) along the roads, outer periphery of the mining area which enhances the binding property of the soil.

It is proposed to improve the affected land wherever possible for better land use, so as to support vegetation and creation of water reservoir in the ultimate pit after quarrying.

Top soil of the lease area is Nil for the next five years. Grey Granite waste forms nearly 60% of ROM and the quantity of waste in the five years will be around 15360m3. Granite Waste will be dumped in the Western side of the lease area for the next five years.</td>
</tr>
</table>

	The main impact of open cast mining on land-use is land degradation. The land is bound to be excavated for mining of Grey Granite Quarry.	The source of dust generation is majorly due to drilling, blasting (mild blasting if necessary), loading & unloading of the mined out mineral, the impact will be mitigated by water sprinkling regularly once in 3hrs. The proposed mining activity is carried out in almost plain terrain.
	Impact on soil of the study area will be minimal as there are no wastewater generated, heavy metal infusion, stack emissions.	After removal of minerals, undulating portion will be created. Excavated area or ultimate pit at the end of the mine period will be converted into water reservoir. Two tier tree belts will be planted along the safety distance.
	Impact due to transformation of terrain characteristics over the large area results in soil degradation.	There will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.
	Solid waste will be generated from the mining activity as there will be refuse also generation of domestic waste. If it is not properly managed, may cause odor and health problem to the workers.	

4.3 WATER ENVIRONMENT:

Aspect	Impact	Mitigation Measures
Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.	The mining in the area may cause ground water contamination due to intersection of the water table and mine runoff.	The water table will not be intersected during mining, as the ultimate depth is limited upto 15 meter below the ground level, whereas the ground water table is at 42-48m below the ground level. The municipal wastewater will be disposed into septic tanks of 5 cum and soak pit. No chemicals consisting of toxic elements will be used for carrying out mining activity.
	The ground water depletion may occur due to mining activity	The ground water table is at a depth of 42-48m BGL, the mining operation will not affect the aquifer. The ultimate pit at the end of the mining operation will be used for rain water storage, the stored water will be used for green belt development and further the stored water will be used for domestic purposes (other than drinking) after proper treatment.
	Chemicals consisting of nitrate used for blasting (if necessary) may pollute the surface run off.	Further, the run-off water will be stored in sumps and after proper treatment; water will be used in the mining operation for dust suppression.

	Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labours.	Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater

4.4 AIR ENVIRONMENT:

Aspect	Impact	Mitigation Measures
Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.	***Impacts during Operation Phase*** During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated. The main source of pollutants arises due to drilling and blasting. 2 No of Tipper will be used for loading and unloading, 1 No of Excavator (1.2 m^3 bucket capacity (with rock breaker attachment) will be used for excavation of the mineral which contributes to the generation of fugitive dust. In addition, blasting will be done using explosives leading to the generation of dust.	***Mitigation Measures during Operation Phase*** It is proposed to plant 400 Nos of local species (with 80 Nos each year) along the haul roads, outer periphery within the lease area to prevent the impact of dust in consultation with Forest department for the plantation of trees (Casuarina and Pungan) in two tier to combat air pollution and with herbs (Nerium) in between the tree species. Planning transportation routes of the mined out mineral, so as to reach the nearest paved roads (an approach road) by shortest route connecting to NH77.

	<u>*Effect on Human*</u> • Adverse effect on human health of working labourers and neighbouring villagers like effect on breathing and respiratory system, damage to lung tissue, influenza or asthma. • Dust generation due to loading and unloading of mineral and due to transportation can also affect the workers as well as nearby villagers. <u>*Effect on Plants*</u> • Stomatal index may be minimized due to dust deposit on leaf.	Alternatively, gravelled road may be constructed between mine lease area and nearest paved road connectivity. The speed of trucks plying on the haul road will be limited to 20km/hr to avoid generation of dust. The trucks will be covered by tarpaulin. Overloading will be avoided. Personal Protective Equipments (PPEs) like eye goggles, dust mask, leather gloves, safety shoes & boots will be provided to the workers engaged at dust generation points like excavation and loading points. 0.5 KLD of water will be proposed for sprinkling on unpaved roads to avoid dust generation during transportation.

Air Quality Modeling:

The AERMOD is actually a modeling system with three separate components:

- AERMOD (AERMIC Dispersion Model),
- AERMAP (AERMOD Terrain Preprocessor)
- AERMET (AERMOD Meteorological Preprocessor)

Special features of AERMOD include its ability to treat the vertical in homogeneity of the planetary boundary layer special treatment of surface releases, irregularly shaped area sources, a plume model for the convective boundary layer, limitation of vertical mixing in the stable boundary layer, and fixing the reflecting surface at the stack base.

The AERMET is the meteorological preprocessor for the AERMOD. Input data can come from hourly cloud cover observations, surface meteorological observations and twice-a-day upper air soundings. Output includes surface meteorological observations and parameters and vertical profiles of several atmospheric parameters.

The AERMAP is a terrain preprocessor designed to simplify and standardize the input of terrain data for the AERMOD. Input data include receptor terrain elevation data. Output includes, for each receptor, location and height scale, which are elevations used for the computation of airflow around hills.

4.4.1 Source Characterization

A detailed listing of all emission sources and their corresponding modelling input release parameters and emission rates is listed this report. A general description of how each source type was treated is presented below.

The emission Sources from the proposed operation are

Point Sources:

Point sources for mining operations are typically include dust collectors, hot water heaters, and emergency generator(s). Since at the present project the following sources are anticipated.

1. Hydraulic excavator – 1.2 Cum Bucket Capacity (with Rock Breaker Attachment)
2. Jack Hammer 25.5mm Dia
3. Tipper
4. Tractor Mounted - Compressor
5. Drilling and excavation with Accessories

Road Sources:

A road network was developed to depict the anticipated haul truck routes and truck discharge locations during the mine operations. The anticipated emissions from the road sources and corresponding anticipated impact during the monitoring period of March to June 2022 emissions were estimated. Emissions due to haul road and general plant traffic on the unpaved road network were modelled as volume sources. The model volume source parameter for the haul roads initially utilized USEPA developed emission factors for hauling trucking. The haul road sources utilized source to source spacing of 6 meters along the simulated haul roads. The initial lateral dimension of the sources were set to 3 m were used as an input to replicated a 2 truck travel adjacent for a typical mining scenario.

The parameters considered for the hauling operation include the following,

- size of haul trucks commonly used
- degree of dust control/compaction of permanent haul roads

Other fugitive particulate emission sources:

Other fugitive particulate emission sources that were modelled as volume sources include the following:

- Fugitive emissions from trucks unloading at the primary crusher were represented by a single volume source. The release height was set to 0 meters (dump pocket is at grade level).
- Fugitive emissions due to wind erosion is not considered as the mining area is predominately rocky surface with minimal wind erosion. If an wind erosion is anticipated to occur, it would be localized.

- Fugitive emissions from transfer points were represented by single volume sources. The release heights for these sources were set to the actual height of the truck transfer process.

Post Project Scenario

Emissions from operations will result from process equipment and mining operations. Process equipment was modeled at maximum capacity. Emissions from mining were based upon the mining rate and haul truck travel necessary to transport the stones and waste from the pit to the storage area.

Predicted maximum ground level concentrations considering micro meteorological data of March to June 2022 are superimposed on the maximum baseline concentrations obtained during the study period to estimate the post project scenario, which would prevail at the post operational phase. The overall scenario with predicted concentrations over the maximum baseline concentrations is shown in the following table along with isopleths.

Table 4-1 Controlled emission calculation (24Hour- average modeling inputs)

Activity		Source Type	Emissions (g/s)				
			TSPM	PM_{10}	$PM_{2.5}$	NO_X	CO
Haulage		Line volume	4.796E-02	1.356E-02	8.134E-03	3.364E-02 (from tipper)	2.0291E-03 (from tipper)
Topsoil handling	Scraper	open pit	Negligible	Negligible	Negligible	N/A	N/A
	Bulldozing		9.014E-02	2.991E-02	1.795E-02	6.70E-03 (from excavator)	5.833E-02 (from excavator)
Granite mining	Wet drilling		1.88E-04	3.76E-05	2.25E-05	5.22E-03 (from compressor)	1.13E-03 (from compressor)
	Loading		2.34E-04	4.69E-05	2.82E-05	N/A	N/A

4.5 NOISE ENVIRONMENT:

Aspect	Impact	Mitigation Measures
Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.	Usage of Equipments (Excavator, Tipper, Jack Hammer), Machinery and trucks used for transportation will generate noise. Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure. Number of vehicles will be increased due to the proposed mining activity hence vehicle may collate which may result in unwanted sound and can also cause impact on human health like breathing and respiratory system, damage to lung tissue, influenza or asthma.	• The machinery will be maintained in good running condition so that noise will be reduced to minimum possible level. • Awareness will be imparted to the workers once in six months about the permissible noise level and effect of maximum exposure to those levels. Adequate silencers will be provided in all the diesel engines of vehicles. • It will be ensured that all transportation vehicles carry a valid PUC Certificates. • Speed of trucks entering or leaving the mine will be limited to moderate speed (20km/hr) to prevent undue noise from empty vehicles. The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments. • It is proposed to plant 400 Nos. of local species (Casuarina and Pungan) to reduce the impact of noise in the study area. The development of green belts around the periphery

		of the mine will be implemented to attenuate noise. • The trucks will be diverted on two roads viz. NH77 and a District road to avoid traffic congestion. • Health check-up camps will be organized once in six month. • Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas. • Provision of quiet areas, where employees can get relief from workplace noise.

4.6 BIOLOGICAL ENVIRONMNENT:

Aspect	Impacts	Mitigation Measures
Site Clearance	Loss of habitat due to site clearance which may lead to ecological disturbance.	The proposed mining lease is already a dry land hence no site clearance is required. Only few shrubs and herbs like parthenium sp., prosopis juliflora were present.

Planting of trees	Development of afforestation in the mine lease area will have a positive impact as the land was initially a barren.	7.5m safety distance will be provided all along the boundary of the mine lease area and safety. Around 0.37.3 Ha of land is utilized for greenbelt development (400 Nos – 5 years). This will attract avifauna thus enhancing the existing ecological environment.

4.7 SOCIO ECONOMIC ENVIRONMNENT:

Aspect	Impact	Mitigation Measures
Proposed implementation of Mining activity	Land acquisition for the implementation of the project may result in loss of assets, which in return will make the PAP to shift, losing their normal routine and livelihood	The proposed project is a patta land of ***Thiru.S.Venkatesan*** and the land is vacant where there are no human settlement within 500m radius. Hence the project does not involve Rehabilitation and resettlement
Drilling, Blasting, Loading and Transportation of the mined out mineral	The mining activities may cause dust emission, noise pollution thereby causing disturbance to the local habitat	No human activity is envisaged near the project site. The nearest human settlement is observed in Balinayanapalli village which is 1.0km-N away from the project site.
Grazing and Rearing activities in the nearby villages	The Grazing and rearing of local animals like Sheep, Goat and cows is observed in the nearby villages, which may be affected due to the project as the	It is proposed to use gravelled road and nearest paved road and preferred not to use unpaved roads. In addition to that, the speed of trucks will be limited to 20km/hr to avoid any accidents.

	movement of the vehicles may affect/injure the animals	
Employment opportunity	The project will improve the livelihood of the local people	After the development of the proposed mine, it will improve the livelihood of local people and also provide the direct and indirect employment opportunities. The grey granite building stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price.
Corporate Environmental Responsibility	The proposed project will help in natural resource augmentation & Community resource development.	As a part of CER, 2% of the project cost i.e, 2.74 Lakhs will be allocated. Developing the library, Sports/Drinking water facilities in nearby school.

4.8 Other Impacts:

S. No	Aspect	Impact	Mitigation measure
1.	Risk due to the proposed mining	Accidents may occur in the mine area	Proper PPE kit (Safety jacket, Helmet, Safety Shoes, Gloves) etc will be provided to each and every employee in the mine lease concerning the safety of each labor
2.	Blasting	Injury to the labours due to the blasting activity	Alarm system in the form of Siren will be engaged in the project site to caution the blasting activity. In addition to that, the blasting activity (if necessary) will be scheduled at particular time – 5 P.M to 6 P.M (or whenever required) so that the employees will be aware of the activity. Smoking will be banned in the site and sign boards will be displayed in various places at site.
3.	Screening of Labors	Labors will be checked for health condition before employing them in mining activity	All the labors will be checked and screened for health before employing them. After employing them, periodical medical checkups will be held once in every six months.

5 Analysis Of Alternatives

5.1 General

Analysis of alternative is a significant aspect in planning and designing any project. Cost benefit analysis should be work out along with other parameters while choosing an alternative in such a way that the production is maximum and the mining operation is environment friendly and cost effective. The first scheme of mining plan has been approved by the Commissionerate of Geology and Mining, Guindy prior to submission of the Form-1 and PFR.

ToR issued by the SEIAA-TN vide Letter No. SEIAA-TN/F.No.8965/SEAC/ToR-1133/2021 dated 25.03.2022. The study for alternative analysis involves in-depth examination of site and technology.

5.1.1 Analysis for Alternative Sites and Mining Technology

5.1.1.1 Alternative Site

The proposed project is the mining of Grey Granite Quarry and is proposed after prospecting the area. In other words, these can be implemented in the mineral available zone. Since the mining block has been allotted in principal by the State Government, there is no case for studying and exploring any other site as an alternative.

5.1.1.2 Alternative Technology

The open cast mining could be manual/semi-mechanized/mechanized depending upon the geological and topographical setup of the mineral (ROM) to be won and the daily/annual targeted production.

Table 5-1: Alternative for Technology and other Parameters

S. No.	Particular	Alternative Option 1	Alternative Option 2	Remarks

1.	Technology	Opencast semi mechanized mining	Opencast mechanized mining	Opencast semi mechanized Involving drilling and blasting are preferred. Benefits: Material is hard so to make it loose and to bring it to appropriate size.
2.	Employment	Local employment.	Outsource employment	Local employment is preferred Benefits: Provides employment to local people along with financial benefits No residential building/ housing is required.
3.	Labour transportation	Public transport	Private transport	Local labours will be deployed from Jagadevipalayam village so they will either reach mine site by bicycle or by foot. Benefits: Cost of transportation of labors will be
4.	Material transportation	Public transport	Private transport	Material will be transported through trucks/trolleys on the contract basis Benefits: It will give indirect employment.
5.	Water	Tanker supplier	Ground water/	Tanker supply will be preferred. Water will be sourced from Balinayanapalli Village which is located in 1.0km in North side from the project site.

6. Environmental Monitoring Program

6.1 General:

This chapter covers the planned environmental monitoring program. It also includes the technical aspects of monitoring the effectiveness of mitigation measures.

Monitoring is important to measure the efficiency of control measures. Post project monitoring of environmental parameters is of key importance to assess the status of environment. The monitoring program will serve as an indicator for identifying environmental degradation due to operation of the project and help in selection of appropriate mitigation measures to safeguard the environment.

Regular monitoring is as important as control of pollution since the efficacy of control measures can only be determined by monitoring. The project proponent has awarded **M/s. Ecotech Labs Pvt Ltd** for carrying out the post project environmental monitoring (PPM) and timely compliance report submission to various regulatory authorities.

Therefore, regular monitoring programme of the environmental parameters is essential to take into account the changes in the environmental quality. The objectives of monitoring are to:-

- Verify effectiveness of planning decisions;
- Measure effectiveness of operational procedures;
- Confirm statutory and corporate compliance; and
- Identify unexpected changes.

Table 6-1: Environmental Monitoring Programme

Parameters	Sampling	Frequency	Location
Air environment – Pollutants PM 10 PM 2.5 SO_2	5 locations	24 hourly twice a week 4 hourly. Twice a week, One non monsoon season 8 hourly, twice a week	Project Site, Jagadevi Village, Magithgollahalli Village, AES Higher Secondary School,

NO_x Lead in PM		24 hourly, twice a week	CSI St. John's Church, Mittapalli
Noise	5 locations	24 hourly Once in 5 locations	Project Site, Jagadevi Village, Magithgollahalli Village, AES Higher Secondary School, CSI St. John's Church, Mittapalli
Water (Ground water) • pH • Temperature • Turbidity • Magnesium Hardness • Total Alkalinity • Chloride • Sulphate • Fluoride • Nitrate • Sodium • Potassium • Salinity • Total nitrogen • Total Coliforms • Fecal Coliforms	5 locations	Once in 5 locations	Project Site, Jagadevi Village, Magithgollahalli Village, AES Higher Secondary School, CSI St. John's Church, Mittapalli

Water (surface water) • pH • Temperature • Turbidity • Magnesium Hardness • Total Alkalinity • Chloride • Sulphate • Fluoride • Nitrate • Sodium • Potassium • Salinity • Total nitrogen • Total Coliforms • Fecal Coliforms	Sample from nearby lakes/river	One time Sampling	Project Site nearby Lake and Marudepalli Lake
Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	5 locations	Once in 5 locations	Project Site, Jagadevi Village, Magithgollahalli Village, AES Higher Secondary School, CSI St. John's Church, Mittapalli
Ecology and biodiversity Study	Study area covering 5 km radius	One time Sampling	

Socio- Economic study (Population, Literacy Level, employment, Infrastructure like school, hospitals & commercial establishments)	Villages around 5 km radius	One time Sampling	

Table 6-2: Monitoring Schedule during Mining

S. No.	Attributes	Parameters	Frequency	Location
1.	Ambient Air Quality at Mine Site & Fugitive Dust Sampling	PM 10 PM 2.5 SO_2 NO_X	Once in a Month	Project Site
2.	Ground water Quality	Drinking Water Parameters, As per IS - 10500: 2012	Half yearly	Project Site
3.	Surface Water Quality	Class will be assessed as per the CPCB Guidelines	Half yearly	Project Site
4.	Soil Quality	(Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	Half yearly	Project Site
5.	Noise Level Monitoring	Noise level in dB(A) Quaterly/half yearly	Half yearly	Project Site

7 Additional Studies

7.1 General

This chapter covers the details of the additional studies viz. Risk assessment, Disaster Management, Public Hearing, Rehabilitation and Resettlement.

7.1.1 Public Hearing:

As the proposed mining project falls under 1(a), Category B1 – Cluster Mining (includes Existing other Quarries Thiru.S.Venkatesan - 3.22.0 Ha (Instant Proposal), Tmt.Mariam Banu – 3.90.0 Ha, Thiru.A.Ameed – 2.85.5 Ha. The Total extent of the Existing / Abandoned/Lease expired / Proposed quarries are 9.97.5 Ha

Hence under 7(III) of EIA notification 2006 and its subsequent amendments, the project involves the Public Consultation and the same will be conducted under SPCB (TN) in Krishnagiri District. The proceedings of the same will be incorporated in the Final EIA Report.

7.1.2 Risk assessment:

For mining projects to be successful, it should meet not only the production requirements, but also maintain the highest safety standards for all the workers. The industry has to identify the hazards, assess the associated risks and bring the risks to tolerable level regularly. Mining has considerable safety risk to miners. Unsafe conditions and practices in mines lead to a number of accidents and causes loss and injury to human lives, damages the property, interrupt production etc. Risk assessment is a systematic method of identifying and analyzing the hazards associated with an activity and establishing a level of risk. The hazards cannot be completely eliminated, and thus there is a need to define and estimate an accident risk level possible to be presented either in quantitative or qualitative way.

7.1.3 Identification of Hazard

7.1.3.1 Blasting Pattern:

The quarrying operation will be carried out by Opencast Semi Mechanized method in conjunction with conventional method of mining using Jack Hammer drilling and blasting (if necessary) for shattering effect and loosen the Granite.

7.1.3.2 Drilling and Blasting:

Drilling and Blasting parameters are as follows:

S.No	Type	Nos	Dia Hole mm	Size Capacity	Make	Motive power
1	Jack hammer & Accessories	4	35	1.2m to 6m	Atlas Copco	Compressed air
2	Compressor	1	7.5kgs/cm^2	400 psi	ELGI	Diesel Drive
3	Diamond wire saw	1	-	30m^3/Day	Optima	Diesel Generator
4	Gen set	1	-	Powerica	-	CP 125 D5P (H.P)
5	Excavator	1	-	300	Tata Hitachi	Diesel Drive
6	Tipper	2	-	10 Tonnes	Tata	Diesel Drive

Heavy Machineries: The following heavy machineries will be used in the proposed area:

- For Mining – Excavator of 1.2 Cum Bucket capacity (with Rock Breaker attachment), Jack Hammers (25.5 mm Dia) of 6 Nos.
- Loading Equipment – Excavator of 1.2 Cum Bucket Capacity (with Bucket attachment)
- Transportation (includes within the mine and mine to destination) – Tipper 2 No of 10 M.T capacity (from quarry to needy peoples and local crushers)

a. Risk:

Most of the accidents during transport of mined out mineral using other heavy vehicles are often attributed to mechanical failures and human errors.

b. Mitigation measures to minimize the risk

- At the time of loading no person will be allowed within the swing radius of the excavation.
- The dumpers/ trucks will stand near the loading equipment and fully braked when the muck is filled in it.
- The truck would be brought to a lower level so that the loading operation suits to the ergonomic condition of the workers.
- The workers will be provided with helmets, gloves and safety boots; loading and unloading operations will be carried out only during daylight
- All the mining machineries will be regularly maintained and checked such as brakes, lights and horns to keep in the efficient working order.

7.1.4 General Precautionary measures for the Risk involved in the proposed mine:

- In order to take care of above hazard/disaster, the following control measures will be adopted:
- All safety precautions and provisions of Mine Act,1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations;
- Entry of unauthorized persons will be prohibited;
- Firefighting and first-aid provisions in the ECC and mining area;
- Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the workers (14 Nos.) and regular inspection for their use;
- In case of eventuality, first aid will be given by the senior safety office in the mine area initially to the injured person. The safety officer will give notice of accident as per Rule-23 of Mines Act-1952;
- The safety officer (common for 3 mines within 500m radius) will be responsible for coordination between management district authorities/DGMS etc. Regarding general safety as per Rule-181 of MMR 1961, "No person shall negligently or will fully do anything likely to

endanger life or limb in the mine, or negligible or will fully omit to do anything necessary for the safety of the mine or of the persons employed there in". The workers will be provided with protective foot wear and safety helmets;

- Cleaning of mine faces will be regularly done;
- Handling of explosives, charging and blasting will be carried out by highly skilled labours only;
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines;
- Suppression of dust by sprinkling water on the haulage roads;

7.1.5 Safety Team:

The effective implementation of compliance of Safety Rules/ Statutory Provisions will be ensured. The safety officer will be engaged, meeting the requirement of Mines Act and their duties and responsibilities. The safety officer will be responsible for identification of the hazardous conditions and unsafe acts of workers and advice on corrective actions, conduct safety audit, organize training programs and provide professional expert advice on various issues related to occupational safety and health. Organizing safety training will be conducted to employees and contractor labors periodically.

7.1.6 Emergency Control Centre

The emergency control center will be provided to handle the emergency. The site main controller, key personnel and the senior officers of the fire and police services will attend it. The center will be equipped to receive and transmit information and directions from and to the incident controller and other areas of the works, as well as outside. The emergency control center will be sited in an area of minimum risk. This common Emergency control centre will be used for the mines around the 500m radius

7.2 Disaster Management:

The possible risks in the case of stone along with associated minor minerals mining projects are fly rock, vibration failure of pit, slope and waste dump, accidents due to transportation. Mining and allied activities are associated with several potential hazards to both the employees and the public at large. Safety of the mine and the employees is taken care of by the mining rules & regulations, which

are well defined with laid down procedure for safety, which when scrupulously followed, safety is ensured not only to manpower but also to machines & working environment.

7.2.1 Emergency Management Plan For Proposed Mines On Site- Offsite Emergency Preparedness Plan:

The emergency plan delineates the procedures for dealing with accidents or unexpected events and natural calamities arising from mining activity. An experience of any accidents that have occurred in other manufacturing/mining projects is considered to prepare this plan. This Emergency plan should be periodically reviewed and modified. It should also be changed based on the observations of emergency mock drills and experience of handling actual emergencies.

Major objectives of this onsite – offsite emergency plan are:

- To take necessary proactive and preventive actions to avoid the emergency.

The main aim of any emergency plan should be to prevent emergency situations.

To train the manpower to handle the emergencies of the following nature:

• Onsite (Within ML boundary)

• Offsite (Outside ML boundary)

7.2.2 Onsite off-site emergency Plan:

1- Emergency on account of:

- Fire
- Explosion
- Major accidents involving man-made collapse of the mining edges.
- Snake bites, attack by honey bees or attack by wild animals.

2- Disaster due to natural calamities like:

- Flood/ heavy rains which can involve natural landslides.
- Earth quake
- Cyclone
- Lightening

7.2.3 Emergency Plan:

- The mining operations should be immediately stopped in case of any emergency. A siren will be sounded during emergency time.
- An emergency assembly point will be created and all the workers will guide visitors or contractors to approach assembly point.
- Emergency vehicle (Ambulance) will be available in the nearby place, in proximity to the three mines and will rush to the emergency control centre at the blowing of emergency siren. The driver of emergency vehicle will follow the instructions of Incident Controller/Site Main Controller.
- Workers will be trained for the precautions to be taken during natural disasters like heavy rain, floods, earthquake and cyclone.
- All escape routes from mines to the assembly point or any other safe location will be made and the escape plan will be displayed in many places in the mine area

7.2.4 Emergency Control:

- Shut down of mining operations: Raising the alarm or siren followed by immediate safe shut down of the power supply, and isolation of affected areas.
- Treatment of injured: First aid and hospitalization of injured persons
- Protection of environment and property: During mitigation, efforts will be made to prevent impacts on environment and property to the extent possible.
- Preserving all evidences and records: This will be done to enable a thorough investigation of the true causes of the emergency.
- Ensuring safety of personnel prior to restarting of operations: Efforts required will be made to ensure that work environment is safe prior to restarting the work.

7.3 Natural Resource Conservation

There are no natural resources within the premises. The conservation strategies for energy will be followed in the proposed mine lease area. The pollutants of the mine will be minimized by adopting appropriate mitigation measures as mentioned Chapter 5 to prevent the effects on nearest water bodies. No surface runoff from the project site will be let into the nearest water bodies.

7.4 Resettlement and Rehabilitation:

The proposed Mine lease area is a private land of Thiru. S. Venkatesan. There is no displacement of the population within the project area and adjacent nearby area and hence Rehabilitation & Resettlement is not applicable.

8 Project Benefits

8.1 General

This chapter covers the benefits accruing to the locality, neighborhood, region and nation as a whole. It brings out the details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

8.1.1 Physical Benefits

The opening of the proposed project will enhance the following physical infrastructure facilities in the adjoining areas:

a.*Market:* Generating useful economical resource for construction. Due to demand supply chain, excavated mineral (Grey Granite) will sold in the market in the affordable price.

b.*Infrastructure:* The excavated Grey Granite will be used for ***Building & Construction Projects.***

c.*Enhancement of Green Cover & Green Belt Development*: As a part of reclamation plan, native tree species will be planted along the safety boundary (0.26.0 Ha) of the mine lease area. A suitable combination of trees that can grow fast and also have good leaf cover will be adopted to develop the green belt. It is proposed to plant 80 numbers of native species along with some fruit bearing and medicinal trees during the mining plan period.

8.2 Social Benefits

The mining in the area will create rural employment. During site visit, it has been observed that the economic conditions of the villages in the study area is quite normal. After the development of the proposed mine, it will improve the livelihood of local people and also provide the indirect employment opportunities. The granite for the infrastructural development in the area will be made available from the local markets at reasonably lower price.

As a part of CER, 2% of the project cost i.e., 2.74 Lakhs will be allocated. The detailed agenda, which is to be executed has been framed. The salient features of the programme are as follows:

- Developing he library, Sports/Drinking water facilities in nearby school.

8.3 Project Cost / Investment Details

(a) Fixed Asset Cost :

SL.No	Description	Amount (Rs)
1	Land cost	35,00,000
2	Labour shed	1,20,000
3	Sanitary facility	70,000
4	Fencing cost	1,60,000
Total		**38,50,000**

(b) **Operational Cost:**

SL.No	Description	Approximate Amount (Rs)
1	Excavator	55,00,000
2	Tippers 2 Nos	20,00,000
3	Wire saw	10,00,000
4	Compressor with loose tools	10,00,000
Total		**95,00,000**

(c) EMP Cost :

SL.No	Description	Approximate Amount (Rs)
1	Drinking water facility	1,00,000
2	Safety kits	80,000
3	1. Water sprinkling	50,000
4	2. Afforestation	30,000
5	3. Water quality test	40,000
6	4. Air quality test	40,000
7	5. Noise / Vibration test	40,000
Total		**3,80,000**

GRAND TOTAL PROJECT COST = Rs. 1,37,30,000/-

9 Environmental Cost Benefit Analysis

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

10 Environmental Management Plan

10.1 Introduction

This chapter comprehensively presents the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, during various Mining activities and provisions made towards the same in the cost estimates of project. This chapter describes the proposed monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

10.2 Subsidence

Mining will be carried out by opencast semi mechanized mining method as per scheme of mining plan approved by Commissionerate of Geology and Mining, Guindy. Subsidence/slope failures are not envisaged because there are no loose strata overlying the deposit (mineral to be excavated). The bench height will be average 5m. The individual bench slope has been proposed to be kept at 60^0 from horizontal. Moreover, all safety standards/ safeguards will be implemented as per guidelines prescribed by Director General of Mines Safety.

10.3 Mine Drainage

10.3.1 Storm water Management

The following measures will be taken with respect to the prevailing site conditions.

- Storm water drains with silt traps of size 1m x 1m will be suitably constructed all along the periphery of the pit area to collect the run-off from the mine area and divert into the pit.
- All measures will be taken not to disturb the existing drainage pattern adjacent to the mine lease area.
- The storm water collected from the mine area will be utilized for dust suppression on haul roads, plantation within the premises, etc.,

10.3.2 Drainage

Local workers will be deployed for the project. But, urinals and Latrines will be provided and the same will be connected to septic tank followed by soak pit arrangement. No domestic waste will be deposited into the nearby area. Regular checking will be carried out to find any blockage due to

silting or accumulation of loose materials. The drains will also be checked for any damage in lining / stone pitching, etc.

10.3.3 Administrative and Technical Setup

The Environment Management Plan (EMP) will consist of all mitigation measures for each component of the environment due to the activities increased during mining operation to minimize adverse environmental impacts resulting from the activities of the project.

To carry out the above activities, Thiru.S.Venkatesan will work in association with M/s. Ecotech Labs Pvt Ltd.

Table 10-1: Impacts and mitigation measures

S. No	Impacts on Environment	Activity / Aspect	Anticipated impacts	Mitigation measures	Budgetary Allocation
1.	Air	Fugitive Emission	During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated.	• Planting of trees along the safety distance of the Mine Lease Area • Water will be sprinkled in the site as dust suppression measure.	Rs.50,000 Rs.1,50,000
2.	Water	Wastewater Generation	Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labors	• Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater.	Rs.55,000
3.	Noise	Mining activities like drilling, blasting, loading and transportation	Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure. Apart from Mining activities like drilling, blasting may generate noise	• Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.	Rs.10,000
4.	Land	Improper management of Storm water Runoff	Storm water Runoff may result in Soil Erosion	• Garland drainage of 1m x 1m will be provided to avoid storm water run- off.	Rs.1,00,000

5.	Social Responsibility	Mining workers	Unhygienic site sanitation facilities may cause health damage to workers.	The objective is to ensure health and safety of the workers with effective provisions for the basic facilities of sanitation, drinking water, safety of equipments or machinery etc. The following will be done in the site ✓ By complying with the safety procedures, norms and guidelines (as applicable) as outlined in the National Building Code of India, Bureau of Indian Standards. ✓ Provide adequate number of decentralized latrines and urinals ✓ Providing Septic tank along with Soak pit arrangement ✓ Providing First Aid room, conducting frequent health checkups to labor and conducting free medical camps ✓ Providing safety helmet, Gloves, Jacket & Boots ✓ Providing measures to prevent fires. Fire fighting extinguishers and buckets of sand will be provided in the construction site	Rs.25,000 Rs.30,000 Rs.1,00,000 Rs.36,000 Rs.50,000
6.	Building materials resource conservation	Building Material consumption	Use of farfetched construction materials than the locally available	• Use of locally available construction materials.	

			construction materials may lead to over exploitation of natural resources & increase in carbon footprint.		

Table 10-2: Budgetary Allocation for EMP during Mining

S. No.	Description		Budgetary Allocation (in Rs.)
1.	**EMP COST**		
	i.	Drinking water facility	1,00,000
	ii.	Safety Kits	80,000
	iii.	Water Sprinkling	50,000
	iv.	Afforestation	30,000
2.	**Environmental Monitoring**		
	i.	Air Quality Monitoring	40,000
	ii.	Water Quality Monitoring	40,000
	iii.	Noise/Vibration Monitoring	40,000
		Total Cost	**3,80,000**

11 Summary & Conclusion

This chapter summarizes the overall justification for implementation of the project and explains how the potential impacts are mitigated.

11.1 Introduction

Thiru.S.Venkatesan site is a cluster of three mining project. The individual mine lease area is 3.22.0 Ha of Grey Granite Quarry located at S.F.No. 9 (Part) of Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk) in Krishnagiri District.

11.2 Project Overview

Table 11-1: Project Overview

S. No.	Description	Details
1	Project Name	Proposed Grey Granite Quarry-3.22.0 Ha
2	Proponent	Thiru.S.Venkatesan
3	Mining Lease Area Extent	3.22.0Ha
4	Location	S.F.No.9 (Part) Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk), Krishnagiri District.
5	Latitude	N 12° 29' 25.93" to N 12° 29' 31.58"
6	Longitude	E 78° 18' 42.34" to E 78° 18' 44.07"
7	Topography	Plain terrain
8	Site Elevation above MSL	≃478 m
9	Topo sheet No.	57-L/7
10	Minerals of Mine	Grey Granite
11	Proposed production of Min	Proposed capacity of Grey Granite: 10240 m^3
12	Ultimate depth of Mining	15 m below ground level
13	Method of Mining	Open cast, semi-mechanized mining
14	Water demand	2.08 KLD
15	Source of water	Water will be supplied through tankers supply
16	Man power	Direct :10 nos, Indirect :14 nos

17	Mining Lease	Precise Area Communication Letter obtained from vide G.O.(3D) No.31, Industries (MME.2) Department dated 22.02.2016 for a period of twenty years
18	Mining Plan Approval	First Scheme of Mining plan was approved by Commissionerate of Geology and Mining, Guindy vide Letter Rc.No. 0489/MM4/2021 dated 12.02.2021
19	Production details	Geological reserves of Grey Granite : 3,82,992 m^3 Proposed year wise recoverable reserves of Grey Granite : 10,240 m^3
20	Boundary Fencing	7.5m barrier all along the boundary, Fencing will be provided.
21	Disposal of overburden	The top soil of the lease area is nil. Grey Granite waste forms nearly 60% of ROM and the quantity of waste in the five years will be around 15360m3. Granite Waste will be dumped in the Western side of the lease area for the next five years.
22	Ground water	The quarry operation is proposed up to a depth of **15m** below ground level. The water table is below **42-48m** from ground level which is observed from the nearby open wells and bore wells. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire lease period.
23	Habitations within 500m radius of the Project Site	There is no Habitation within 500m radius of the project site.
24	Drinking water	Water will be supplied through tankers from Balinayanapalli Village which is 1.0 km from the project site.

11.3 Justification of the proposed project

The said project plays a significant role in the domestic as well as infrastructural market. To achieve a huge infrastructure being envisaged by Government of India, particularly in road and housing sector, there is a need for basic building materials. The granite form the primary building material.

Grey Granite is one of the most valuable natural building materials. Aggregates are mostly used for building roads and footpaths. Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction. Mostly used in roads, concrete and building products. Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of asphalt; the remainder is used 'dry' without the addition of other materials to provide a sturdy base for roads.

Since Krishnagiri, a city known for its small-scale industries and also the soil in the area near project site is not very fertile making it unsuitable for carrying out agricultural activities. The topography near the lease area is barren dry lands showing only less chance for crop growth and development of vegetation. In addition to that, geological reserves of granite is abundant in the lease area which is evident from the mine activities carried out in the nearby sites.

Table 11-2: Anticipate Impacts & Appropriate Mitigation Measures

S. No.	Potential Impact	Mitigation Measure
1	The main impact in the air environment is dust emission during various mining activities such drilling, blasting, excavation, loading and transportation. The dust emission may affect the quality of ambient air in the and around the mine area. The increased emission may cause respiratory & Cardiovascular problems in human health	Proper mitigation measures like water sprinkling on haul roads will be adopted to control dust emissions. To control the emissions regular preventive maintenance of equipments will be carried out on contractual basis. Plantation will be carried out along approach roads & mine premises.
2	Waste water will be generated due to mining activity and from other domestic activities. These may contaminate the ground water leading to ground water. The mining activity may affect the ground water table	No waste water will be generated from the mining activity of minor minerals as the project only involves lifting of over burden from mine site. The wastewater generated from the domestic activity will

		be disposed off safely through the proposed septic tank. Mining will not intersect ground water table. Hence the water table will not be impacted due to the proposed project
3	Noise will be generated in the mine area during various mining activities such as blasting, drilling, excavation. During transportation of the mined out mineral, there may be noise generation due to the movement of vehicles. This may impact the health condition of the workers by creating headache	Periodical monitoring of noise will be done. No other equipments except the transportation vehicles and Excavator (as & when required) for loading will be allowed at site. Noise generated by these equipments shall be intermittent and does not cause much adverse impact. Plantation will be carried out along approach roads. The plantation minimizes propagation of noise and also arrest dust.
4	Solid waste will be generated from the mining activity as there will be refuse after 95% recovery and also generation of domestic waste	The 100% recovery is achieved by extracting the entire mineable reserve. Hence there will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.
5	During mining activities, there are chances of workers getting health issues or may be prone to accidents	Dust masks will be provided as additional personal protection

		equipment to the workers working in the dust prone area. Periodical trainings will be conducted to create awareness about the occupational health hazards due to activities like blasting, drilling, excavation Workers health related problem if any, will be properly addressed.

12. Disclosure of Consultant

12.1 Introduction

This chapter presents the details of the environmental consultants engaged, their background and the brief description of the key personnel involved in the project. Specific studies on the mining project have been carried out by engaging engineers/experts of Ecotech Labs Pvt. Ltd, Chennai. Ecotech Labs Pvt. Ltd (ETL), Chennai is NABET accredited consultancy organization. ETL is equipped with in-house, spacious laboratory, accredited by NABL (National Accreditation Board for Testing & Calibration Laboratories), Department of Science & Technology, Government of India and MoEF & CC.

12.2 Eco Tech Labs Pvt. Ltd – Environment Consultant

Eco Tech Labs Pvt. Ltd is a multi-disciplinary testing and research laboratory in India. Eco Tech labs provides high quality services in environmental consultancy, engineering solution, chemical and microbiological laboratory analysis of food, water and environment (Air, Water, Soil) with highest accuracy.

12.2.1 The Quality policy

- We, at Eco Tech Labs Pvt. Ltd. engaged in providing Environmental consulting services and we are committed to strengthen our capabilities in all areas of our operations in line with customer requirements &expectations, applicable legal requirements & stakeholders expectations.
- We are committed to establish and maintain Quality Management System (QMS) for continual improvement in processes and Services
- We are committed to provide customized solutions in realistic, time bound and cost effective to achieve highest degree of customer satisfaction and Environmental improvement.
- We shall establish, maintain & periodically review our documented management systems, objectives and performance in consultation with our employees and prevailing best practices.
- Effective communication of organization's policy and objectives to employees and seeking feedbacks from all our employees and concerned stakeholders for continual improvement.

ANNEXURE-I

STANDARD TOR CONDITIONS WITH ADDITIONAL TOR POINTS

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

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

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.8965/SEAC/ToR-1133/2021 Dated:25.03.2022

To

Thiru.S.Venkatesan
S/o.Subban
No.26/1, CB Road,Bargur Post
Krishnagiri Taluk
Krishnagiri District-635104

Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with Public Hearing (ToR) for the Proposed Grey Granite quarry lease over an extent of 3.22.0 Ha at S.F.No. 9(part) of Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District, Tamil Nadu by Thiru. S. Venkatesan - 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/ 71690 /2021, dated: 31.01.2022
2. Your application seeking Terms of Reference submitted on: 01.02.2022
3. Minutes of the 252nd meeting of SEAC held on 10.03.2022, minutes received on 19.03.2022
4. Minutes of the 496th meeting of SEIAA held on 24.03.2022.

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

The proponent, Thiru.S.Venkatesan has submitted application seeking ToR for B1 category project in Form-I, for the Proposed Grey Granite quarry lease over an extent of 3.22.0 Ha at S.F.No. 9(part) of Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District, Tamil Nadu and has furnished Pre-feasibility report.

MEMBER SECRETARY
SEIAA-TN

Discussion by SEAC and the Remarks:-

The proposal was placed in 252nd SEAC meeting held on 10.03.2022. The details of the project furnished by the proponent are given in the website (parivesh.nic.in).

The SEAC noted the following:

1. The Project Proponent, Thiru. S. Venkatesan has applied for Terms for Reference for the proposed Grey Granite quarry lease over an extent of 3.22.0 Ha at S.F.No. 9(part) of Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District, Tamil Nadu .
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. The Production for the five years states that total quantity should not exceed 10,240 m^3 of Grey granite (Recovery @40%) with a ultimate depth of mining is 15m below ground level.

Based on the presentation made by the proponent and the documents furnished, SEAC decided to **recommend the proposal for the grant of Terms of Reference (TOR) with Public Hearing** for the total Production for the period of five years states that total quantity should not exceed 10,240 m^3 of Grey granite (Recovery @40%) with a ultimate depth of mining is 15m below ground level, Subject to the following TORs in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC to be included in EIA/EMP Report:

1. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
    a) What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
    b) Quantity of minerals mined out.
    c) Highest production achieved in any one year
    d) Detail of approved depth of mining.
    e) Actual depth of the mining achieved earlier.
    f) Name of the person already mined in that leases area.
    g) If EC and CTO already obtained, the copy of the same shall be submitted.
    h) Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
2. 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).

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3. The project proponent shall furnish certified EC compliance report along with photographs of fencing and green belt provided to the site in respect of previous EC.
4. 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.
5. 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.
6. 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.
7. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
8. 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.
9. 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 air pollution, water pollution, & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
10. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
11. Issues relating to Mine Safety, including slope geometry in case of Granite quarrying, blasting parameters etc. should be detailed. The proposed safeguard measures in each case should also be provided.
12. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife

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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.

13. 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.
14. Since non-saleable waste /OB / intermediate waste etc. is huge in the granite quarry, the Proponent shall provide the details pertaining to management of the above material with year wise utilization and average moving inventory be submitted.
15. 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.
16. 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.
17. Impact on local transport infrastructure due to the Project should be indicated.
18. 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.
19. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
20. Public Hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.
21. The recommendation for the issue of "Terms of Reference" is subjected to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A No.186 of 2016 (M.A.No.350/2016) and O.A. No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No. 758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No.12/2017 & M.A. No. 843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No. 981/2016, M.A.No.982/2016 & M.A.No.384/2017).

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22. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the **appendix** in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
23. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper spacing as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner.
24. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
25. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.
26. 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.
27. 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.
28. 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.
29. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
30. 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.
31. 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

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MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.

32. The PP shall use drone video to cover the cluster area showing clearly the extent of operation and the surrounding environment and submit the video as part of EIA report.
33. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.

Appendix

List of Native Trees for Planting

1. Aegle marmelos – Vilvam
2. Adenaanthera pavonina - Manjadi
3. Albizia lebbeck – Vaagai
4. Albizia amara - Usil
5. Bauhinia purpurea - Mantharai
6. Bauhinia racemosa - Aathi
7. Bauhinia tomentosa – Iruvathi
8. Buchanania aillaris - Kattuma
9. Borassus flabellifer - Panai
10. Butea monosperma - Murukka maram
11. Bobax ceiba – Ilavu, Sevvilavu
12. Calophyllum inophyllum - Punnai
13. Cassia fistula - Sarakondrai
14. Cassia roxburghii- Sengondrai
15. Chloroxylon sweitenia - Purasa maram
16. Cochlospermum religiosum – Kongu, Manjal Ilavu
17. Cordia dichotoma – Mookuchali maram
18. Creteva adansonii – Mavalingum
19. Dillenia indica – Uva, Uzha
20. Dillenia pentagyna – Siru Uva, Sitruzha
21. Diospyros ebenum - Karungali
22. Diospyros chloroxylon – Vaganai
23. Ficus amplissima – Kal Itchi
24. Hibiscus tiliaceous – Aatru poovarasu
25. Hardwickia binata – Aacha

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

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59. Walsura trifoliata – valsura
60. Wrightia tinctoria - Vep

Discussion by SEIAA and the Remarks:-

The subject was placed in the 496th Authority meeting held on 24.03.2022. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant Terms of Reference (ToR) along with Public Hearing under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal condition in addition to the following conditions:

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

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11. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.
12. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.
13. The project proponent shall study and furnish the impact of project on plantations in adjoing patta lands, Horticulture, Agriculture and livestock.
14. The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.
15. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
16. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.
17. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
18. The project proponent shall study on impact of different pathways and migration.
19. The project proponent shall detailed study on impact of water bodies like, Modikuppam Lake 4km, Marudepalli Lake 4.5 km, Thogarapallai RF – 3.5 km.

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

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features of the study area (core and buffer zone).

5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.

6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.

7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.

12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to

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ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized

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agencies demarcating LTL. HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should
be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

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25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.

31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be

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included in the EIA Report.

34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed:-

a) Executive Summary of the EIA/EMP Report

b) All documents to be properly referenced with index and continuous page numbering.

c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

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d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.

e) Where the documents provided are in a language other than English, an English translation should be provided.

f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

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

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells

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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 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

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

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

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

MEMBER SECRETARY
SEIAA-TN

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

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

MEMBER SECRETARY
SEIAA-TN

Copy to:

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

COMPLIANCE OF TOR CONDITIONS

Point wise compliance of TOR points issued by SEIAA, TN vide letter No. SEIAA-TN/F.No.8965/ SEAC/TOR-1133/2021, dated 25.03.2022 for Mining of Minor Minerals in the Mine of "Proposed Grey Granite Quarry" over an Extent of 3.22.0 Ha in S.F No. 9 (Part) of Jagadevipalayam Village, Bargur taluk (formerly Krishnagiri Taluk), Krishnagiri District, Tamil Nadu State.

<table>
<tr><th>ToR Ref.</th><th>Description</th><th>Response</th><th>Page Ref. in EIA Report</th></tr>
<tr><td>1</td><td>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.</td><td>This is a proposed Grey Granite Quarry

The proponent has obtained Precise area communication letter for quarrying granite vide G.O.(3D) No.31 Industries (MME.2) Department dated 22.02.2016 for a period of twenty years and the lease deed was executed on 04.03.2016. Mining operations commenced on 01.04.2016 and the lease will expire on 03.03.2036
Scheme of Mining plan was approved by Commissionerate of Geology and Mining, Guindy vide letter R.c.No.0489/MM4/2021 dated 12.02.2021
Proposed Production of Grey Granite for five years is included in the EIA/EMP report in chapter no-2.

<table>
<tr><th>Year</th><th>Grey Granite Volume (m^3)</th></tr>
<tr><td>I-Year</td><td>2080</td></tr>
<tr><td>II-Year</td><td>2004</td></tr>
<tr><td>III-Year</td><td>2052</td></tr>
<tr><td>IV-Year</td><td>2052</td></tr>
<tr><td>V-Year</td><td>2052</td></tr>
</table>
</td><td>Annexure-II & Annexure - IV

Chapter-2</td></tr>
</table>

2.	A copy of document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	The mine lease area of 3.22.0 hectare in Jagadevipalayam Village for Grey Granite Quarry Commissionerate of Geology and Mining, Guindy vide letter R.c.No.0489/MM4/2021 dated 12.02.2021	Annexure-II
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 and mining technology and should be in the name of the lessee.	All the documents i.e., Mining Plan, EIA and Public hearing are compatible with each other in terms of ML area production levels, waste generation and its management and mining technology are compatible with one another. The mining plan of the project site has been submitted to The Assistant Director (i/c), Department of Geology and Mining, Krishnagiri District.	Annexure-II and Annexure-IV
4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet 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).	Details of coordinates of all corner of proposed mining lease area have been incorporated in Chapter 2 of EIA/ EMP Report.	Chapter-2, Table no. 2.2 Page. No. 39
5	Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, important water bodies, streams and rivers and soil characteristics	Topo map as attached in Chapter-2	Chapter-2, Fig no. 2.4 Page. No. 43
6.	Details about the land proposed for mining activities should be given with information as to whether 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	Details about the land proposed for mining activities should be given in Chapter 2.	Chapter-2 Table 2.4 Page 45

7	It should be clearly stated whether the proponent company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large may also be detailed in the EIA report.	Noted.	
8	Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.	It is an open cast mining project. Blasting details are incorporated in chapter-2	Chapter-2, Section 2.7.4 Page no.56
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.	Study area comprises of 10 km radius from the mine lease boundary. Key Plan showing core zone (ML area).	Chapter-2 Fig no. 2.5 Page no.44

10	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	Land Use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, National park, migratory routes of fauna, water bodies, human settlements and other ecological features has been prepared and incorporated in Chapter-4 of EIA/ EMP Report. There is no wildlife sanctuary and national park, migratory routes of fauna in the study area.	Chapter-2, Table no. 2.2 Page no.39
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.	The Top soil of the lease area is Nil for the next five years. Grey Granite waste forms nearly 60% of ROM and the quantity of waste in the five years will be around 15360 m^3. Granite Waste will be dumped in the Western side of the lease area for the next five years.	Chapter-2, Page no.40

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.	The proposed mining lease area is not falling under forest land.	-

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.	The proposed mining lease area is not falling under forest land.	-
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. There is no involvement of forest land in the project area.	-
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	Details of flora have been discussed in Chapter-3 of the EIA/EMP Report.	Chapter-3
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.	There is a relatively poor sighting of animals in the core and buffer areas of the mining lease. No significant impact is anticipated.	-
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, 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, Tiger/Elephant Reserves/Critically Polluted areas within 10 km radius of the mining lease area.	-

	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, 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 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.	Detail biological study (flora & fauna) within 10 km radius of the project site have been incorporated in Chapter-3 of EIA/ EMP Report. No flora & fauna listed in scheduled-I have been found in study area so there is no need of conservation plan. However, all care will be taken for protection of flora & fauna, if any in the lease hold area.	Chapter-3
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 Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.	The proposed mining lease area is not falling under forest land.	-

20	Similarly, for coastal projects, A CRZ map duly authenticated by one of the authorized agencies 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)	There is no Coastal Zone within 15km radius of the project site.	-
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 located in the mine lease area will be shifted or not. The issues relating to shifting of Village including their R&R and socio-economic aspects should be discussed in the report.	There is no Rehabilitation and resettlement is involved. Land classified as Patta land.	-

22	One season (non-monsoon)and (Summar Season),(Post monsoon) primary baseline data on ambient air quality 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.	Baseline data collected during March to June 2022 has been incorporated in EIA/EMP report. The key plan of monitoring station has been discussed in Chapter-3. Locations of the monitoring stations have been selected keeping in view the pre- dominant downwind direction and location of the sensitive receptors and also that they represent whole of the study area.	Chapter 4

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 predominant wind direction may also be indicated on the map.	Air quality modeling & Impact of Air quality will be incorporated in final EIA report. Transportation of mineral during operation of mines will be done by road & NH-77 through dumpers and the impact of movement of vehicles are incorporated in Draft EIA/EMP report.	Chapter-5
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	Total water requirement: 1.08 KLD Dust Suppression: 0.5 KLD Domestic Purpose: 0.5 KLD Plantation : 2.08 KLD Domestic Water will be sourced from nearby Balinayanapalli village and other water will be sourced from nearby road tankers supply	Chapter-2 Page no.58
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Not Applicable Water will be taken from nearby villages.	-

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 last stage of mining operation, almost complete area will be worked to restore the land to its optimum reclamation for future use as water reservoir.	-
27	Impact of the project on the water quality, both surface and groundwater should be assessed and necessary safeguard measures, if any required, should be provided.	Impact of the project on the water quality & its mitigation measures has been incorporated in Chapter-4 of EIA/EMP report.	Chapter-4
28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. 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.	Maximum working depth: 15 m BGL The ground water table is reported as 42-48m below surface ground level in nearby wells of this area. Now, the present quarry shall be proposed above the water table and hence quarrying may not affect the ground water so mine working will not be intersecting the ground water table.	Chapter-2
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 any stream crossing in the proposed quarry	Executive Summary

30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	Highest elevation: 478m AMSL Ultimate Depth of mining : 15 m BGL Ground Water Table : 42-48m BGL	Chapter-2 Table no. 2.2
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 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 pollution	Green Belt Development plan has been given in Chapter 2.	Chapter-2 Section 2.14
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	Impact on local transport infrastructure due to the project has been assessed. There shall not be much impact on local transport. Traffic density from the proposed mining activity has been incorporated in Draft EIA/EMP report.	Chapter-3

	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.	Adequate infrastructure & other facilities shall be provided to the mine workers. Details are given in chapter-2 of EIA/EMP	Chapter-2
34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	Conceptual post mining land use and Reclamation and restoration sectional plates are given in Scheme of Mining Plan.	Mining Plan with plates Annexure-4
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 in the mining area may be detailed	Suitable measure will be adopted to minimize occupational health impacts of the project. The project shall have positive impact on local environment. Details are given in chapter-7 of Draft EIA/EMP.	Chapter-7

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.	Suitable measure will be adopted to minimize occupational health impacts of the project.	Chapter-7
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.	CSR Activity Affidavit Earlier submitted to SEIAA. The details are incorporated in the Draft EIA/EMP report.	Executive Summary
38	Detailed environmental management plan 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.	Environment Management Plan has been described in detail in Chapter-10 of the Draft EIA/EMP Report.	Chapter-10 Page-141
39	Public hearing points raised and commitment of the project proponent on the same along with time bound action plan to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.	Public Hearing proceedings will be furnished in Final EIA report.	-
40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the project should be given.	Not applicable No. litigation is pending against the project in any court.	-

<table>
<tr><td>41</td><td>The cost of the project (capital cost and recurring cost) as well as the cost towards implementation of EMP should clearly be spelt out.</td><td><table><tr><th>S.No.</th><th>Description</th><th>Cost</th></tr><tr><td>1</td><td>Fixed Asset</td><td>38,50,000</td></tr><tr><td>2</td><td>Operational Cost</td><td>95,00,000</td></tr><tr><td>3</td><td>EMP Cost</td><td>3,80,000</td></tr><tr><td></td><td>Total</td><td>1,37,30,000</td></tr></table></td><td>Chapter-8 Section 8.3</td></tr>
<tr><td>42</td><td>A Disaster Management Plan shall be prepared and included in the EIA/EMP Report.</td><td>Disaster Management and Risk Assessment Plan has been incorporated in Chapter-7</td><td>Chapter-7</td></tr>
<tr><td>43</td><td>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.</td><td>Benefits of the project has been incorporated in the Chapter 8 of the Draft EIA Report.</td><td>Chapter-8</td></tr>
<tr><td>44</td><td colspan="3">Besides the above, the below mentioned general points are also to be followed:</td></tr>
<tr><td>(a)</td><td>Executive Summary of the EIA/EMP report</td><td>Executive Summary of EIA Report is given from page No.15-36</td><td></td></tr>
<tr><td>(b)</td><td>All documents to be properly referenced with index and continuous page numbering.</td><td>Complied</td><td></td></tr>
<tr><td>I</td><td>Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.</td><td>Complied</td><td></td></tr>
<tr><td>(d)</td><td>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.</td><td>Complied</td><td></td></tr>
</table>

I	Where the documents provided are in a language other than English, an English translation should be provided.	Complied	
(f)	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	The complete questionnaire has been prepared.	
(g)	While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF 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.	The EIA report has been prepared and complying with the circular issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009.	
(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 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	There are no changes in prepared EIA as per submitted Form-1 & PFR.	
(i)	As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report on 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 & Forests, if applicable.	Will be complied after grant environment clearance from SEIAA, Tamilnadu.	

(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 (iii) sections of mine pit and external dumps, if any clearly showing the features of the adjoining area.	All Sectional Plates of Quarry is enclosed in Mining Plan.	

Additional ToR Compliance

S.No.	Condition	Compliance
1.	If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines, a) What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? b) Quantity of minerals mined out. c) Highest production achieved in any one year d) Detail of approved depth of mining. e) Actual depth of the mining achieved earlier. f) Name of the person already mined in that leases area. g) If EC and CTO already obtained, the copy of the same shall be submitted. h) Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	It is an existing quarry and the lease period was granted for 04.03.2016 to 03.03.2036. The last transport permit was issued on 13.2.2020. 500m radius letter attached as Annexure 3. All other details will be incorporated in the final EIA report.
2.	All corner coordinates of the mine lease area, superimposed on 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).	All maps have been provided in chapter 2 and chapter 3 of Draft EIA report.
3.	The project proponent shall furnish certified EC compliance report along with photographs of fencing and greenbelt provided to the site in respect of previous EC.	We are in the processing of obtaining Certified EC Compliance report from MoEF. Once obtained the same will be submitted in the final EIA report.
4.	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	It is an existing quarry, fencing and green belt photos will be attached along with Final EIA report.

	mining plan.	
5.	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same.	The geological reserves, mineable reserves and Yearwise production details has been discussed in Chapter 2 The anticipated impacts due to mining operations carried out in the quarry cluster and its mitigation measures have been incorporated in Chapter 4 of Draft EIA Report.
6.	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 Organization chart has been discussed in Chapter 2 of the Draft EIA Report.
7.	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD/ TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.	The hydro-geological study will be conducted and submitted in Final EIA report.
8.	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 about surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study have been incorporated in Chapter 3 of the Draft EIA report.

9.	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 air pollution, water pollution & health impacts. Accordingly, the Environment Management Plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	Noted and the details will be incorporated in the Final EIA Report.
10.	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	This is proposed grey granite quarry with a proposed depth of 15m BGL. After the lease period the part of the working pit will be converted into the rain water recharging pit and the collected rain water will be used for greenbelt development and serve as a water reservoir for the nearby village.
11.	Issues relating to Mine Safety, including slope geometry in case of Granite quarrying, blasting parameters etc. should be detailed. The proposed safeguard measures in each case should also be provided.	This is an Opencast Semi Mechanized mining method. In addition to that diamond wire saw cutting method will be adopted. The proposed quarrying activity has been done upto a depth of 15m BGL. Quarrying activities will be carried out under the supervision of competent persons like Mines Manager, Mines Foreman, Skilled, Semi-skilled persons and labours. Necessary permissions will be obtained from DGMS after obtaining environmental clearance.
12.	Land use of the study are delineating forest area, agricultural land, grazing land, wildlife sanctuary, national part, 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 and post operational phases and submitted. Impact, if	All the details Land Use and land cover pattern of the study area has been discussed in the Chapter 3 of the Draft EIA report.

	any, of change of land use should be given.	
13.	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	The top soil of the lease area is nil. Grey Granite waste forms nearly 60% of ROM and the quantity of waste in the five years will be around 15360m3. Granite Waste will be dumped in the Western side of the lease area for the next five years.
14.	Since non-saleable waste/OB/intermediate waste etc. is huge in the granite quarry, the Proponent shall provide the details pertaining to management of the above material with year wise utilization and average moving inventory be submitted.	The top soil of the lease area is nil. Grey Granite waste forms nearly 60% of ROM and the quantity of waste in the five years will be around 15360m3. Granite Waste will be dumped in the Western side of the lease area for the next five years.
15.	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	Not Applicable. The proposed project area does not comes under Critically Polluted Area.
16.	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.	This is proposed grey granite quarry with a proposed depth of 15m BGL. After the lease period the part of the working pit will be converted into the rain water recharging pit and the collected rain water will be used for greenbelt development and serve as a water reservoir for the nearby village.
17.	Impact on local transport infrastructure due to the Project should be indicated.	Traffic study was carried out to analyse the impact of transportation in the proposed project area as per IRC guidelines and it is inferred that there is no significant impact arises due to the proposed transportation from the project area. The traffic

		study details have been incorporated in the Chapter 3 of the Draft EIA Report.
18.	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.	Noted and Agreed to comply. Further, the green belt development proposal has been discussed in the Chapter 2 of the Draft EIA report.
19.	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Mine closure plan has been attached along with mining plates as Annexure VI.
20.	Public hearing points raised and commitments 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 and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF&CC accordingly.	Noted and the same will be incorporated in the final EIA report after public hearing meeting.
21.	The recommendation for the issue of "Terms of Reference" is subjected to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.A No.186 of 2016 (M.A.No.350/2016) and O.A. No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No.758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No:12/2017 & M.A. No. 843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017).	Noted.
22.	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix in consultation with the DFO, State Agriculture University and local school/college	Around 400 tress like Casuarina and Pungan will be planted around the site.

	authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	
23.	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper escapement as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner.	The green belt plan is enclosed along with mining plates in Annexure IV
24.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	A Disaster management Plan details has been incorporated in the Chapter 7 of the Draft EIA report.
25.	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report.	A Risk Assessment and management Plan details has been incorporated in the Chapter 7 of the Draft EIA report.
26.	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational health impacts of the project and preventive measures have been incorporated in the Chapter 7 of the Draft EIA report.
27.	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	No public health implications are anticipated due to this project. Details of CER has been incorporated in the Executive Summary and Chapter 8 of the Draft EIA report.
28.	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	The socio-economic study has been carried out and discussed in chapter 3 of the Draft EIA report.

	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.	
29.	Details of litigation pending against the project, if any, with direction/order passed by any Court of Law against the Project should be given.	No litigation is pending in any court against this project.
30.	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 project benefits have been discussed in the Chapter 8 of the Draft EIA report.
31.	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.	We are in the processing of obtaining Certified EC Compliance report from MOEF and once obtained the same will be submitted along with the final EIA report.
32.	The PP shall use drone video to cover the cluster area showing clearly the extent of operation and the surrounding environment and submit the video as part of EIA report.	Noted. The drone video to cover the cluster area showing clearly the extent of operation and the surrounding environment will be submitted along with the final EIA report.
33.	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Reference besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted.
	SEIAA RECOMMENDATIONS	
34.	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.	Noted.

35.	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 emission details have been discussed in the Chapter 4 of the Draft EIA report.
36.	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 ecological details have been discussed in the Chapter 3 of the Draft EIA report.
37.	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted and Agreed to comply.
38.	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	Noted and Agreed to comply.
39.	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	All the data's regarding soil were collected and the details have been discussed in the Chapter 3 of the Draft EIA report.
40.	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	The Biodiversity study has been conducted and the details has been incorporated in the Chapter 3 of the Draft EIA report.
41.	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Noted and Agreed to comply.
42.	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Noted and the details of the water bodies have been incorporated in the Chapter 3 of the Draft EIA report.
43.	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 EMP details have been discussed in the Chapter 8 of the Draft EIA report.
44.	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil	Noted and Agreed to comply.

	carbon stock.	
45.	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	Noted and Agreed. We kindly inform that there is no protected areas such as Reserve Forests, National Parks, Wildlife Corridors around 1 km radius from the proposed project site.
46.	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	Noted and Agreed.
47.	The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.	Noted and Agreed.
48.	The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.	Noted and Agreed.
49.	The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	Noted and Agreed.
50.	The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.	Noted and Agreed. We kindly inform that there is no protected areas such as Reserve Forests around 1 km radius from the proposed project site.
51.	The project proponent shall study on impact of different pathways and migration.	Noted and Agreed.
52.	The project proponent shall detailed study on impact of water bodies like, Modikuppam Lake 4km Marudepalli Lake 4.5 km, Thogarapallai RF-3.5 km.	Noted. The study details will be incorporated in the final EIA report.

ANNEXURE-II

SCHEME OF MINING PLAN

APPROVAL LETTER

COMMISSIONERATE OF GEOLOGY AND MINING

From
Dr.L.Subramanian, I.A.S.,
Commissioner,
Commissionerate of Geology and Mining,
Guindy, Chennai-32.

To
Thiru.S.Venkatesan,
S/o. Subban,
No.26/1, CB Road,
Bargur Post,
Krishnagiri taluk,
Krishnagiri District-635104.

Rc.No.0489/MM4/2021 dated: 12.02.2021

Sir,

Sub: Mines and Minerals - Minor mineral - Grey Granite - Krishnagiri - Bargur taluk (formerly Krishnagiri taluk) - Jagadevipalayam village - over an extent of 3.22.0 ha of Patta land - S.F.No.9(Part) - Quarry lease granted to Thiru.S.Venkatesan, Krishnagiri - Submission of 1st Scheme of Mining for the period 2021-22 to 2025-26 - Recommended and forwarded by the Assistant Director(i/c) (G&M), Krishnagiri - Approval accorded.

Ref:
1. Mining plan approved by the Commissioner of Geology and Mining in letter No.5273/MM5/2015 dated:06.01.2016.
2. G.O. (3D) No.31, Industries (MME.2) Department, dated.22.02.2016.
3. First Scheme of mining submitted by Thiru.S.Venkatesan at district office dated 29.10.2020.
4. The Assistant Director(i/c), Geology and Mining, Krishnagiri District Lr.Rc.No.1097/2020/Mines, dated.09.12.2020.

*****

Kind attention is invited to the references cited.

2) In the reference 3rd cited, the lessee Thiru.S.Venkatesan, Krishnagiri has submitted first Scheme of Mining for approval for the quarry lease granted under G.O. (3D) No.31, Industries (MME.2) Department, dated:22.02.2016 for quarrying Grey Granite over an extent of 3.22.0 ha of Patta land in S.F.No.9(Part) in Jagadevipalayam village, Bargur taluk (formerly Krishnagiri taluk),

Krishnagiri district. The period of quarry lease is from 04.03.2016 to 03.03.2036.

3) The Assistant Director (i/c) (G&M), Krishnagiri district in the reference 4th cited has recommended for the approval of first scheme of Mining prepared for the period from 2021-22 to 2025-26.

4) Based on the recommendation of the Assistant Director(i/c) (G&M), Krishnagiri district and in exercise of the powers conferred under Rule, 18(4) of Granite Conservation and Development Rules, 1999 read with G.O. (Ms) No.87, Industries (MMC.1) Department dated 22.02.2001, the first Scheme of Mining for the period 2021-22 to 2025-26 submitted by Thiru.S.Venkatesan is approved subject to the following conditions in addition to the conditions stipulated in Government Order under reference 2nd cited:

i. This first Scheme of Mining 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 first Scheme of Mining (including progressive mine closure 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 law including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1986, 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. This first Scheme of Mining including progressive mine closure plan is approved without prejudice to any other

order or direction from any court of competent jurisdiction.

iv. Provisions of the Mines Act, 1952 and the Rules and Regulations made there under including submission of notice of opening, appointment of manager and other statutory officials as required under Mines Act, 1952 shall be complied with.

v. Provisions made under Mines and Minerals (Development & Regulation) Act, 1957, MMDR Amendment Act, 2015 and Granite Conservation and Development Rules, 1999 made there under shall be complied with.

vi. This approval of first Scheme of Mining is restricted to the mining lease area only. The mining lease area is as shown on the statutory plan under Granite Conservation and Development Rules, 1999. The Directorate of Geology and Mining does not take any responsibility regarding correctness of the boundaries of the lease shown on the ground with reference to the lease map and other plans furnished by the lessee.

vii. If anything is found to be concealed as required by the Granite Conservation and Development Rules, 1999 and Tamil Nadu Minor Mineral Concession Rules, 1959 and proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.

viii. Relaxation to be obtained under Rule 106(2)(b) of Metalliferous Mines Regulations, 1961 from the Director of Mines Safety, if necessary.

ix. The lessee should obtain environmental clearance from the appropriate authority.

x. This first Scheme of Mining is approved for the proposal contained therein and is applicable from the date of

approval of the document for the quarrying activities to be carried out within the leasehold area.

xi. The earlier instances of irregular / illegal quarrying, if any, shall not be regularized through the approval of this document.

xii. The lessee shall remit the penalty / cost of mineral / other dues if any as arrived by the District Collector / Assistant Director (I/c) (G&M), Krishnagiri district.

xiii. The quarry labourers shall be registered with the Labour Board and shall be enrolled under the Insurance Scheme.

xiv. Non adherence to any condition set-out above, the approval shall be deemed to have been withdrawn with immediate effect.

Encl: Approved First Scheme of Mining.

Sd/- L.Subramanian
Commissioner of Geology and Mining

Forwarded / By Order

Joint Director

12/5/21

Copy to:

1. The Principal Secretary to Government,
   Industries Department,
   Secretariat, Chennai-9.
2. The Director of Mines Safety,
   Lapis Lagoon, AA Block,
   New No.05, (Old No.46), 2nd street,
   Shanthi Colony, Anna Nagar,
   Chennai - 40.
3. The District Collector,
   Krishnagiri.

ANNEXURE-III

500M Radius letter

From
Thiru L.Suresh, M.Sc.,
Assistant Director,
Additional Charge,
Dept of Geology and Mining,
Collectorae, Krishnagiri.

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

Roc. 1166/2020 /Mines dated .12.2020

Sir,

Sub: Mines and Minerals – Krishnagiri District – Colour Granite – Krishnagiri District – Krishnagiri (Now Bargur) Taluk – Jagadevipalayam Village – Patta land S.F Nos. 9 (part) – Over an extent of 3.22.0 Hec. Colour Granite quarry lease granted to Thiru S. Venkatesan, S/o Subbam, No. 26/1 C.B. Road, Bargur Post, Bargur Taluk Krishnagiri & Dist. - Details of quarries situated within 500 mts radial distance – requested by the applicant to submit scheme of Mining – Details furnished - reg.

Ref: 1 The Gazette of India, Ministry of Environment Forest and Climate change Notification, New Delhi dt 01.07.2016.
2. G.O (3D) No. 31 Ind (MME-2) Dept. dt 22.2.2016.
3. Thiru S. Venkatesan, S/o Subbam, No. 26/1 C.B. Road, Bargur Post, Bargur Taluk Krishnagiri & Dist.. letter dated 30.11.2020

I am to invite kind attention to the reference cited.

Thiru S. Venkatesan, S/o Subbam, No. 26/1 C.B. Road, Bargur Post, Bargur Taluk Krishnagiri & Dist. had preferred a quarry lease application for the Colour Granite over an extent of 3.22.0 Hect. in patta land S.F Nos. 9 (part) of Jagadevipalayam Village Krishnagiri (Now Bargur) Taluk Krishnagiri District for a period of 20 years under the provisions of Rule 19 (A) of Tamil Nadu Minor Mineral Concession Rule 1959 and lease had been granted vide the reference 2nd cited. The lease deed was executed on 04.03.2016 and the lease period is 20 years from 04.03.2016 to 03.03.2036.

In the reference 3rd cited, the lessee had requested to issue the details of the quarries situated within the radial distance of 500 mts from the said quarry in order to submit scheme of mining.

In the reference 1st cited, The Ministry of Environment Forest and Climate Change Notification, New Delhi dt 01.07.2016, the following instruction was given.

The leases not operative for three years or more and leases which have got environmental clearance as on 15th January, 2016 shall not be counted for calculating the area of cluster, but shall be included in the Environmental Management plan and the Regional Environmental Management plan.

As requested by the lessee and based on the above said MOEF notification the details of quarries situated within 500 mts Radial distance from the said quarry are furnished as follow:

Details of Existing quarries.

Sl N	Name of the lessee	Village & Taluk	S.F No.	Extent in Het	GO No.& Date	Lease period.	Last permit issued date
1	Thiru S. Venkatesan, S/o Subbam, No. 26/1 C.B. Road, Bargur Post, Bargur Taluk Krishnagiri dis.	Jagadevi palayam Bargur	9 (Part)	3.22.0	G.O (3D) No. 31 Ind (MME-2) Dept. dt 22.2.2016.	04.03.2016 to 03.03.2036 **Instant Proposal**	13.2.2020
2	Tmt. Mariam Banu, W/o Mir Zasim Ali, No. 1/192 Muslim Masuthi St, Jagadevipalayam Village & Post Krishnagiri Taluk & Dist.	Chendar apalli Krishna giri Taluk	378/3 379/7 379/8	3.90.0	G.O (3D) No. 28 Ind (MME-2) Dept. dt 15.02.2016	01.03.2016 to 29.02.2036	20.3.2020
3	Thiru A.Ameed S/o Abdul Gaffar, Jagadevipalayam Krishnagiri Taluk	Chendar apalli Krishna giri Taluk	377/1 B 378/2 377/2 A 378/1 377/2 B 377/1 A1B 377/1 A2	2.85.5	G.O (3D) No. 25 Ind (MME-2) Dept. dt 15.02.2016	03.03.2016 to 02.03.2036	14.5.2019
			Total	**9.97.5**			

Details of abandoned/Old quarries.

Sl.No.	Name of the lessee	Village	S.F No.	Extent in Het	GO No.& Date	Lease period.
Nil	Nil	Nil	Nil	Nil	Nil	Nil

Details of Proposed quarries

Sl. No.	Name of the lessee	Village & Taluk	S.F No.	Extent in Hect	GO No.& Date	Lease period.
Nil	Nil	Nil	Nil	Nil	Nil	nil

Details of applied area.

Sl. No.	Name of the lessee	Village	S.F No.	Extent in Het	Remarks
	Nil	Nil	Nil	Nil	Nil

Assistant Director,
(Additional Charge),
Geology and Mining,

Copy to

Thiru S. Venkatesan, S/o Subbam, No. 26/1 C.B. Road,
Bargur Post, Bargur Taluk Krishnagiri & Dist.

ANNEXURE-IV

MINING PLAN REPORT & PLATES

SCHEME OF MINING
WITH
PROGRESSIVE MINE CLOSURE PLAN
FOR
GREY GRANITE QUARRY

(Under Rule 18(2) of Granite Conservation and Development Rules, 1999)

EXTENT	:	3.22.0 HA.
S.F. No.	:	9(PART)
VILLAGE	:	JAGADEVIPALAYAM
TALUK	:	KRISHNAGIRI
DISTRICT	:	KRISHNAGIRI
STATE	:	TAMIL NADU

Scheme of Mining Period : 2021-2022 to 2025-2026

LESSEE

THIRU. S. VENKATESAN,
S/o. SUBBAN.
No.26/1, CB ROAD.
BARGUR POST,
KRISHNAGIRI TALUK.
KRISHNAGIRI DISTRICT-635 104.

PREPARED BY :

S. DHANASEKAR, M.SC., M.M.E.A.I.,
RQP/MAS/225/2011/A
VALID UPTO 12.01.2021,
9/3, KULLAPPAN STREET, OPP. INDIAN BANK LINE,
OMALUR POST & TALUK,
SALEM DISTRICT – 636 455.
E-mail: geodhana@yahoo.co.in
CELL: 98946 28970 & 73733-74702.

S. VENKATESAN,
S/o. SUBBAN,

No.26/1, CB ROAD,
BARGUR POST,
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT-635 104.

CONSENT LETTER FROM LESSEE

The Scheme of Mining with Progressive Mine Closure Plan in respect of Grey Granite Quarry over an extent of 3.22.0 Ha. in S.F. No.9(Part) in Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District, Tamil Nadu State has been prepared by **Shri S. DHANASEKAR, M.Sc.,** Recognized Qualified Person (Reg.No.RQP/MAS/225/2011/A).

I request the Commissioner of Geology and Mining, Chennai to make further correspondence regarding modification of the Scheme of Mining with Progressive Mine Closure Plan with the said recognized qualified person in his following Address:

S.DHANASEKAR, M.Sc.,M.M.E.A.I.,
RQP/MAS/225/2011/A
8/3, Kullappan Street,
Opposite Indian bank Line,
Omalur Post & Taluk,
Salem District - 636455.
E-mail: geodhana@yahoo.co.in
Cell: 98946-28970

I hereby undertake that all the modifications, if any, made in the Scheme of Mining with Progressive Mine Closure Plan by the recognized qualified person may be deemed to have been made with our knowledge and consent and shall be acceptable to me and binding on me in all respects.

S. Venkatesan

(S. VENKATESAN.)
Signature of the Lessee

Place: Krishnagiri

Date:

S. VENKATESAN,
S/o. SUBBAN,

No.26/1, CB ROAD,
BARGUR POST,
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT-635 104.

DECLARATION OF THE MINE OWNER

The Scheme of Mining with Progressive Mine Closure Plan in respect of Grey Granite Quarry over an extent of 3.22.0 Ha. in S.F. No.9(PART) in Jagadevipalayam Village, Krishnagiri Taluk , Krishnagiri District, Tamil Nadu State has been prepared in full consultation with us by **Shri S. DHANASEKAR, M.Sc.,** Recognized Qualified Person (Reg.No.RQP/MAS/225/2011/A). I have understood its contents and agree to implement the same in accordance with Laws applicable to mines.

(S. VENKATESAN.)
Signature of the Lessee

Place: Krishnagiri
Date:

S. DHANASEKAR, M.Sc.,
RECOGNISED QUALIFIED PERSON
RQP/MAS/225/2011/A

8/3, KULLAPPAN STREET,
OPP. INDIAN BANK LINE,
OMALUR POST & TALUK,
SALEM DISTRICT - 636 455.
Cell : 98946-28970

CERTIFICATE

The provisions of Granite Conservations and Development Rules, 1999 have been observed in the Scheme of Mining with Progressive Mine Closure Plan for Grey Granite Quarry over an extent of 3.22.0Ha. In S.F. No.9(PART) in Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District, Tamilnadu State and is prepared for Thiru. S. VENKATESAN, S/o. Subban, No.26/1, CB Road, Bargur Post, Krishnagiri Taluk, Krishnagiri District-635 104.

Whenever specific permissions, approvals, exemptions or relaxations are required, the lessee will approach the concerned authorities of Directorate of Geology and Mining, Government of Tamilnadu, Guindy, Chennai for such permissions, exemptions, relaxations and approvals.

It is also certified that the information furnished in the above Scheme of Mining with Progressive Mine Closure Plan are true and correct to the best of our knowledge.

Certified

Signature of Recognized Qualified Person.

Place : Salem

Date :

S. DHANASEKAR, M.Sc.,
RECOGNISED QUALIFIED PERSON
RQP/MAS/225/2011/A

8/3, KULLAPPAN STREET,
OPP. INDIAN BANK LINE,
OMALUR POST & TALUK,
SALEM DISTRICT - 636 455.
Cell : 98946-28970

CERTIFICATE

Certified that provision of Mines Act, Rules and Regulations and orders made there under have been observed in the Scheme of Mining with Progressive Mine Closure Plan for Grey Granite Quarry over an extent of 3.22.0Ha. In S.F. No.9(PART) in Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District, Tamilnadu State and is prepared for Thiru. S. VENKATESAN, S/o. Subban, No.26/1, CB Road, Bargur Post, Krishnagiri Taluk, Krishnagiri District-635 104.

Whenever specific permissions, approvals, exemptions or relaxations are required, the lessee will approach D.G.M.S. for such permissions, approvals, exemptions or relaxations. Standard prescribed by D.G.M.S. in respect of miners health will be strictly implemented.

It is also certified that information furnished in the above Scheme of Mining with Progressive Mine Closure Plan are true and correct to the best of our knowledge.

Certified

Signature of Recognized Qualified Person.

Place : Salem

Date :

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6.	Geological Plan	IV	1:1000
7.	Geological Sections	IV-A	1:1000
8.	Year wise Development and Production Plan	V	1:1000
9.	Year wise Development and Production Sections	V-A	1:1000
10.	Mine Layout, Land use Pattern & Afforestation Plan	VI	1:1000
11.	Conceptual/Final mine closure plan	VII	1:1000
12.	Conceptual/ Final mine closure Sections	VII-A	1:1000
13.	Environment Plan	VIII	1:5000
14.	Progressive Mine Closure Plan	IX	1:1000

SCHEME OF MINING
WITH
PROGRESSIVE MINE CLOSURE PLAN
FOR
JAGADEVIPALAYAM GREY GRANITE QUARRY

(Under Rule 18(2) of GCDR 1999 & 41 of TNMMCR 1959)

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1.0 Introduction

The Mining Scheme has been prepared in respect of Grey Granite Quarry in S.F. No.9(Part) over an extent of 3.22.0 Ha. of Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District, for Thiru. S. Venkatesan, S/o. Subban, No.26/1, CB Road, Bargur Post, Krishnagiri Taluk, Krishnagiri District-635 104.

Thiru. S. Venkatesan, the Lessee had obtained lease for quarrying granite vide G.O.(3D) No.31 Industries (MME.2) Department dated 22.02.2016 for a period of twenty years and the lease deed was executed on 04.03.2016. Mining operations commenced on 01.04.2016 and the lease will expire on 03.03.2036.

The Mining Plan was approved by Director of Geology and Mining, Guindy, Chennai vide letter No.5273/MM5/2015 dated 06.01.2016.

Accordingly, the Lessee had obtained Environmental Clearance from SEIAA-TN vide Lr. No.SEIAA, TN/F.No.4964/EC/1(a)/2863/2015, dated 15.02.2016. Please refer Annexure- IX.

The 1st Scheme of Mining for the period of 2021-22 to 2025-26 is now being prepared and submitted under Rule 18(2) of GCDR 1999 for approval.

Open cast method should be adopted to win the Grey Granite dimensional stones occurring in this area. After removal of Top soil, conventional blast hole method, wire saw cutting method is being proposed to produce granite dimensional stones from the parent rock mass.

Cutting into required size, removal of defective portions are done manually using feather and wedges. The dressing of blocks into the required rectangular shaped dimensional stones are done manually by chiseling with experienced chisel men for the maximum recovery of defect free salable material. Marketing of these stone blocks to customers is being ensured by strict quality control measures adopted by the Lessee personals.

2.0 Review of Mining Plan:

a) Name of lessee	:	Thiru. S. Venkatesan, S/o. Subban.
Address	:	No.26/1, CB Road, Bargur Post, Krishnagiri Taluk, Krishnagiri District - 635 104.
District	:	Krishnagiri
State	:	Tamil Nadu
Phone No	:	+91 9500000359

TABLE 1 – LEASE PARTICULARS

GO. No	Extent (Ha)	Date of Grant	Date of Execution	Period of lease	Date of Expiry
G.O.(3D) No. 31	3.22.0	22.02.2016	04.03.2016	20 Years	03.03.2036

2.1 DETAILS OF APPROVED MININGPLAN/SCHEME OF MINING:

Date and reference of earlier approved Mining Plan/Scheme of Mining under MCR (OR) MCDR: (Indicate Approval No. and Date)

The Mining Plan was approved by Commissioner of Geology and Mining, Guindy, Chennai vide letter No.5273/MM5/2015 dated 06.01.2016.

2.2 Details of last modifications if any (for the previous approved period) of approved MP/SOM, indicating date of approval, reason for modification:

-Nil-

2.3 Give review of earlier approved proposal (if any) in respect of exploration, excavation, reclamation etc:

a) Exploration:

The Depth persistence of Grey Granite deposit is already proved based on existing pit. This Grey Granite quarry is in operation for last 5 Years. The Mineable Grey Granite body is clearly visible from the existing quarry pit.

b) Mine Development:

During the previous approved mining plan period quarry Production & development was taken from Southeastern side of the lease area(Please refer plate No.III & IV.) Already have only one working pit in this lease area. The pit dimension is given below:

Table No: 2

	PIT
Length (m)	103.0
Width (m)	82.0
Depth (m)	12.0

The present workings have reached a maximum depth of nearly 12.0m. Development of the pits has been done only in the areas where the Granite blocks could be easily mined. The Lessee considering the texture and color of this material, and in anticipation of the maintaining the percentage of recovery is 40%, the proposed mine development in the ensuing Five Years period of mining scheme is furnished in the year wise development and production plans as shown in Annexure-III and in Plate Nos.V & V-A.

c) Exploitation (Production)

Production of Grey Granite from 2016-2017 to 2020-2021 was 3145.173M^3.

The Production proposed in the Mining Plan and the actual production achieved is given below:

Table No:3

Sl.No	Year	Production proposed in the Mining period In M^3	Actual production achieved In M^3
1	2016 – 2017	1885	554.042
2	2017 – 2018	1875	1428.555
3	2018 – 2019	1875	647.677
4	2019 – 2020	1875	514.899
5	2020 – 2021	1620	-
	TOTAL	**9130**	**3145.173**

d) Waste Management:

In the Previous approved Mining Plan, the proposal of the waste dumps shown in the Northern side of the lease area. But, presently, waste dump in the Western side of the lease area.

e) Afforestation:

In the previous approved mining plan, though afforestation programme is clearly stated to plant Neem trees in the lease area. But, lessee planted Pungan, neem trees in the lease area in scattered manner.

f) Land Reclamation and Rehabilitation:

Reclamation of Mined out area does not arise and has not reached the full extent of working. Dumps are properly utilized by planting trees. Reclamation and Rehabilitation of the mine pit shall be started after completion of quarrying.

g) Control of dust, noise and ground violations:

The drilling and blasting parameters are in correlation with the proposals laid down in the approved mining plan. Shallow holes of 32mm dia. holes are drilled and the depth of hole will be generally about 1.0m. Water sprinkled for suppression of air borne dust on Mine haulage roads and waste dumps on regular intervals by water tankers. Drilling of blast holes will be always under wet condition to prevent flying of dust. In the unloading point of Tippers, water was sprinkled and further the drillers were provided with respirators in accordance with mines regulations.

Conventional low explosives were used. Since the dimensional stones, which are needed to be without internal cracks, high explosives were not used. The scale of blasting was however very less considering the rate of production. Muffle blasting was not necessary as the area was free from dwelling houses, public utilities etc., Now wire saw machine is being utilized for primary cutting to liberate the required sizes of block from the parent rock The secondary splitting of the blocks been done by pressure-split method with the help of feather and wedges. In view of above, there is no adverse effect on dust, noise and ground vibration by mining activities.

PART –II

3.0. PROPOSAL UNDER SCHEME OF MINING FOR THE NEXT FIVE YEARS:

a) Name of lessee	:	Thiru. S. Venkatesan, S/o. Subban
Address	:	No.26/1, CB Road, Bargur Post, Krishnagiri Taluk, Krishnagiri District - 635 104.
District	:	Krishnagiri
State	:	Tamil Nadu
Phone No	:	+91 9500000359

b) Status of lessee:

The lessee is a Private and Individual.

c) Mineral(s) which is / are included in the prospecting license (For Fresh grant):

-Nil-

d) Mineral(s) which is / are included in the letter of Intent / lease deed:

Grey Granite occurs in the Lease area and the Lessee intends to Quarry the same.

e) Mineral(s), which is the lessee, intends to Quarry:

Grey Granite occurs in the Lease area and the Lessee intends to Quarry the same.

f) Name and Address of the RQP :

Name	:	**SHRI S. DHANASEKAR, M.Sc., M.M.E.A.I.,**
Address	:	8/3, Kullappan Street, Opp. Indian Bank Line, Omalur Post & Taluk, SALEM DISTRICT – 636 455.
Regn. No.	:	RQP/MAS/225/2011/A
Valid upto	:	12.01.2021
Cell No.	:	98946-28970 & 73733-74702.
Email	:	geodhana@yahoo.co.in

g) Details of the Area:

The details of the land covered by the area is given below: Table No:4

District & Area	Taluk	Village	S.F. No.	Area in Hec.	Occupancy
Krishnagiri TAMILNADU	Krishnagiri	Jagadevipalayam	9(Part)	3.22.0	Patta Land Patta No.402
	Total			3.22.0	

h) Existence of public road/railway line, if any nearby and approximate distance:

Extent of the area is shown in the FMB. The District Head Quarter at a distance about 12.0Kms(W) from Quarry site. The area is about 1.0km, away from Jagadevipalayam Village. Quarry lease area is well connected with roadways, the nearest roadway is Jagadevipalayam-Krishnagiri Road (NH-66), 1.5km South. Nearest Railway station is Tirupattur Railway station, which is located about 28 km E, from the Quarry lease area. Air Port is available in Bangalore International Airport of about 96km NW from the Quarry lease area. Nearest Port is Chennai at a distance of 235.0 km NE. The Existing area is easily accessible by means of roadways (Lorries and trucks).

i) The Mining lease area is bounded by four corners and the coordinates are:

Table No:5

Toposheet No	:	**57-L/7**
Latitude	:	N 12° 29' 25.93" to N 12° 29' 31.58"
Longitude	:	E 78° 18' 42.34" to E 78° 18' 44.07"
North East	:	N 12° 29' 31.58" E 78° 18' 44.07"
South East	:	N 12° 29' 25.93" E 78° 18' 42.34"
North West	:	N 12° 29' 32.84" E 78° 18' 36.08"
South West	:	N 12° 29' 29.21" E 78° 18' 36.08"

j) A general location map showing area and access routes. It is preferred that the area be marked on a Survey of India topographical map or a cadastral map or forest map as the case may be. However, if none of these are available, the area may be shown on an administrative map:

A general location map showing area boundaries and existing access routes are shown on the Toposheet Plan (Key Plan) which is enclosed Plate No.Ib. Since existing routes are being followed to reach the lease area no fresh access routes are proposed hence not shown.

Top Sheet No. with Latitude and longitude : The area falls in Topo Sheet No.57 L/7 of Survey of India

Latitude : N 12° 29' 25.93" to N 12° 29' 31.58"

Longitude : E 78° 18' 42.34" to E 78° 18' 44.07"

k) Land use pattern :

Dry Mineral bearing land.

l) Location of the Area :

The area for Mining Lease of Jagadevipalayam Grey Granite Quarry is located over an extent of 3.22.0Ha. in S.F.No.9 (Part) in Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District, Tamilnadu State.

4.0. GEOLOGY & RESERVES

4.1.PHYSIOGRAPHY:

The area is a plain ground and gently sloping towards South. The altitude of the area is 489 meters above MSL. The area applied for quarry lease is surrounded by dry and barren land the existing lease area is covered by top soil for an average thickness of 1.0m.

The following villages are located within the 5km radius of quarry site and approximate distance with direction & population are given below. Table -6

S.No	Direction	Name of the Village	Approximate Distance	Approximate population
1	North	Balinayanapalli	1.0km	400
2	West	Soolamalai	3.7km	600
3	East	Kondappanayakempalli	3.6km	150
4	South	Jagadevi	1.2km	600

The area receives rainfall of about 800 - 900 mm/per annum and the rainy period is mainly from Oct - Jan during North East monsoon. The summer is hot with maximum temperature upto 40°C and winter records a minimum temperature of 20°C.

The water table is about 48m below ground level during summer and 42m during rainy season. Electric power lines are available nearby and electrification of quarry operations is possible.

4.2. GEOLOGY

a)Regional Geology:

Krishnagiri District is comprised of Achaean peninsular gneisses such as Charnockites, Hornblende gneisses, Biotite gneisses and migmatites, dolerites and is intruded by younger formations like pegmatite and quartz veins. The peninsular gneiss/migmatite consists of biotite, mica, plagioclase and orthoclase feldspars and Quartz and are found as sheet rocks running to several kms from NNE-SSW as a massive rock formation.

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

Description	
Top soil	- Recent Age
Pegmatite and Quartz veins	- Archaean Age
Dolerite Dyke	- Archaean Age
Peninsular gneisses and Migmatites	- Archaean
Biotite gneisses	- Achaean complex

The regional rocks mostly composed of Quartz, plagioclase feldspar, orthoclase feldspar and accessories like mica.

b) Geology of the Area

The area of mining lease comprised of Migmatite, a type of Grey Granite. Its mineral constituents are biotite, Quartz, orthoclase feldspar, and plagioclase feldspar. The biotite is fine grained and other minerals are medium grained. The graphic texture and intergrowth of quartz and feldspar indicates that younger intrusive were invaded into the pre-existing country rock, which preferably would have been biotite gneisses (Peninsular Gneisses), Flowage structure and texture of rock indicates deep seated metamorphism at high temperature and pressure. Xenolith of schistose rock is also found in the adjacent Peninsular Gneisses which indicates assimilation of older rocks by the younger intrusive. Therefore, it is clear from the regional flow structure and texture of Xenolith, the rock would be a type of Migmatite. Since the fine-grained biotite is rich in assemblages shows a Grey shade to the Granite. The pinkish colour of the rock is due to rich fresh orthoclase feldspar. Dimensional cutting and polishing of these types of hard and compact rocks exhibits an attractive pinkish and Grey shades of background with attractive wave patterns. It is a part of peninsular gneisses migmatised by younger intrusive. It is commercially called as Paradiso by the buyers in view of its wave pattern of accessory minerals.

The rock is hard, compact and sheet in nature so as to cut required sizes of blocks.

The mineral constituents of the rock mass shall be about Orthoclase feldspar 40%, quartz roughly 25%, Plagioclase feldspar 25%, mica 15% and others 5%.

The order of geological sequence are,

Description	**Geological age**
Topsoil	- Recent
Biotite rich Migmatite (Grey Granite)	- Archaean
Biotite gneisses (Peninsular Gneisses)	- Archaean

The strike of the granite body is trending in NW to SE direction and dips vertically. The regional trend is shown in the geological plan.

4.3 Details Of Exploration:

4.3.1 Already Carried Out:

RQP and his team of geologist had carried out a thorough exploration of the area. The Depth persistence of Grey Granite deposit is already proved based on existing pit.

This Grey Granite quarry is in operation for last 5 Years (2016-17 to 2020-21) and **3145.173M^3** of Grey Granite blocks have been removed and exported in raw form as well as in processed form (Tiles) till now.

4.3.2 Proposed study to be carried out:

Even though the depth persistence of the **Grey Granite** Stone may be beyond depth from 31.0m (1.0m Top Soil + 30.0m Grey Granite) depth persistent has been taken as economically viable depth to calculate all the categories of proved Geological reserves. The recovery of saleable Grey Granite stones (Gang saw size) has been taken as 40%.

The proposal for this quarry for the next five years is given upto 15.0m (15.0m Grey Granite). The quarrying activities during the next five years with deep cut as envisaged in the Scheme of mining may render additional data as may be required for future planning.

4.4. METHOD OF ESTIMATION OF RESERVES

The geological plan demarcating the commercially viable granite body has been prepared in 1:1000 scale (Plate No. IV). Totally five sections have been drawn, One section along the strike direction length wise as (X-Y) and another Four sections are drawn perpendicular to strike as (A1-B1), (A2-B2), (A3-B3) & (A4-B4) width wise. which are suitably chosen to cover the maximum area, in the scale of plan & Section - 1: 1000. (Plate No. IV & IV-A).

The cross sectional area for the proved depth persistence of 31.0m (1.0m Top Soil + 30.0m Grey Granite) has been worked out for each section. The cross sectional area multiplied by its length of influence on the longer axis gives the volume (insitu) in the cross sectional area. The sum total of the insitu reserves available within the individual cross sectional area gives the Geological Reserves of the quarry lease area.

From the total Geological insitu Reserves, the quantity of saleable granite stones and quantity of granite waste generation are computed by applying recovery factor of about 40% by volume.

As the saleable Grey Granite stone are in terms of cubic meters (Volume) only and not in terms of tonnage as in the case of major industrial mineral, the geological Reserves, mineable reserves and quantum of waste generated etc, are given only in terms of cubic meters. (Volume).

The details of estimation of Geological Reserves and Mineable Reserves with reference to the Geological Plan & section and Conceptual Plan & Section as shown in (Plate no.IV and VII) have been furnished in Table – 7 & Table - 8 respectively.

4.5. Geological Reserves:

The Geological reserve is estimated as **957480M³** upto a depth of 31.0m (1.0m Top Soil + 30.0m Grey Granite), by area cross sectional method.

Table -7

GEOLOGICAL RESERVES

Section	Bench	length in (m)	Width in (m)	Depth in (m)	Top Soil in m3	Total Reserve m3	Recoverable Reserve (Grey Granite) 40% in m3	Granite Waste 60% in m3
TOP SOIL								
XY-A1B1	I	75	120	1	9000			
XY-A2B2	I	42	140	1	5880			
XY-A3B3	I	1	69	1	69			
XY-A4B4	I	28	155	1	4340			
TOTAL					**19289**			
GREY GRANITE								
XY-A1B1	II	75	120	5		45000	18000	27000
	III	75	120	5		45000	18000	27000
	IV	75	120	5		45000	18000	27000
	V	75	120	5		45000	18000	27000
	VI	75	120	5		45000	18000	27000
	VII	75	120	5		45000	18000	27000
XY-A2B2	II	42	140	5		29400	11760	17640
	III	42	140	5		29400	11760	17640
	IV	42	140	5		29400	11760	17640
	V	42	140	5		29400	11760	17640
	VI	42	140	5		29400	11760	17640
	VII	42	140	5		29400	11760	17640
XY-A3B3	II	44	79	5		17380	6952	10428
	III	59	99	5		29205	11682	17523
	IV	59	139	5		41005	16402	24603
	V	59	139	5		41005	16402	24603
	VI	59	139	5		41005	16402	24603
	VII	59	139	5		41005	16402	24603
XY-A4B4	II	28	155	5		21700	8680	13020
	III	63	177	5		55755	22302	33453
	IV	63	177	5		55755	22302	33453
	V	63	177	5		55755	22302	33453
	VI	63	177	5		55755	22302	33453
	VII	63	177	5		55755	22302	33453
TOTAL					**19289**	**957480**	**382992**	**574488**

Top Soil	=	19289 m^3
Total Geological Reserves in ROM	=	957480 m^3
Recoverable Reserves @ 40% (Grey Granite)	=	382992 m^3
Granite Waste @ 60%	=	574488 m^3
Total Waste	=	593777 m^3
Granite waste ratio:	=	1:1.55

(* Total Waste- Top soil + Granite waste)

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4.6. Mineable Reserves:

The Mineable reserves are calculated by deducting 7.5m Safety distance and Bench Loss.

The Mineable Reserve is calculated upto a depth of 31.0m (1.0m Top Soil + 30.0m Grey Granite).

Table-8

MINEABLE RESERVES

Section	Bench	length in (m)	Width in (m)	Depth in (m)	Top Soil in m3	Total Reserve m3	Recoverable Reserve (Grey Granite) 40% in m3	Granite Waste 60% in m3
TOP SOIL								
XY-A1B1	I	66	98	1	6468			
XY-A2B2	I	42	125	1	5250			
XY-A3B3	I	1	50	1	50			
XY-A4B4	I	20	117	1	2340			
TOTAL					**14108**			
GREY GRANITE								
XY-A1B1	II	65	96	5		31200	12480	18720
	III	60	86	5		25800	10320	15480
	IV	55	76	5		20900	8360	12540
	V	50	66	5		16500	6600	9900
	VI	45	56	5		12600	5040	7560
	VII	40	46	5		9200	3680	5520
XY-A2B2	II	42	123	5		25830	10332	15498
	III	42	113	5		23730	9492	14238
	IV	42	103	5		21630	8652	12978
	V	42	93	5		19530	7812	11718
	VI	42	83	5		17430	6972	10458
	VII	42	73	5		15330	6132	9198
XY-A3B3	II	44	58	5		12760	5104	7656
	III	59	74	5		21830	8732	13098
	IV	59	109	5		32155	12862	19293
	V	59	99	5		29205	11682	17523
	VI	59	89	5		26255	10502	15753
	VII	59	79	5		23305	9322	13983
XY-A4B4	II	19	115	5		10925	4370	6555
	III	49	128	5		31360	12544	18816
	IV	44	118	5		25960	10384	15576
	V	39	108	5		21060	8424	12636
	VI	34	98	5		16660	6664	9996
	VII	29	88	5		12760	5104	7656
TOTAL					**14108**	**503915**	**201566**	**302349**

Top Soil = 14108 m^3

Total Mineable Reserves ROM = 503915 m^3

Recoverable Reserves @ 40% (Grey Granite) = 201566 m^3

Granite Waste @ 60% = 302349 m^3

Total Waste = 316457 m^3

Granite Waste ratio: = 1:1.56

(* Total Waste- Top soil + Granite waste)

The geological Reserves computed based on the geological cross sections up to the economically workable depth of 31.0m (1.0m Top Soil + 30.0m Grey Granite) works out to 382992m^3 (40% recovery) cubic meters (Table-7) and mineable reserves have been computed as 201566m^3 (Table-8) at the rate of 40% recovery upto a depth of 31.0m (1.0m Top Soil + 30.0m Grey Granite). The above projections are for the next Five Years plan period.

The mineable reserve is found out by deducting the locked up area in safety distance all along the perimeter of the lease boundaries. Proved reserves are categorized up to 31.0m (1.0m Top Soil + 30.0m Grey Granite).

The Grey Granite body occurring in this area exhibits more or less uniform color and texture and sold in par with commercial granite deposit. If any variations occur locally during mining such as cracks flaws and patches, the defective area is removed during dressing & marketed.

4.7.Category-wise (Proved, Probable and Possible) Reserves Estimated in the earlier Approved Mining Plan with grades.

The geological reserves were calculated and estimated as **510528m^3**. The Mineable reserve were calculated as **343615m^3**. Actually the Geological and Mineable reserves was calculated by applying recovery percentage of 25% and depth is taken up to only 16.0mts in the mining plan.

4.8. Depletion of Reserves:

The geological reserves from at the time of presentation of mining plan were **510528m^3** and the mineable reserve was **343615m^3**. The Planned production during the Mining Plan period was **9130m^3** with a recovery of 25% only, the achieved production quantity is **3145.173m^3** .i.e. (from 2016-2017 to 2020-2021). The production of granite for the first five year as per the Previous approved mining plan is 9130 cum with a recovery of 25% only. This we arrived due to the Top Soil removal and the inferior quality of the rock availability. The production rejects were more when compared to the recent years. Now in the Scheme of Mining submitted for approval we had increased the production percentage to 40% considering the depletion in the Top Soil removal and inferior quality of the rocks. At present the Granite Wastes are less.

4.9. Additional reserves established category wise (with basis and parameters considered).

Additional reserves have been established during the present plan period. Please refer Annexure I and II.

4.10. Category-wise updated reserves with grade (indicate and use grade with analysis) as well as marginal grades based on above.

Table-9

Sl. No.	Details	Total reserve (quantity in M^3)	Recovery Percentage	Recoverable Reserve (quantity in M^3)
1.	Geological reserve calculated in the approved Mining Plan	510528	25%	127632
2.	Mineable reserve calculated in the approved Mining Plan	343615	25%	85904
3.	Year wise reserve calculated in the approved Mining Plan	36520	25%	9130
4.	Updated geological reserve calculated in this 1st Scheme of mining period	957480	40%	382992
5.	Updated mineable reserve calculated in this 1st Scheme of mining period	503915	40%	201566
6.	Updated Year wise reserve calculated in this 1st Scheme of mining period	25600	40%	10240

The planned year wise recoverable reserve during the approved mining plan was **9130 m^3** and The actual production achieved during the period is **3145.173m^3** .i.e. (from 2016- 2017 to 2020- 2021).

4.11. CONCEPTUAL MINING PLAN

Conceptual mining plan is prepared with an object of long-term systematic development of benches; lay outs, selection of permanent ultimate pit limit, depth of mining and ultimate pit, selection of sites for construction of infrastructure etc.

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area etc. The ultimate pit dimensions of the quarry are given below. (Please refer Plate No.VII).

Table-10

ULTIMATE PIT DIMENSIONS		
Length(m)	Width(m)	Depth(m)
221.0	139.0	31.0

However, during extraction of blocks each bench will be of 5 mts height and 5.0m width with vertical slope for proper dimensional cutting. The quantum of excavation is estimated to be 518023m^3 (ROM 503915m^3 + Top Soil 14108m^3) up to the depth of 31.0m (1.0m Top Soil + 30.0m Black Granite). (refer Table-8).

The generation of waste is estimated about 302349m^3, (Table-8) and marketable granite blocks as 201566m^3. (Plate No-VII). Granite Waste will be backfilled in the mined out pit of the lease area. Topsoil will be dumped in Northwest and Southern side boundary barrier of the lease area at the conceptual stage. Please refer plate No.VII.

The Dump & Backfilling Dimensions are given below:

Table No:11

	Proposed Granite Waste Backfilling Dimensions	Proposed Topsoil Dump Dimensions
Length (m) Avg	184.0	371.8
Width (m) Avg	92.0	7.5
Height (m) Avg	17.86	5.05
Total Quantity (m^3)	302349	14108

Please refer Table No.8.

Waste dump - the excavated granite waste will be used for Back-filling at the end of quarry.

5.0. MINING

5.1. OPEN CAST WORKING

In this proposed Quarry area under consideration mining will be done by opencast semi-mechanized method.

The Granite to be mined is first examined for its suitability for forming blocks or slabs. For this textural uniformity, colour, strength, durability, presence of cracks joint planes and their frequency are noted before marking or channeling the blocks.

Well-spaced joints at right angles make the extraction easier. The Top Soil (weathered rock portion) is removed by drilling. The quarry is opened as trenches taking advantage of joint systems. As far as possible, rectangular blocks of standard size are marked either by hand channeling in manual mining or by channeling machines in mechanized mining. Efforts are made to develop vertical face and granite is quarried in rectangular blocks. The blocks are separated from the parent ledge by putting wire saw method of drilling.

A series of close space holes are drilled underneath the blocks, which are broken free with the use of feathers and wedges. Feathers are pieces of semi-circular steel wedges that are inserted into the holes. The steel wedges are driven between the features to produce a break to free a block of stone. The blocks are lifted manually with levels or by cranes and loaded into trucks.

In mechanized mining help of compressor, drilling, machine, various diamond saws, wire saws, channeling machines, wedges and broaching tools, cranes, dumpers etc., is taken. Endless braided steel wires and diamond saws are employed for cutting blocks. Jet channeling or jet piercing is quite common. In some mines flame cutting is done to cut the rocks.

In this proposed Quarry area under consideration mining will be done by opencast semi-mechanized method.

Benches in Granite body will be formed Three benches, three benches to a height and width of about 5.0m & 5.0m respectively at a slope about 90° in the Next five years. Haul roads will be made at a gradient of 1:10 to 1:16. Please refer Plate No.V.

Footpaths will be provided between benches for easy access of men. Compressor and jackhammers will be used for drilling purposes.

Excavators, cranes, chain-pulley blocks and winch will be used for dislodging lifting and loading the blocks.

The dislodged blocks from the sheet rock will be dressed by chisel men to the maximum possible size and then loaded by cranes or chain-pulley block or winch into the trucks for Despatch to the destination.

After excavating to the economic limit of depth, permission will be obtained from DGMS and DGM to work the deposit in the boundary barrier.

Granite Waste will be dumped on existing dump yard, which was present in the western side of the lease area. Please refer plate No.V.

5.2. EXTENT OF MECHANIZATION / COST OF MACHINERY:

The following machineries are utilized on rental basis for the development and production work at this mine.

I. DRILLING MACHINE

Table -12

S.No	Type	Nos	Dia Hole mm	Size Capacity	Make	Motive power
1	Jack hammer & Accessories	4	35	1.2m to 6m	Atlas Copco	Compressed air
2	Compressor	1	7.5kgs/cm^2	400 psi	ELGI	Diesel Drive
3	Diamond wire saw	1	-	30m^3/Day	Optima	Diesel Generator
4	Gen set	1	-	Powerica	-	CP 125 D5P (H.P)

II. LOADING EQUIPMENT

Table -13

S.No.	Type	Nos	Capacity	Make	Motive Power
1	Excavator	1	300	Tata Hitachi	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT

a)

Table -14

S.No.	Type	Nos	Capacity	Make	Motive Power
1	Tippers	2	10 tonnes	Tata	Diesel Drive

b) Transport from the quarry head to destination

Transport from quarry head to desired destination is done by trucks or by trailers.

c) Miscellaneous:

Apart from the above the following tools and tackles are required for quarry operation.

For operation

The operation of granite quarry requires the following loose to ols material and have to be kept sufficiently in stock for non - interruption of the quarry work.

1. Drill roads - 0.3m ,0.4m , 0.5 m ,0.6m , 0.75m ,1.65m, 2.25m, 3m & 3.6m.
2. Steel Alloy chains of sufficient length of 12mm, 16mmand 18mm, sizes.
3. 'D' shackets to link the chain lengths.
4. Rubber hose of required length.
5. Hose clamps to link the compressor delivery hoses.
6. Feather and wedges of 6" and 12" dia sizes utilize for splitting the block from the parent rock. This is an important tool in the operation of a quarry.
7. Crow bars.
8. Spades.
9. Sludge Hammer
10. Iron Pans
11. Pitcher Hammer12. Chisels.
13. Consumables, such as diesel, Hydraulic oil, grease, abrasive wheels, welding Machineries etc.
14. Stock of essential spare parts of machinery.
15. Explosive as per the licensed quantity.0
16. 'M' type portable explosive Magazine with accessories.

In addition to the above diamond wire saw equipment with a accessories are required to remove rock from parent body rapidly with minimum damage.

The above machineries are adequate to meet out the simultaneous development and production schedule drawn out in this Scheme of mining.

5.3. BLASTING

During future development of quarrying, removal of over burden will be done by excavator and mild blasting with explosives in holes drilled by jack hammer of 32mm dia especially. No deep hole blasting is proposed. The mining only done wire saw cutting. Authorized explosive dealers supply the explosive at site as per the requirement.

5.4. Year wise Production & Development for the ensuing Five Years period:

The year-wise development for the ensuing Five Years period is shown in the plates with cross sections. In view of the development, year wise proposal for the present scheme period is from existing pit towards Southeastern side of the lease area.

The Proposal for the next five Years reserves are calculated upto a depth of 15.0m.

Table-15

YEARWISE DEVELOPMENT & PRODUCTION RESERVES

Year	Section	Bench	length in (m)	Width in (m)	Depth in (m)	Total Reserve m3	Grey Granite Production Recovery 40% in m3	Granite Waste 60% in m3
04.03.2021 to 03.03.2022	XY-AB	II	8	5	5	200	80	120
		III	50	20	5	5000	2000	3000
		TOTAL				**5200**	**2080**	**3120**
04.03.2022 to 03.03.2023	XY-AB	III	15	20	5	1500	600	900
		IV	13	54	5	3510	1404	2106
		TOTAL				**5010**	**2004**	**3006**
04.03.2023 to 03.03.2024	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
04.03.2024 to 03.03.2025	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
04.03.2025 to 03.03.2026		IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
	GRAND TOTAL					**25600**	**10240**	**15360**

Total Reserves ROM = 25600 m^3

Total production for the next Five Years (40%) (Grey Granite) = 10240 m^3

Granite waste (60%) = 15360 m^3

Total Waste = 15360 m^3

Granite: Waste ratio is = 1:1.50

(* Total Waste- Granite waste)

Estimated Life of the quarry

Mineable ROM = 503915 m^3

Mineable Reserves @ 40% = 201566 m^3

Average production per year @ 40% = 2048 m^3

Estimated Life of the Quarry = 201566/2048= 98.42 years

Life = 98 years

The average proposed rate of production of **Granite is** about **2048m^3** per year.

5.5. Year-wise production for the ensuing Five Years Period:

Table-16

Sl. No	Year	Total Excavation of ROM (in cum)	Percentage of recovery	Production for Granite ROM (in cum)	Granite waste 60% (in cum)
1	04.03.2021-03.03.2022	5200	40%	2080	3120
2	04.03.2022-03.03.2023	5010	40%	2004	3006
3	04.03.2023-03.03.2024	5130	40%	2052	3078
4	04.03.2024-03.03.2025	5130	40%	2052	3078
5	04.03.2025-03.03.2026	5130	40%	2052	3078
	TOTAL	**25600**		**10240**	**15360**

5.6. Year-wise Development for the ensuing Five Years Period:

Table-17

Year	Top Soil (in cum)	Granite waste 60% (in cum)	Total Waste (in cum)
04.03.2021-03.03.2022	-	3120	3120
04.03.2022-03.03.2023	-	3006	3006
04.03.2023-03.03.2024	-	3078	3078
04.03.2024-03.03.2025	-	3078	3078
04.03.2025-03.03.2026	-	3078	3078
TOTAL	**-**	**15360**	**15360**

The recovery percentage for the ensuing mining scheme period has been calculated based on the practical experience gained during the mining operation.

Granite Waste will be dumped on existing dump yard, which was present in the western side of the lease area. Please refer plate No.V.

The dumping details are furnished below :

Table No.18

	Proposed Granite Waste Dump
Length (m)	120.0
Width (m)	56.0
Height (m)	2.28
Total Quantity (m^3)	15360

6.0 MINE DRAINAGE

The water table in this area in 42m-48m as observed in nearby wells. Now, the present Quarry operation confined to 15m which is well above the water table and hence, quarrying may not affect the ground water. If water is encountered at depth due to rain water seepage, the same may be drained by suitable pumping & drained will be utilized for afforestation area.

6.1. Arrangement and Places where the mine water is finally proposed to be discharged:

The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300 lpm and it shall be pumped about periodically by a stand by diesel powered Centrifugal pump motivated with 7.5 H.P. Motor. The quality of water is potable and it is not contaminated with any hazardous things.

7.0 STACKING OF MINERAL WASTE AND DISPOSAL OF WASTE:

a) Top Soil:

Top soil of the lease area is Nil for the next five years.

b) Granite waste:

Grey Granite waste forms nearly 60% of ROM and the quantity of waste in the five years will be around 15360m^3. Granite Waste will be dumped in the Western side of the lease area for the next five years. Please refer plate No.V & VI.

The dumping details is furnished below :

Table No.19

	Proposed Waste Dump (Granite waste)
Length (m)	120.0
Width (m)	56.0
Height (m)	2.28
Total Quantity (m^3)	15360

c) Manner of disposal of waste:

As and when there is accumulation of waste, the same is loaded into the tipper by loading machines and dumped in the respective places ear-marked for the purpose.

The waste management plan with reference to the quantum of waste generated is shown in Mine layout and Afforestation plan (Plate No.VI).

8.0 USES OF THE GRANITE STONE

The quarried Grey Granite blocks are either exported as raw blocks or processed as value added products such as slabs, tiles, fancy items, Monuments, precision surface plates for engineering application.

The export market for granite is china, European Country, North America, Middle East, Far East, Japan, Taiwan & Canada besides catering local markets.

8.1. Products and Application areas of Granites :

Broadly there are six categories of granite products – rough blocks, slabs, panels, tiles, monuments and others.

Granites are most adoptable as interior veneers in sky scrapers. In architecture, granites are mostly used for artistic veneers as they enrich other aspects of buildings.

Slabs, Panels, Tiles and Monuments:

Granite in the form of slabs of various sizes is mainly used in building monumental institutions, commercial and residential buildings.

Slabs :

A semi-finished block of rectangular size with one side polished and the other outside sawn and thickness in the range of 20mm upto 20 cm. are used for interior wall panels in the building.

Panels:

Panels are used for covering the interior surface of the buildings, as tabletops and as interior wall paneling. Size of panel range from 50 cms x 100 cms upto 100 cms x 100 cms and thickness correspondingly varying from 20mm to 50mm.

Tiles:

Granite tiles are used as flooring material and also for wall cladding – most preferred size is 30 x 30 sq. cms with 10mm thickness though sizes vary within the range 15 x 10 sq.cms and 60 x 60 sq. cms. Tolerance requirement in the international market on thickness is generally 0.1 cm to 0.2 cm.

Monuments:

Indian Multi Coloured Granite is being exported in finished / semi-finished form for making monuments and tomb-stones for graveyards. Granite with good polish are mostly selected for making memorials ranging from simple markers and head stones to elaborate monuments and mausoleums. Some export of red granite monuments have also begun recently.

Other Uses:

In India granite is used as kitchen platform, kitchen sink, nameplates, foundation / inaugural stones etc., Granites ashtrays; flower vases and other art pieces which have both domestic and export markets.

Other uses for dressed or cuter shaped forms of different sizes are as flagging stones in the form of flat slabs or rectangular or irregular shapes over steps, walk ways, parks and terraces, parking streets and highways or other traffic areas with rectangular blocks.

Less known is the fact, that granites find important applications in the engineering fields as they possess high stability, non-denting and wear resistance qualities. These engineering grade granites are used in the construction of bridges, piers, sea and river walls, dams and related structures, bridges, super structures, grade separations and retaining walls.

Granites are often used for the manufacture of inspection equipment, like surface plates, parallels, cubes, squares, straight edges, measuring prisms, guide ways of precision instruments and other metrological aids such as in weight measurements.

8.2. Changes proposed in the use of mineral, if any, with reasons

No change is proposed in the use of minerals as the mineral is being sold out in raw form as per the buyer's requirement.

8.3. Changes in the specification, if any, imposed by the user industries and / or specifications required in the case of new user industries, if any, to be given.

As mentioned above there is no specification imposed by the user industries. Because the buyers prefer the bigger size blocks called as Gang saw.

8.4. Efforts made for utilization of the sub-grade mineral including fines.

As such there is no sub-grade mineral, there is no separate stacking of such wastes.

9.0 QUALITY CONTROL

The Grey Granite deposit occurring in this quarry shows uniform quality throughout and hence quarried and marketed as a single variety.

The excavated blocks are carefully inspected for any natural defects such as joints, cracks, xenoliths growth etc and such defects is removed manually using feather and wedges and the blocks are then shaped into perfect rectangular dimensional stone blocks by chiseling. Different price for each quality material have been fixed and the entire production quantity is marketed accordingly.

10. SURFACE TRANSPORT

The mode of transport of the granite blocks produced and marketed is by road to various customer destinations and granite processing units located at different parts of the country. The Grey Granite blocks approved for export market are shipped from Chennai Harbour to various countries and if required the blocks may be shifted to Tuticorin Harbour which depend upon the exporters' destination.

11.0. MINERAL BENEFICIATION

11.1. Results of any beneficiation investigations conducted and changes made in existing mineral beneficiation plant and tailing disposals, if any, with benefits expected (necessary) flow sheet and tailing dam designs etc, to be submitted as applicable).

Not Applicable.

11.2. Beneficiation test done, if any, on sub-grade mineral including fines and proposals for installation of new or additional beneficiation facility, if any (furnish process details in brief along with expected tailings loss).

The production of granite dimensional stones involving splitting of rock mass of considerable volume from the parent sheet rock carefully avoiding any kind of damage in the form of cracks, followed by "Secondary Splitting" into required size involves long hole drilling upto the bottom of the separated block and mild blasting along the required plans.

The blocks splitter as above are toppled and removed from the pit, removing the defective portions and dressing into the dimensional blocks are done manually using feather and wedges and chiseling respectively the laborers who are skilled in this work, which is constantly supervised by experienced mining geologists. Nowadays modern techniques of wire- saw machines have been deployed for liberation of the rock from the parental rock, sometimes to the required sizes also.

12. SITE SERVICES

The simple methods adopted and the limited scale of activities involved in granite dimensional stone quarrying does not require high-tension electric power supply or huge worship facilities. The quarry operation is restricted to one general shift during day time only. Machinery repair works are attended at **Krishnagiri (11.0 kms)** town. Minor repairs carried out by Lessee staff at the quarry site itself.

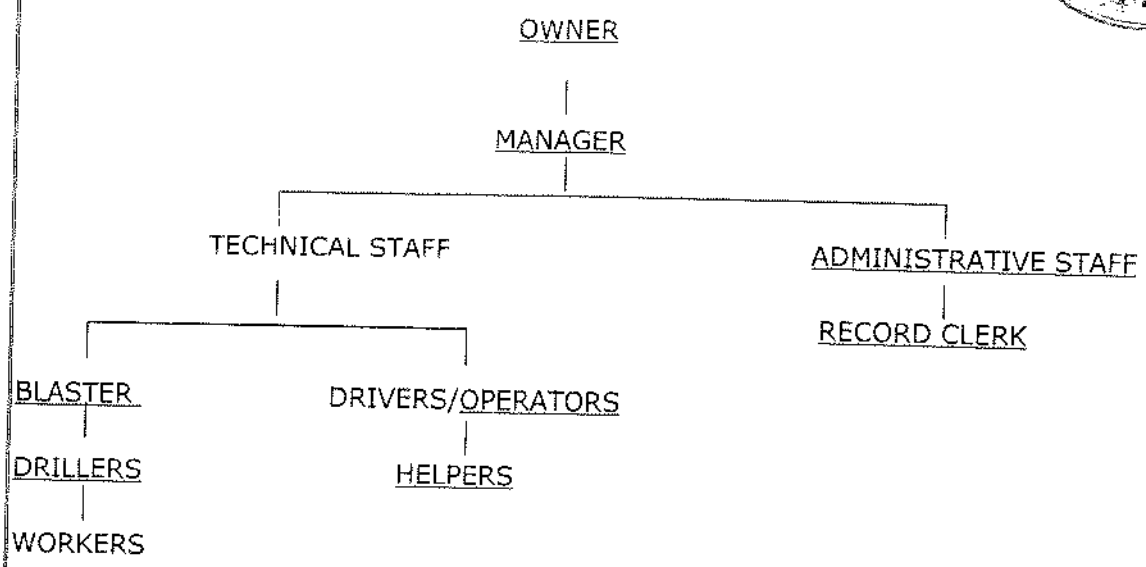
Potable drinking water is supplied from the nearby community wells and approved water vender can be transported to the work site through tanker placed on tippers. Quarry office, first-aid room, store room, rest shed, toilet etc, will be provided on semi - permanent structures within the quarry lease area (Plate No - V - IX).

13. EMPLOYMENT POTENTIAL

Except some established varieties of granites like Jagadevipalayam Multi, Paithur black, Kashmir white or Melur white, Paradiso of Krishnagiri , Sivanmalai green, Colombo Zubrana, English teak, Tiger skin Lady dream, Midnight blue etc., market for other varieties are seasonal one. With a result, the quarry work becomes seasonal and the employment also becomes seasonal.

The man power is proposed for the Grey Granite Quarry to look after and carryout the day-to-day quarrying activities, and achieves targeted production duly comply with the statutory provisions of the Quarry is as summarized below:

ORGANISATION CHART



The strength of man power requirement is proportionate to the proposed production for the Grey Granite Quarry in the referred area as detailed below:

1.	Project Manager	:	1
2.	Record Clerk	:	1
	Total	:	**2 Nos.**

Highly skilled, Skilled, Semi-skilled and Unskilled:

	Supervisor Cum Blaster	:	1

Skilled:

	Compressor and Wagon Drill operators	:	1
	Drillers / Workers	:	5
	Excavator / Rock Breaker Operators	:	3
	Vehicle Drivers	:	2
	Total	:	**12 Nos**

Semi-skilled:

	Watchman	:	1
	Total	:	1

Unskilled:

	Dresser/cutter	:	10
	Total	:	**10 Nos**
	Grand Total	:	**24 Nos**

The man power strength is subject to the extent of mechanizations. The above mentioned technical staff and administrative staff are to be considered to meet out the production schedule and to comply with the statutory provisions of the Mines Safety Regulations.

14. ENVIRONMENT MANAGEMENT PLAN:

14.1 Environment Base line information: Attach a note on the status of baseline Information with regard to the following:

The quarry lease is a plain ground sloping towards South. The existing Grey Granite in a field S.F.No.9 (Part) in Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District, and Tamil Nadu state is discordant intrusion of Paradiso with a strike direction of the granite body is almost NW-SE and dips vertical. The area comprises soil with boulders of Granite.

Table-20

Description	Present Area (Ha.)	Area to be required at the present scheme period (Ha)	End of life of Quarrying Period (Ha.)
Area under Quarry	0.66.2	0.05.3	2.65.9
Dumps	0.61.2	0.61.2	Backfilling
Stockyard	Nil	Nil	Nil
Infrastructure	Nil	0.02.0	0.02.0
Roads	0.02.0	0.03.0	0.05.0
Green Belt	Nil	0.37.3	0.49.1
Unutilized Area	1.92.6	0.83.8	Nil
Grand Total	**3.22.0**	**1.92.6**	**3.22.0**

Water Regime

Ground water is touched at a depth of 48m in summer and at 42m in NE monsoon season. The average rainfall is around 800-900 mm. There is no lake, reservoir or river near the area.

Villagers use open well water for drinking and other domestic purposes for ages without any adverse health effects. However, drinking water will be supplied from the public water supply system from nearby hamlets.

Flora and Fauna

The main crops are Casuarina, Pungan, Neem, Tamarind,etc. In some places lift irrigation is carried out. Since the sub-seed area is a stony waste, it does not contain much vegetation and villages. There is no report of existence of wild animals in this region. There is no wild life, bird sanctuary, reserve or social forest within 500m radius of the quarry lease area.

Climate Conditions

The area receives rain during NE monsoon. The temperature in summer goes above 40°C in the months of April, May and June and it drops down to 20°C in December, January and February. The wind direction is from NE-SW and vice-versa.

Human Settlement

There are few villages located within the radius of 5km from the quarry lease area. It is rural area with small hamlets scattered all around the area. The approximate distance and population are given below: Table-21

S.No	Direction	Name of the Village	Approximate Distance	Approximate population
1	North	Balinayanapalli	1.0km	400
2	West	Soolamalai	3.7km	600
3	East	Kondappanayakempalli	3.6km	150
4	South	Jagadevi	1.2km	600

Basic human welfare amenities such as health center, schools, communication facilities, commercial centers etc are available in **Krishnagiri** town, which is at a distance of about **11.0kms** towards western side of the quarry lease area.

Public building, Places of worship and Monuments

There are no Public buildings, Archaeological or National Monuments or places of worship situated within 500m of the quarry site.

Indicate Any Sanctuary Is Located In The Vicinity Of Leasehold:

Not applicable.

14.2 Impact Assessment: Attach an Environmental Impact Assessment Statement Describing the impact of mining and beneficiation on environment on the following:

Environmental Impact Assessment Statement:

The factors that should be covered in this para are: -

01. Land
02. Air Quality
03. Water Quality
04. Noise Levels
05. Vibration Levels
06. Water Regime
07. Socio-Economics
08. Historical Monuments etc.

Land:

It is a working mine. There is a proposal for back filling at the conceptual stage.

Before closure of the mine, a parapet wall will be constructed to prevent inadvertent entry of cattle and human beings. The dumps will be vegetated to prevent sliding.

After closure of the mine, the pit will be allowed to collect seepage and rain water. This will help to charge the nearby agricultural wells. Fish forming will also be attempted.

The total area under mining lease is about 3.22.0Ha.

Conceptual position of the mining details:

The area covered by pits	:	2.65.9 Ha.
The area covered by waste dumps	:	Backfilling
The area covered by afforestation	:	0.49.1 Ha.
The area covered by mine roads and Infrastructure	:	0.07.0 Ha.
Virgin area	:	Nil

Afforestation will be attempted in the boundary barrier.

Air-Quality:

There will be generation of dust during drilling and blasting. Since this is an open area, the impact on air quality will be to the minimum. The air is fresh and unpolluted. Even when the quarry is in operation, because of its small size, the air will not get polluted.

The mine roads will be sprinkled with water before starting the transportation of mineral and wastes to minimize air pollution.

Water Quality:

Mining operation will not produce any toxic effluent in the form of solid, liquid or gas.

The existing water quality will not be affected by mining operation. The Surface rainwater flow through the seasonal water course as usual.

Noise Level:

Drilling, loading, hauling and lifting equipment blasting, etc., are bound to produce certain level of noise which will be bring down to acceptable norms.

Table-22

Duration per day (Hrs)	Sound level (dBa)
16	80
8	85
4	90
2	95
1	100
½	105
¼	110
1/8	115

Vibration levels:

The ground vibration will be caused due to movement of earth moving equipment and blasting. But the impact on the environment will be negligible, since the quantity of explosives used will be very small and the movement of earth moving equipment will be intermittent.

Water Regime:

Mining operation will not produce any toxic effluent in the form of solid, liquid or gas and will not be any impact on quality of water and on ground water.

Socio-Economics:

The local population is mostly agriculture based. Agricultural is done only on seasonal basis. Mining in this area is an avenue for employment. It has created awareness on the value and applications of granite in building and in industries. Mining certainly has created an impact in the Socio-economic standards of the local people. It has improved the life style of the local people and has improved the standard of living.

Historical Monuments:

There is no historical or Archaeological monument near the area. There is no scope for mining operation to have any impact on these aspects.

14.3 Proposal For Reclamation Of Land Affected By Mining Activities During & At The End Of Quarrying

Due to nature of occurrence of massive granite formation, the depth persistence of the granite body in this quarry is beyond the workable limits. In the proposed Scheme of mining only 15.0m has been envisaged as workable depth for safe, systematic & economic mining. Hence after quarry reaches ultimate pit limit 31.0m depth, waste will be used for Back-filling at the end of quarry and also used for safety bunds and barbed wire fencing will be construct and maintaining around the quarried out pits.

14.4 PHASED PROGRAMME OF PLANTING TREES :

It is an existing mine. The only proposal now is to plant 80 Casuarina & Pungan trees every year in the boundary barrier. A retaining wall will be constructed around the dumping yard. Please refer Plate No.VI. The afforestation programme for the Next Five Years are as follows:

Table-23

Year	Name of the species	No. Of species	Interval	Area in Ha.	Survival rate
04.03.2021-03.03.2022	Casuarina & Pungan	80	5m	0.08.1	80%
04.03.2022-03.03.2023	Casuarina & Pungan	80	5m	0.08.1	80%
04.03.2023-03.03.2024	Casuarina & Pungan	80	5m	0.07.1	80%
04.03.2024-03.03.2025	Casuarina & Pungan	80	5m	0.07.0	80%
04.03.2025-03.03.2026	Casuarina & Pungan	80	5m	0.07.0	80%
TOTAL		**400**		**0.37.3**	

After complete extraction of mineral, the pit will be allowed to collect rain and seepage water to serve as a reservoir to charge the nearby wells. Fish culture will also be attempted. A bund will be constructed around the pits.

14.5. GRANITE CUTTING AND POLISHING :

The Lessee does not have the facilities to cut and polish the granite blocks. He proposes to export the Granite blocks directly to the potential buyers of the Domestic and World Market.

14.6 PROPOSED ENVIRONMENT MANAGEMENT(EMP) FOR FIXED ASSET COST AND OPERATIONAL COST:

Table-24

A.FIXED ASSET COST:

SL.No	Description	Amount (Rs)
1	Land cost	35,00,000
2	Labour shed	1,20,000
3	Sanitary facility	70,000
4	Fencing cost	1,60,000
Total		**38,50,000**

B.OPERATIONAL COST:

SL.No	Description	Approximate Amount (Rs)
1	Excavator	55,00,000
2	Tippers 2 Nos	20,00,000
3	Wire saw	10,00,000
4	Compressor with loose tools	10,00,000
Total		**95,00,000**

C. EMP COST:

SL.No	Description	Approximate Amount (Rs)
1	Drinking water facility	1,00,000
2	Safety kits	80,000
3	Water sprinkling	50,000
4	Afforestation	30,000
5	Water quality test	40,000
6	Air quality test	40,000
7	Noise / Vibration test	40,000
Total		**3,80,000**

Total Project Cost (A+B+C) =Rs. 1,37,30,000/-

15.0 PROGRESSIVE MINE CLOSURE PLAN

In the Grey Granite quarry operations the maximum depth proposed is 15.0m (15.0m Grey Granite), this is based on the market potential at present scenario.

The proposal to safety barrier in the quarried out pits after the end of the life of the quarry period. After completion of quarry operation the quarried out land will be fenced and maintained with barbed wire to prevent inherent entry of the public and cattle's. Garland drains will be constructed around the quarry to prevent the surface run off the rain water.

Afforestation and Green belt development will be maintained in all the boundaries, till the trees attain the stabilize level.

Land use pattern

Table-25

Description	Present Area (Ha.)	Area to be required at the present scheme period (Ha)	End of life of Quarrying Period (Ha.)
Area under Quarry	0.66.2	0.05.3	2.65.9
Dumps	0.61.2	0.61.2	Backfilling
Stockyard	Nil	Nil	Nil
Infrastructure	Nil	0.02.0	0.02.0
Roads	0.02.0	0.03.0	0.05.0
Green Belt	Nil	0.37.3	0.49.1
Unutilized Area	1.92.6	0.83.8	Nil
Grand Total	**3.22.0**	**1.92.6**	**3.22.0**

16.0 MINERAL CONSERVATION AND DEVELOPMENT

The Scheme of mining proposed has fully covered the aspects of Granite Conservation and development with a future plan to extend the proposed working of the quarry to the maximum possible workable depth of the deposit. Extreme care is taken to ensure proper supervision of quality control of the granite dimensional stone aimed at the recovery of the maximum saleable quality and quantity of Grey Granite dimensional stones suitable for full utilization of the consumers.

Care is been taken for each process just to safeguard the material quarried in an economical and efficient manner by adopting systematic and scientific quarrying with consultation and supervision of well experienced quarry masters.

17.0 STATUTORY PROVISIONS

The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied with, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety, Chennai. Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the department.

Certified that this Mining Plan has been Prepared in Accordance with the Mines Act, Rules and Regulations and orders made there under and also in Conformity with the Under Rule 18(2) of Granite Conservation and Development Rules, 1999.

12/2/2021

COMMISSIONER OF
GEOLOGY AND MINING,
GUINDY, CHENNAI-600 032.

10/2/21

This Scheme of mining Plan is approved
Subject to the Conditions / Stipulation
indicated in the Mining Plan Approval
Letter No.489/MM4/21 Dated 12.02.21

ANNEXURE-I

GEOLOGICAL RESERVE
(Please Refer Plate No.IV & IV-A)

THIRU. S. VENKATESAN,
KRISHNAGIRI.

GEOLOGICAL RESERVES

Section	Bench	length in (m)	Width in (m)	Depth in (m)	Top Soil in m3	Total Reserve m3	Recoverable Reserve (Grey Granite) 40% in m3	Granite Waste 60% in m3
TOP SOIL								
XY-A1B1	I	75	120	1	9000			
XY-A2B2	I	42	140	1	5880			
XY-A3B3	I	1	69	1	69			
XY-A4B4	I	28	155	1	4340			
TOTAL					**19289**			
GREY GRANITE								
XY-A1B1	II	75	120	5		45000	18000	27000
	III	75	120	5		45000	18000	27000
	IV	75	120	5		45000	18000	27000
	V	75	120	5		45000	18000	27000
	VI	75	120	5		45000	18000	27000
	VII	75	120	5		45000	18000	27000
XY-A2B2	II	42	140	5		29400	11760	17640
	III	42	140	5		29400	11760	17640
	IV	42	140	5		29400	11760	17640
	V	42	140	5		29400	11760	17640
	VI	42	140	5		29400	11760	17640
	VII	42	140	5		29400	11760	17640
XY-A3B3	II	44	79	5		17380	6952	10428
	III	59	99	5		29205	11682	17523
	IV	59	139	5		41005	16402	24603
	V	59	139	5		41005	16402	24603
	VI	59	139	5		41005	16402	24603
	VII	59	139	5		41005	16402	24603
XY-A4B4	II	28	155	5		21700	8680	13020
	III	63	177	5		55755	22302	33453
	IV	63	177	5		55755	22302	33453
	V	63	177	5		55755	22302	33453
	VI	63	177	5		55755	22302	33453
	VII	63	177	5		55755	22302	33453
TOTAL					**19289**	**957480**	**382992**	**574488**

Top Soil	=	19289 m^3
Total Geological Reserves in ROM	=	957480 m^3
Recoverable Reserves @ 40% (Grey Granite)	=	382992 m^3
Granite Waste @ 60%	=	574488 m^3
Total Waste	=	593777 m^3
Granite waste ratio:	=	1:1.55

(* Total Waste- Top soil + Granite waste)

ANNEXURE-II

MINEABLE RESERVE
(Please Refer Plate No.VII & VII-A)

THIRU. S. VENKATESAN,
KRISHNAGIRI.

MINEABLE RESERVES								
Section	Bench	length in (m)	Width in (m)	Depth in (m)	Top Soil in m3	Total Reserve m3	Recoverable Reserve (Grey Granite) 40% in m3	Granite Waste 60% in m3
TOP SOIL								
XY-A1B1	I	66	98	1	6468			
XY-A2B2	I	42	125	1	5250			
XY-A3B3	I	1	50	1	50			
XY-A4B4	I	20	117	1	2340			
TOTAL					**14108**			
GREY GRANITE								
XY-A1B1	II	65	96	5		31200	12480	18720
	III	60	86	5		25800	10320	15480
	IV	55	76	5		20900	8360	12540
	V	50	66	5		16500	6600	9900
	VI	45	56	5		12600	5040	7560
	VII	40	46	5		9200	3680	5520
XY-A2B2	II	42	123	5		25830	10332	15498
	III	42	113	5		23730	9492	14238
	IV	42	103	5		21630	8652	12978
	V	42	93	5		19530	7812	11718
	VI	42	83	5		17430	6972	10458
	VII	42	73	5		15330	6132	9198
XY-A3B3	II	44	58	5		12760	5104	7656
	III	59	74	5		21830	8732	13098
	IV	59	109	5		32155	12862	19293
	V	59	99	5		29205	11682	17523
	VI	59	89	5		26255	10502	15753
	VII	59	79	5		23305	9322	13983
XY-A4B4	II	19	115	5		10925	4370	6555
	III	49	128	5		31360	12544	18816
	IV	44	118	5		25960	10384	15576
	V	39	108	5		21060	8424	12636
	VI	34	98	5		16660	6664	9996
	VII	29	88	5		12760	5104	7656
TOTAL					**14108**	**503915**	**201566**	**302349**

Top Soil = 14108 m^3
Total Mineable Reserves ROM = 503915 m^3
Recoverable Reserves @ 40% (Grey Granite) = 201566 m^3
Granite Waste @ 60% = 302349 m^3
Total Waste = 316457 m^3
Granite Waste ratio: = 1:1.56
(* Total Waste- Top soil + Granite waste)

ANNEXURE-III

YEARWISE DEVELOPMENT & PRODUCTION SCHEDULE

(Please Refer Plate No.V & V-A)

THIRU. S. VENKATESAN,
KRISHNAGIRI.

YEARWISE DEVELOPMENT & PRODUCTION RESERVES

Year	Section	Bench	length in (m)	Width in (m)	Depth in (m)	Total Reserve m3	Grey Granite Production Recovery 40% in m3	Granite Waste 60% in m3
04.03.2021 to 03.03.2022	XY-AB	II	8	5	5	200	80	120
		III	50	20	5	5000	2000	3000
		TOTAL				**5200**	**2080**	**3120**
04.03.2022 to 03.03.2023	XY-AB	III	15	20	5	1500	600	900
		IV	13	54	5	3510	1404	2106
		TOTAL				**5010**	**2004**	**3006**
04.03.2023 to 03.03.2024	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
04.03.2023 to 03.03.2024	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
04.03.2023 to 03.03.2024		IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
	GRAND TOTAL					**25600**	**10240**	**15360**

Total Reserves ROM = 25600 m^3

Total production for the next Five Years (40%) (Grey Granite) = 10240 m^3

Granite waste (60%) = 15360 m^3

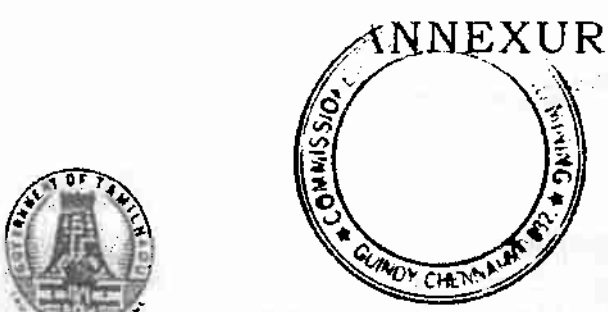
Total Waste = 15360 m^3

Granite: Waste ratio is = 1:1.5

(* Total Waste- Granite waste)

S.DHANASEKAR, M.Sc.,(Geo)
RQP/14AS/825/2011/A

ANNEXURE – IV



ABSTRACT

Mines and Quarries – Minor Minerals – Grey Granite – Krishnagiri District, Krishnagiri Taluk, Jagadevipalayam Village – Grant of quarry lease to quarry Grey Granite – Over an extent of 3.22.0 hectares of patta lands in S.F.No.9(Part) – Quarry lease application of Thiru S. Venkatesan, Krishnagiri District - Sanctioned - Orders – Issued.

Industries (MME.2) Department

G.O. (3D) No. 31

Dated : 22.2.2016
திருவள்ளுவர் ஆண்டு 2047
மன்மத ஆண்டு, மாசி 10.

1. From Thiru S. Venkatesan, Krishnagiri District Quarry Lease application Dated 06.12.2013.
2. From the District Collector, Krishnagiri Letter ROC No. No.737/ 2013/Mines-1, dated 22.06.2015.
3. From the Commissioner of Geology and Mining, File No.5273/ MM5/2015, dated 13.07.2015.
4. Government Letter No.11337/MME2/2015-1, dated 10.12.2015.
5. From the Commissioner of Geology and Mining, Letter No.5273/ MM5/2015, dated 06.01.2016.
6. From the Member Secretary, State Level Environment Impact Assessment Authority, Chennai-15, Letter No.SEIAA/TN/ F.No.4964/EC/1(a)/2863/2015, dated 15.02.2016.

******

ORDER:

Thiru. S. Venkatesan, Krishnagiri District has applied for grant of lease to quarry Grey Granite Over an extent of 3.22.0 hectares of patta lands in S.F.No.9(Part) of Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District for a period of 20 years under rule 19A of the Tamil Nadu Minor Mineral Concession Rules, 1959.

2. The District Collector Krishnagiri, has recommended and forwarded the application of Thiru. S. Venkatesan, Krishnagiri District, 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 individual and communicated the area recommended by the Commissioner of Geology and Mining as precise area and requested the applicant company 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. Accordingly, the Commissioner of Geology and Mining 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 order 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.

4. The Government in Letter fourth read above have also directed the applicant to obtain and submit the Environmental Clearance from the State Level Environment Impact Assessment Authority. The State Level Environment Impact Assessment Authority in their letter sixth read above have accorded Environmental Clearance subject to certain conditions.

5. The Government after careful examination have decided to grant lease to quarry Grey Granite to Thiru. S. Venkatesan, Krishnagiri District in patta lands mentioned in para 1 above.

6. In exercise of powers conferred under Rule 19A of theTamil Nadu Minor Mineral Concession Rules, 1959, the Governor of Tamil Nadu hereby grants quarry lease to Thiru.S. Venkatesan, Krishnagiri District for quarrying Grey Granite over an extent of 3.22.0 hectares of patta lands in S.F.No.9(Part) of Jagadevipalayam Village, Krishnagiri 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 State Level Environment Impact Assessment Authority in their Letter No.SEIAA/ TN/F.No.4964/ EC/1(a) / 2863/ 2015, dated 15.02.2016.

1. A safety distance of 7.5 mts. should be left out for the adjacent patta lands.
2. No hindrance shall be caused to the adjacent pattadars lands.
3. 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 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.
4. 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 27.02.2012 in IA 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.
5. The applicant should submit latest Mining due Clearance Certificate, Income Tax Clearance Certificate and Solvency Certificate before the execution of lease deed.
6. The lessee shall strictly adhere to the statutory and safety requirements.

7. The waste materials should not be dumped in the river and no hindrance should be caused to the flow of water in the river.

8. 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.

9. 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.

10. The District Collector, Krishnagiri shall obtain a sworn-in-affidavit from the applicant containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No.12789/ MMB2/2002-7, Industries Department, dated: 9.1.2003 are complied with.

7. The Collector of Krishnagiri District is requested 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 Commissioner of Geology and Mining.

8. The District Collector, Krishnagiri is also directed to verify and to furnish a certificate to the effect that all lease deed conditions and other conditions mentioned in paragraph 6 above have been compiled with and 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 State Level Environment Impact Assessment Authority, Chennai-15, Letter No.SEIAA/TN/ F.No.4964/EC/1(a)/2863/15, dated 15.02.2016.

(BY ORDER OF THE GOVERNOR)

C.V. SANKAR
ADDITIONAL CHIEF SECRETARY TO GOVERNMENT

To
Thiru S.Venkatesan, S/o. Subban,
26/1, CB Road, Bargur (Post), Krishnagiri Taluk & District.

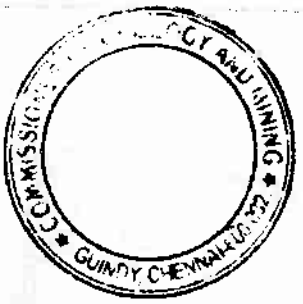
The Commissioner of Geology and Mining,
Guindy, Chennai-600 032.

The District Collector, Krishnagiri.

Copy to:
The Special P.A. to Hon'ble Minister (Industries & Transport) Chennai-9.
Industries (OP II) Department, Chennai -9.
SF/SC

// Forwarded By Order //

S. Vasanthakumar 22.2.16
Section Officer
22/2/2016



ANNEXURE

G.O (3D) No.31 , Industries (MME.2) Department, dated:22.02.2016.

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 authroized by the District Collector or any officer authorized by him in this behalf 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 metres 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 or 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.

C.V. SANKAR
ADDITIONAL CHIEF SECRETARY TO GOVERNMENT

// True Copy //

S. Vasanthakumar
SECTION OFFICER 22.2.16

22/2/2016

S.D HANASEKAR, M.Sc.,(Geo)
RQP/MAS/225/2011/A

ANNEXURE - V

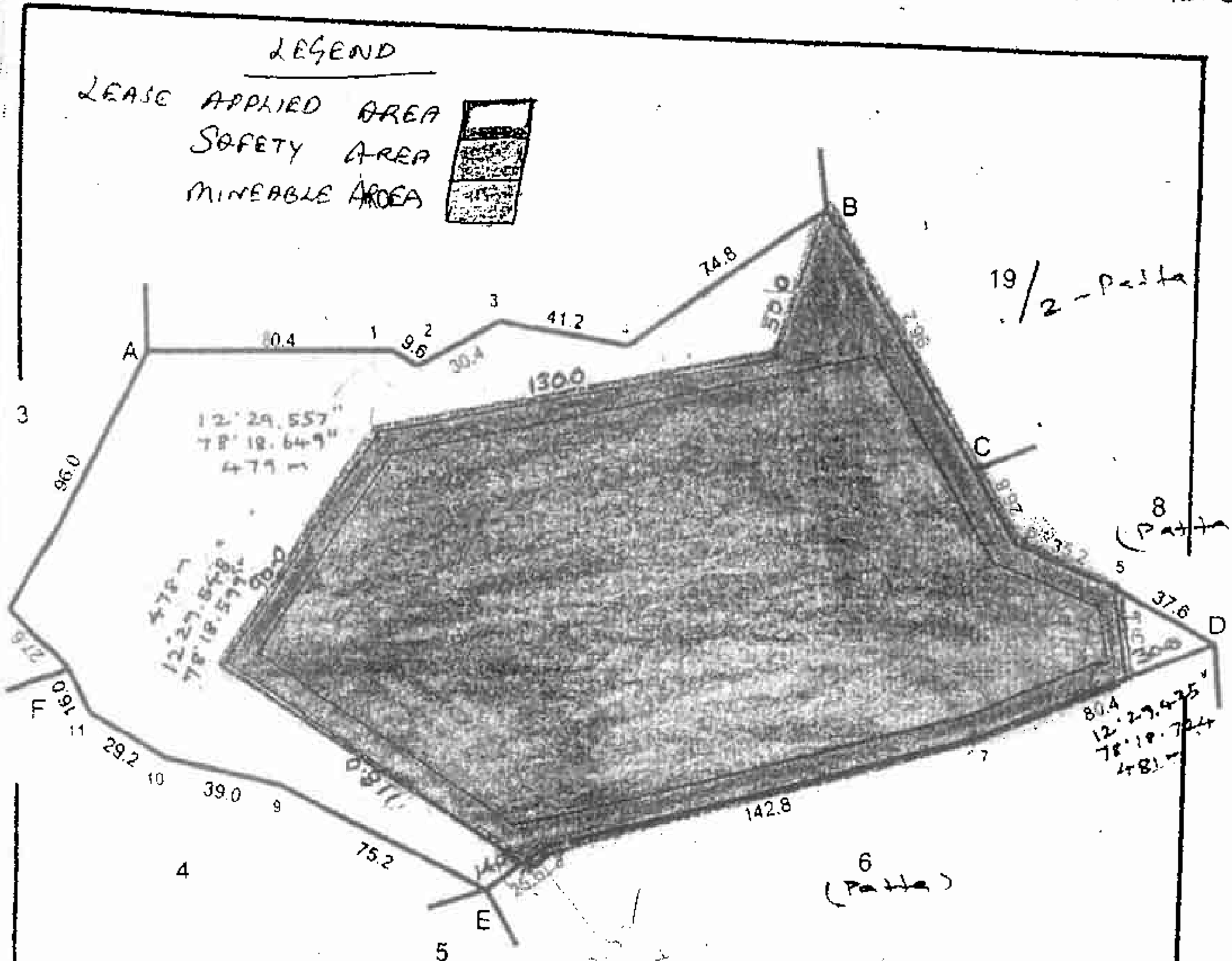
மாவட்டம்: கிருஷ்ணகிரி

வட்டம்: கிருஷ்ணகிரி

கிராமம் { எண் 138, பெயர் ...

புலஎண்: 9

பரப்பு: ஹெக்டேர் 4 ஏர் 81.5



ஆட்சியர் கிருஷ்ணகிரி.

25/3/15

S.DHANASEKAR, M.Sc.,(Geo)
RQP/MAS/225/2011/A

கனிமங்கள் வெட்டி எடுக்க உரிமம் கோரும் பகுதி

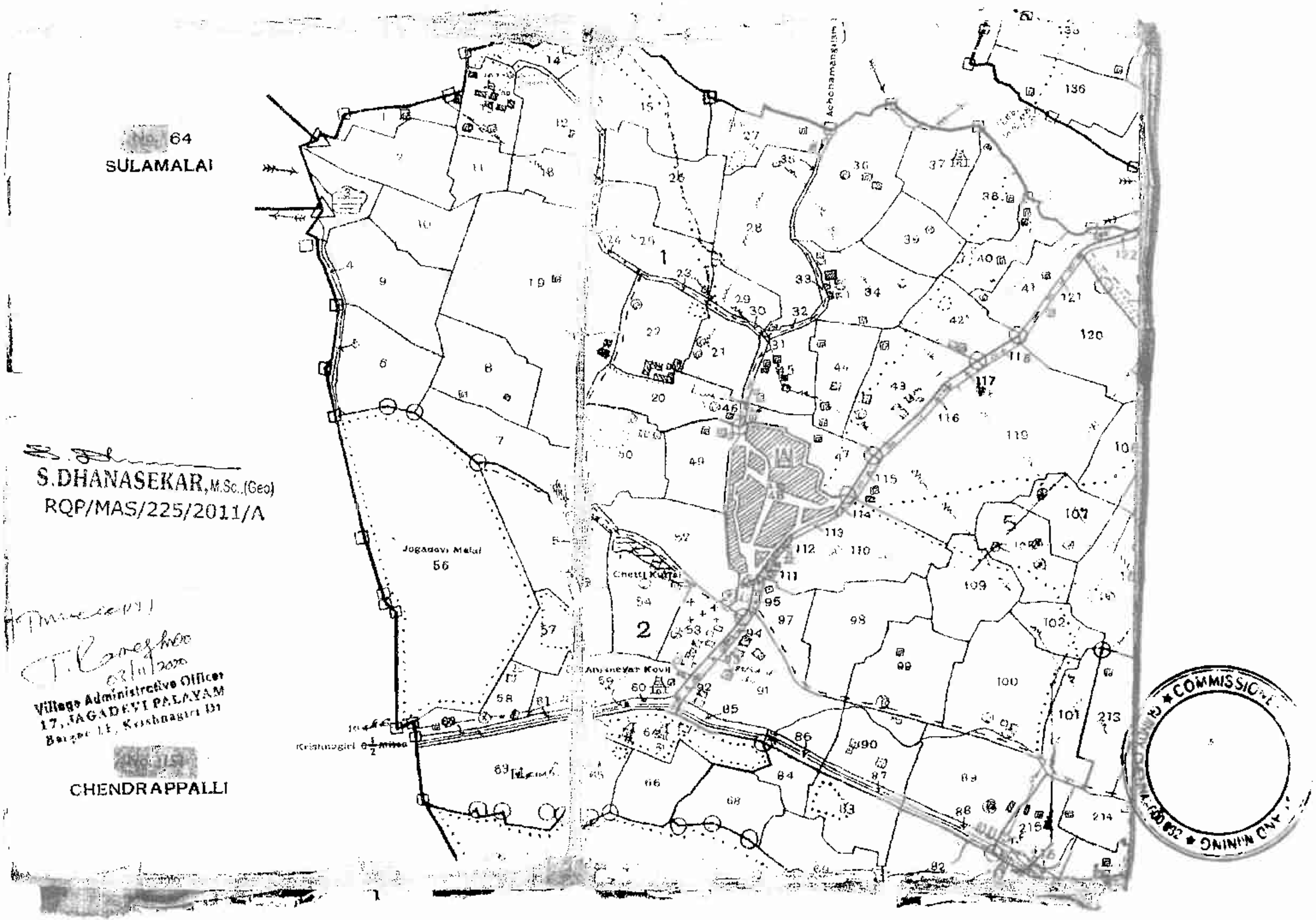
புலஎண்: 9

கனிம கற்கள் வெட்டி எடுக்க உரிமம் கோரும் பரப்பு 3.22.0

அளவு: 1 செ.மீ: 2000 செ.மீ

TALUK SUB INSPECTOR OF SU

ANNEXURE - V -



No. 64
SULAMALAI
S.DHANASEKAR, M.Sc.,(Geo)
RQP/MAS/225/2011/A
Village Administrative Officer
17, JAGADEVI PALAYAM
Jogadevi Malai
56
Chetti Kuttai
Anjaneyar Kovil
Achchamangalam
CHENDRAPPALLI
COMMISSIONER

ANNEXURE – V 891/2016

भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000 पच्चीस हजार रुपये

Rs. 25000 TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU

B 436166

3992
4.3.2016

S. Venkatesan.
S/o Subban.
China Bargur.

P. RAVICHANDRAN
STAMP VENDER,
L.No. 20389/B1/91
BARUGUR. TAMIL NADU.

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 31 Industries (MME.2) Department Dated 22.02.2016

THIS AGREEMENT MADE THIS 04th day of March 2016 between 1) Thiru S.Venkatesan, S/o Subban, residing at 26/1 CB Road, Bargur (post), Krishnagiri Taluk & District. 2) Thiru G. Jayapalan, S/o B.K. Govindaraj,residing at 43/2, Hospital Road, Bargur Post, KRishnagiri Taluk & District (hereinafter referred to as "the registered holders" which expression shall where the context so admits include also their heirs, executors, administrators, legal representatives and assigns) of the first part and Thiru S.Venkatesan, S/o Subban, residing at 26/1 CB Road, Bargur (post), Krishnagiri Taluk & District.

Registered holders

LESSEE

DOCUMENT No: 891/2016

DISTRICT COLLECTOR,
KRISHNAGIRI.

3993
4.3.2016

S. Venkatesan.
Chinnapargur.

(hereinafter referred to as "the lessee" which expression shall where the context so admits shall include his heirs, executors, administrators, legal representatives and 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.

S. Venkatesan.

Registered holders

DISTRICT COLLECTOR,
KRISHNAGIRI.

S. Venkatesan.
LESSEE

DOCUMENT
No. 891/2016
Page No. 2
Total Pages No. 48

-3-

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. 31 Industries (MME.2) Department dated 22.02.2016.

Registered holders

LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

DOCUMENT No: 891/2016
Page No: 3
Total Pages No: 42

भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000 पच्चीस हजार रुपये

Rs. 25000 TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU

B 436169

P. RAVICHANDRAN
STAMP-VENDER,
L.No. 23385/B1/81
BARUGUR, TAMIL NADU.

-4-

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 04th day of March 2016 and ending on — 3rd day of March 2036 upon the registered holder and the lessee entering into the agreement here in contained.

AND WHEREAS the lessee has deposited with the collector, the sum of Rs. 20,000/- (Rupees twenty thousand only) vide challan No. Nil dated 23.02.2016 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.

Registered holders

LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

DOCUMENT
No: 891 /2016
Page No: 4
Total Pages No: 48

தமிழ்நாடு தமிழ்நாடு TAMILNADU

B 436170

P. RAVICHANDRAN
STAMP-VENDER,
L.No. 23385/B1/61
BARUGUR, TAMIL NADU

-5-

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.

Registered holders

LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

DOCUMENT
No: 891/2016
Page No: 5

भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000 पच्चीस हजार रुपये

Rs. 25000 TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு தமிழ்நாடு TAMILNADU ₹ 25000/-

B 436171

3987 / 2016

S Venkatesan. Chinna Bargur.

P. RAVICHANDRAN
STAMP-VENDOR,
L.No. 29369/B1/91
BARUGUR, TAMIL NADU

2. To pay on the 31st day of March 2017 next and on the day of every succeeding 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, scigniorage 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.

3. To abide by the rules prescribed by the Government from time to time regarding quarrying of minor minerals.

S. Venkatesan.

Registered holderds

7/17

S. Venkatesan.
LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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தமிழ்நாடு தமிழ்நாடு TAMILNADU e.25000/ B 436172

3998 / 4.3.2016

S. Venkatesan
Chinnaburgur.

P. RAVICHANDRAN
STAMP VENDER,
L.No. 23389/81/81
SARUGUR, TAMIL NADU.

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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.

S. Venkatesan.

Registered holders

S. Venkatesan
LESSEE

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DISTRICT COLLECTOR,
KRISHNAGIRI.

தமிழ்நாடு TAMILNADU ₹2500/- B 436173

S. Venkatesan
Chinna Bargur.

P. RAVICHANDRAN
STAMP-VENDER,
Lic.No. 23385/B1/81
BARUGUR, TAMIL NADU.

3999
4.3.2016

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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:-

S. Venkatesan

Registered holders

S. Venkatesan.

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DISTRICT COLLECTOR,
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भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000 Rs. 25000

पच्चीस हजार रुपये TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU B 436174

P. RAVICHANDRAN
STAMP VENDER
L.No. 2336
BARUGUR, TAMIL NADU

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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 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.

Registered holders

LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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தமிழ்நாடு TAMILNADU @ 25000/ B 436175

S. Venkatesan.
Chinnabargu

P. RAVICHANDRAN
STAMP-VENDOR,
L.No. 23365/F1/(A)
BARUGUR, TAMIL NADU.

4001
4.3.2016

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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

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Registered holders

S. Venkatesan.
LESSEE

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भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000 पच्चीस हजार रुपये

Rs. 25000 TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU

B 436176

P.RAVICHANDRAN
STAMP-VENDER.
L.No: 23386/...
BARUGUR, TAMILNADU.

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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 20,000/- (Rupees twenty 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.

Registered holders

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DISTRICT COLLECTOR,
KRISHNAGIRI.

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भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000 पच्चीस हजार रुपये

Rs. 25000 TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU

B 436177

P. RAVICHANDRAN STAMP VENDER, L.No. 23385/B-/91 BARUGUR, TAMIL NADU

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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.

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.

Registered holders

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DISTRICT COLLECTOR,
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भारत

रु. 25000 पच्चीस हजार रुपये

Rs. 25000 TWENTY FIVE THOUSAND RUPEES

INDIA

G தமிழ்நாடு TAMILNADU ₹25000/-

B 436178

P. RAVICHANDRAN
STAMP VENDER,
L.No. 23385/01/01
BARUGUR, TAMIL NADU

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S. Venkatesan.
Chinnabargur.

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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.

S. Venkatesan.

Registered holders

S. Venkatesan,
LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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தமிழ்நாடு தமிழ்நாடு TAMILNADU ₹ 25000/- B 436179

P. RAVICHANDRAN
STAMP-VENDOR,
L.No. 23385/81/01
BARUGUR, TAMIL NADU

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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.

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.

Registered holders

LESSEE

15/43

DISTRICT COLLECTOR,
KRISHNAGIRI.

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B 436180

P. RAVICHANDRAN
STAMP VENDER,
L.No. 23385/81/84
BARUGUR, TAMIL NADU

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S. Venkatesan.
Chinnaburgur.

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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.

S. Venkatesan.

Registered holders

S. Venkatesan.
LESSEE

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DISTRICT COLLECTOR,
KRISHNAGIRI.

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தமிழ்நாடு तमिलनाडु TAMILNADU

B 436181

P. RAVICHANDRAN
STAMP-VENDER,
L.No. 23385/B1/81
BARUGUR, TAMIL NADU

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14. Anticipated seigniorage for the minerals to be quarried from the demised land is Rs. 9,72,40,000/- (Rupees nine crors sevety two lakhs and foruty thousand) area assessment of Rs. 12,920/- (Rupees twelve thousand nine hundered and twenty only) and security deposit amount of Rs. 20,000/- were taken into account for the purpose of calculation of stamp duty.

15. The lease period starts from the 04th day of March 2016 and ends on the 03rd day of March 2036.

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.

Registered holders

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DISTRICT COLLECTOR,
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B 436182

P. RAVICHANDRAN
STAMP-VENDER.
L.No. 23385/B1/761
BARUGUR, TAMIL NADU.

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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.

21. **Special Conditions:**

(1) The lessee should be left out a safety distance of 7.5 mts. to the adjacent patta lands.

(2) The lessee should no cause any hindrance shall be caused to the adjacent pattadars land.

(3) Environmental 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 27.02.2012 in IA No. 12-13/2011 in SLP (c) No. 19629/2009 and office Memorandum No. L. 11011/47/2011-IA II(M) dated 18.05.2012 of the Ministry of Environment & Forests, Government of India.

S. Venkatesan.

Registered holders

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LESSEE

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DISTRICT COLLECTOR,
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भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000

Rs. 25000

पच्चीस हजार रुपये

TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU

B 436183

P. RAVICHANDRAN
STAMP-VENDER,
L.No. 23385/B1/81
BARUGUR, TAMIL NADU

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(4)The lessee shall strictly adhere to the statutory and safety requirements.

(5) The waste materials should not be dumped in the river and no hindrance should be caused to the flow of water in the river.

(6). 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.

(7).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.

(8). The lessee should comply the instructions issued in Government letter No. 12789/MMB2/2002-7 Industries Department dated 9.1.2003.

Registered holders

LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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தமிழ்நாடு தமிழ்நாடு TAMILNADU ₹ 25000/ B 436184

P. RAVICHANDRAN
STAMP-VENDER,
L.No. 23385/B1/61
BARUGUR, TAMIL NADU.

4010
4.3.2016
S. Venkatesan
Chinna Barguv

(9). The lessee should strictly adhere all the conditions imposed by State Level Environment Impact Assessment Authority in their Letter No. SEIAA, TN/F No.4964/EC/1 (a) 2863/2015, dated 15.02.2016 during the entire lease period without any violations.

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.

S. Venkatesan
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Registered holders

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LESSEE

DISTRICT COLLECTOR,
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தமிழ்நாடு TAMILNADU

B 436185

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Chinna Bargur.

P. RAVICHANDRAN
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L.No. 23386/B1/81
BARUGUR, TAMIL NADU

(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 conservation of minerals and preservation of enviornment ecology.

S. Venkatesan.

Registered holders

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LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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P. RAVICHANDRAN
STAMP-VENDER,
L.No. 23385/81/81
BARUGUR, TAMIL NADU.

4012
4.3.2016

S. Venkatesan
Chinna Bargur.

(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.

S. Venkatesan

Registered holders

S. Venkatesan.
LESSEE

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DISTRICT COLLECTOR,
KRISHNAGIRI.

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தமிழ்நாடு தமிழ்நாடு TAMILNADU ₹2500/ B 436187

P. RAVICHANDRAN
STAMP-VENDER
L.No. 23385/51/81
BARUGUR, TAMIL NADU

S. Venkatesan.
Chinna Bargur.

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(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.

S. Venkatesan.

Registered holders

S. Venkatesan.
LESSEE

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DISTRICT COLLECTOR,
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தமிழ்நாடு TAMILNADU

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(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

Registered holders.

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DISTRICT COLLECTOR,
KRISHNAGIRI.

தமிழ்நாடு तमिलनाडु TAMIL NADU e.25000/ B 436189

P. RAVICHANDRAN
STAMP VENDOR
L.No. 23365/B1/61
BARUGUR, TAMIL NADU

4015/4.3.2016

S. Venkatesan
Chinna Bagur

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 State Level Environment Impact Assessment Authority

I. The Environmental Clearance will be coterminous with the mine lease period or limited to a maximum period of 5 years from the date of issue whichever is earlier.

S. Venkatesan

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S. Venkatesan
LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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B 436190

P. RAVICHANDRAN
STAMP-VENDER,
L.No. 28385/B1/81
BARUGUR, TAMIL NADU

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II. A. Conditions to be complied before commencing quarrying operations:-

(1). The lessee has to obtain land use classification as industrial use before issue/ renewazl of mining lease.

(2). NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 km 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

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B 436191

4017
4.3.2016

S. Venkatesan.
ChinnaBargur.

P. RAVICHANDRAN
STAMP-VENDER,
L.No. 23305/B1/81
BARGUR, TAMIL NADU.

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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.

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Registered holders

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ChinnaBargur.

4018
4.3.2016

P.RAVICHANDRAN
STAMP-VENDER,
L.No. 23985/B1/01
BARUGUR, TAMIL NADU

(8). The excavated pit shall be restored by the project proponent for useful purposes.

(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.

(12). A minimum distance of 15 mts. From any civil structure shall be kept from the periphery of any excavation area.

S.Venkatesan.

Registered holders

S.Venkatesan.
LESSEE

29/4/16
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KRISHNAGIRI.

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भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000 Rs. 25000

पच्चीस हजार रूपये TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU B 436193

P. RAVICHANDRAN
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L.No. 23385/B1/81
BARUGUR, TAMIL NADU

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(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.

Registered holders

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DISTRICT COLLECTOR,
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रु. 25000 Rs. 25000

पच्चीस हजार रुपये TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU e.25000/- B 436194

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4.3.2016

S. Venkatesan, Chinna Bargur.

P. RAVICHANDRAN
STAMP-VENDER,
L.No. 23385/B1/93
BARUGUR, TAMIL NADU

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(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.

S. Venkatesan

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LESSEE

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भारत

रु. 25000 पच्चीस हजार रुपये

Rs. 25000 TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU

B 436195

4021
4.3.2016

S. Venkatesan.
Chinna Bargur

P. RAVICHANDRAN
STAMP VENDER.
L.No. 23385/81
BARUGUR, TAMIL NADU

(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.

(21). The following measures are to be implemented to reduce Air Pollution during transportation of mineral

(i). Roads shall be graded to mitigate the dust emission.

(ii). Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust.

Registered holders

LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

3/43

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தமிழ்நாடு TAMILNADU ₹ 25000/ S. Venkatesan Chinna Bargur, B 436196

40022 4.3.2016

P. RAVICHANDRAN
STAMP-VENDOR
L.No. 23386/B1/61
TARUGUR, TAMIL NADU

(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.

S. Venkatesan.

Registered holders

S. Venkatesan.
LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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தமிழ்நாடு தமிழ்நாடு TAMILNADU e 25000/ B 436197

Sivenkatesan
Chinnabungu.

P. RAVICHANDRAN
STAMP VENDER,
L.No. 23365/61/01
BARGUR, TAMIL NADU.

4093
4/3/2016

(24). Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.

(25). Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.

(26). Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.

Sivenkatesan.

Registered holders

Sivenkatesan.
LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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தமிழ்நாடு तमिलनाडु TAMILNADU ₹ 2500/ B 436198

P. RAVICHANDRAN
STAMP VENDOR,
LIC. 23385/51/81
BARUGUR, TAMIL NADU

4024/4.3.2016

S. Venkatesan.
Chinnabargur.

(27). The following measures are to be adopted to control erosion of dumps:-

i. Retention/ toe walls shall be provided at the foot of the dumps.

ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.

(28). Waste oils, used oils generated from the EM machines, mining operations if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.

S. Venkatesan.

Registered holders

S. Venkatesan.
LESSEE

34/43
DISTRICT COLLECTOR,
KRISHNAGIRI.

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भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु.5000 Rs.5000

पाँच हजार रुपये FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU @ 5000/- R 838162

4025
4.3.2016

S. Venkatesan, Chinnabargur

P. RAVICHANDRAN
STAMP-VENDER.
L.No. 23385/B1/81
BARUGUR, TAMIL NADU

(29). Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(30). Rain water harvesting to collect and utilize the entire water falling in land area should be provided.

(31). Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be 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

S. Venkatesan.

Registered holders

S. Venkatesan,
LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.

(32). The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out. District Collector / Mining officer shall ensure this.

(33). No tree-felling shall be done in the leased area, except only with the permission from competent Authority.

(34). To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/ disposed and method of disposal, involving a reputed academic Institution.

(35). It shall be ensured that the total extent of nearby quarries 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.

J. Venkatesan

Registered holders

J. Venkatesan

LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

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(39). Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF,GOI.

(40). Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI.

(41). Bunds to be provided at the boundary of the project site.

(42). Ground water quality monitoring should be conducted once in 3 Months.

(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 levelled 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.

S. Venkatesan,

Registered holders

S. Venkatesan,
LESSEE

27/4/16
DISTRICT COLLECTOR,
KRISHNAGIRI.

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(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 requipments to be provided to all the employees.

(54) Safty distance of 50 mts has to be provided incase of railway reservoier canal / Odai.

(55) The EC is valid only if the scheme of the mining plan is approved by the Commissioner of Geology & Mining or any officers nominated on his behalf.

(56) If there is any change in the proposal of production or handing the waste amendment has to be submitted to SEIAA for further approval.

(57) The EC is approved as per the G.O No. 79 & Rule 41 &42 of Tamil Nadu Mining Mineral Concession Rule1959.

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.

Registered holders

LESSEE

DISTRICT COLLECTOR
KRISHNAGIRI.

(8). Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.

(9). Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.

(10). Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.

(11). All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

(12). Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.

(13). Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.

(14). The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.

(15). The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its regional office located at Chennai.

(16). The Environmental Clearance does not absolve the applicant/ proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.

S. Venkatesan

Registered holders

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39/43

(17). This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.

(18). The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.

(19). The SEIAA, Tamil Nadu may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this SEIAA.TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the environmental clearance.

(20). Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

(21). The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules,2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

(22). Any other conditions stipulated by other Statutory/Government authorities shall be complied.

24. The conditions imposed by the TNPCB in the consent order should be adhered without any ommission.

25. The Environmental clearance and the consent of the TNPCB should be renewed periodically without any lapse.

26. If any illicit quarrying is found in the area Overn an extent of 3.22.0 Hecters in S.F. No. 9 (Part) of Jagadevipalayam Village, Krishnagiri Taluk and District before the date of execution of lease deed, this lease deed is liable to be cancelled and criminal action will be initiated.

S. Venkatesan

Registered holders

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THE SCHEDULE

Taluk : KRISHNAGIRI.

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.	9 (Part)	3.22.0	9 (part)	8,9 Part 10/2	6	9 (part)
	Total	3.22.0				

S. Venkatesan,

Registered holders

S. Venkatesan,
LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

IN WITNESS where of 1) S.Venkatesan, S/o Subban, residing at 26/1 CB Road, Bargur (post), Krishnagiri Taluk & District 2) Thiru G. Jayapalan, S/o B.K. Govindaraj, residing at 43/2, Hospital Road, Bargur Post, Krishnagiri Taluk & District . "the registered holders". S.Venkatesan, S/o Subban, residing at 26/1 CB Road, Bargur (post), Krishnagiri Taluk & District "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 Governor of Tamil Nadu have hereunto set their hands.

S. Venkatesan

Registered holders

S. Venkatesan

LESSEE

DISTRICT COLLECTOR,
KRISHNAGIRI.

Signed by the above named in the presence of

1. B. ENAYATHULLAH
S/o M.D. BASHA
48, Masal Kara Street
Neupet
Krishnagiri-635001

2. Murali. M
Ramachandram (Vill)
Denkanikottai (T.k)
Krishnagiri (D.t)

Signed by the above named in the presece of

1. (G. Rajakumaran)
ASSISTANT GEOLOGIST
o/o DEPUTY DIRECTOR
Department of geology and mining
Collectorate, Krishnagiri.

2. (L. KUPPUSAMY)
SPECIAL REVENUE INSPECTOR
Department of Geology and Mining
Collectorate, Krishnagiri.

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891/2016/BK1

Presented in the Office of Sub Registar of Bargur and fee of Rs. 20705 [illegible] between hours of 12 and 1 on 18/03/2016 by

1 Left Thumb

Additions As per the recitals of the document

Execution Admitted by

1 Left Thumb

Additions As per the recitals of the document

2 Left Thumb

Additions As per the recitals of the document

DOCUMENT No 891/2016 42 48

Endorsement Sheet no. 1 of 2

Execution Admitted by

I have satisfied my self as to the execution of the Instrument by Thiru KATHIRAVAN, I.A.S. who is exempted from Personal Appearance under Sec ... 1 KATHIRAVAN ...

S/o C. KATHIRAVAN .I.A.S.

DISTRICT COLLECTOR KRISHNAGIRI

Identified by

1 D. ... Name : 1 D. ... S/o ...

2 THIRUGNANAM Name : 2 THIRUGNANAM S/o ...

18th day of March 2016

Sub Registar

Bargur

Registered as No 891 of 2016 of Book I

Date : 18/03/2016 Sub Registar

Bargur

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Sub Registrar

Endorsement Sheet no. 2 of 2

From

Thiru. C. Kathiravan, I.A.S.,
District Collector,
Krishnagiri.

To

The Joint Sub Registrar-II
Krishnagiri.

Roc.No.737/2013/Mines-1 Dated: 04.03.2016

Sir,

Sub : Mines and Minerals – Minor Mineral – Krishnagiri District and Taluk – Jagadevipalayam Village – patta land - quarry lease for Grey granite granted in SF.No.9 (P) , over an extent of 3.22.0 Hect. to Thiru S.Venkatesan, S/o.Subban, Residing at 26/1 CB Road, Bargur Post, Krishnagiri Taluk and District - Lease agreement sent for registration – regarding.

Ref : G.O. (3D) No. 31 Industries (MME-2) Department dated 22.02.2016.

****

In the order cited, the Government have granted a quarry lease for Grey Granite over an extent of 3.22.0 Hect. S.F.No.9 (P) of Jagadevipalayam Village, Krishnagiri Taluk for a period of Twenty year from the date of execution of lease deed under Rule 19-A of the Tamil Nadu Minor Mineral Concession Rules, 1959 to Thiru. S.Venkatesan, S/o.Subban, Residing at 26/1 CB Road, Bargur Post, Krishnagiri Taluk and District. The lease agreement was executed on 04.03.2016 and the lease period is twenty years from 04.03.2016 to 03.03.2036.

The lessee Thiru S.Venkatesan, S/o.Subban, Residing at 26/1 CB Road, Bargur Post, Krishnagiri Taluk and District has been instructed to register the lease agreement at the Joint Sub-Registrar-II Office at Krishnagiri.

In this connection I am to inform you that the stamp duty worked out on the basis of the average seigniorage fee calculated on the average production of 1875 CBM of Grey granite during the entire lease period of twenty years and security deposit remitted by the lessee is as detailed below :

Seigniorage fee for 1875 CBM of Grey granite @ Rs.2210/- per CBM of Grey granite	:	Rs.8,28,75,000/-
Security Deposit	:	Rs. 20,000/-
Area Assessment	:	Rs. 12,880/-
Total	:	Rs. 8,29,07,880/-
Stamp duty at the rate of 1%	:	Rs. 8,29,078/- (or) 8,30,000/-
Total value of Stamp papers.	:	Rs. 8,30,000/-

The lease deed agreement is herewith enclosed for registration and return through the lessee.

I am also to state that I am 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 S.Venkatesan,
S/o.Subban,
Residing at 26/1 CB Road,
Bargur Post, Krishnagiri Taluk and District

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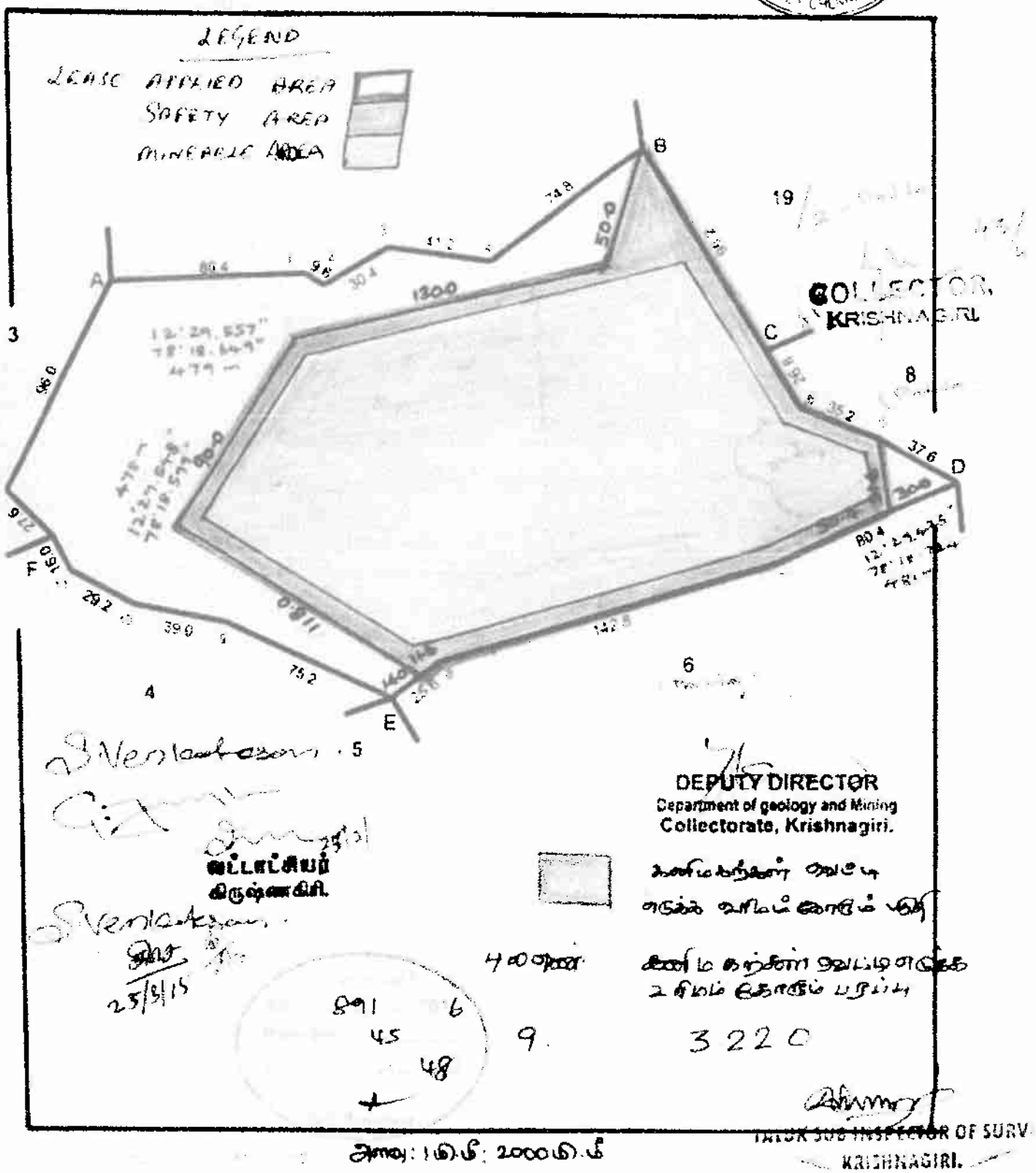
மாவட்டம்: கிருஷ்ணகிரி

வட்டம்: கிருஷ்ணகிரி

புலஎண்: 9

கிராமம்



COLLECTOR,
KRISHNAGIRI

DEPUTY DIRECTOR
Department of geology and Mining
Collectorate, Krishnagiri.

400 ஏக்கர்

3220

TALUK SUB INSPECTOR OF SURV.
KRISHNAGIRI.

அலகு: 1 மி.மீ: 2000 மி.மீ

India Driving Licence (Tamilnadu)
Form 7

DOB: 10/08/1982

D.L. No: TN29Z19820000578
Name: JAYAPALAN G
S/D/W of: B.K.GOVINDARAJ
Address:
43/2,HOSPITAL ROAD
BARGUR-PO
KRISHNAGIRI-TK&DT 635104

DOI: 30/05/1956

End. No: TN24 /DLA/0000450/2... 10/2013 12:34:1
Licence valid throughout India, vehicles of the following description:
MCWG 10/08/1982 TN29Z
HTV ...1996 TN29Z

Transport Veh. Valid Upto ...06/09/2016
Authorised to drive Transport Vehicle vide Badge No.
59098 Dt. 1... 72503

G. Jayapalan

G. Jayapalan
S. Venkatesan

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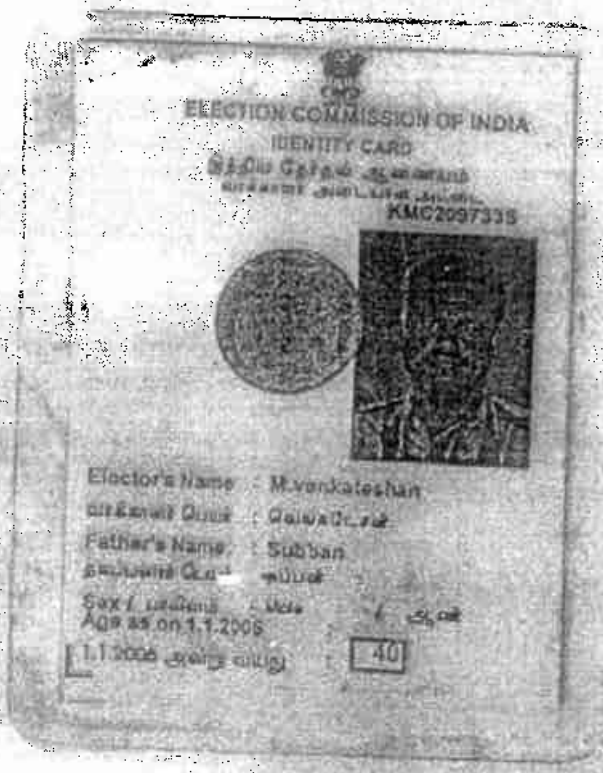
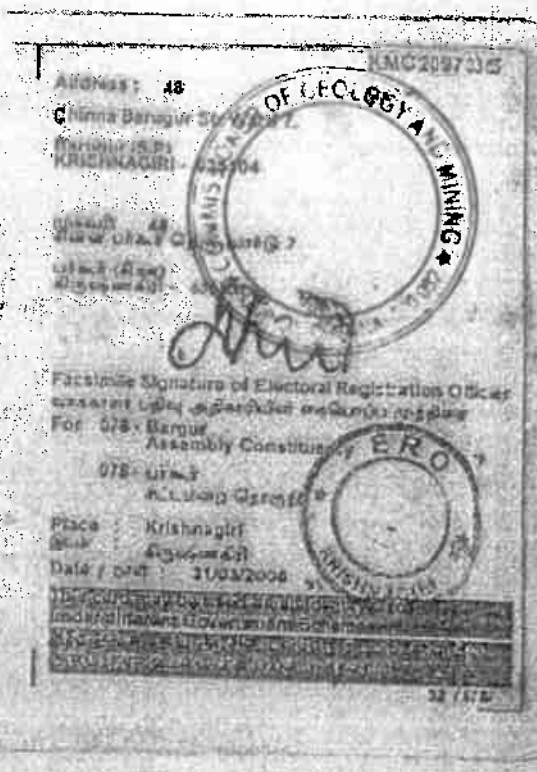

ELECTION COMMISSION OF INDIA
IDENTITY CARD
KMC2097335
Elector's Name : M.venkateshan
Father's Name : Subban
Sex / Age as on 1.1.2006 : Male / 40


KMC2097335
Alias : 48
KRISHNAGIRI - 635104
Facsimile Signature of Electoral Registration Officer
For 078- Bargur Assembly Constituency
Place : Krishnagiri
Date : 31/03/2006
ERO

M Venkatesan.

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Government of Tamil Nadu

Registration Department

Acknowledgement

Reference Details	
SRO Name	Bargur
Application No.	S01SVE1AA2016031700003326
Transaction No.	REG20160317004878
Transaction Date	17/03/2016

Application Details	
Applicant Name	S VENKATESH
Service Type	Document Registration (New) in SRO
Registration Fee	20450.00
IP Camera Fee	50.00

Payment Details	
Name Of the Bank	SBI
Bank Ref. No.	IKA6876387
Payment Mode	Online
Amount Paid	Rs.20500.00
Payment Date	17/03/2016

Printed On :17/03/2016 4.36 PM

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S.DHANASEKAR, M.Sc. (Geo)
RQP/MAS/225/2011/A

ANNEXURE VII

भारतीय गैर न्यायिक INDIA NON JUDICIAL

भारत

रु. 25000

पच्चीस हजार रुपये

Rs. 25000

TWENTY FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU

கிரய ஆவணம்

17.11.2011 இரண்டாயிரத்திபதினொன்றாம்ஆண்டு நவம்பர் மாதம் பதினேழாம் தேதியில்.....

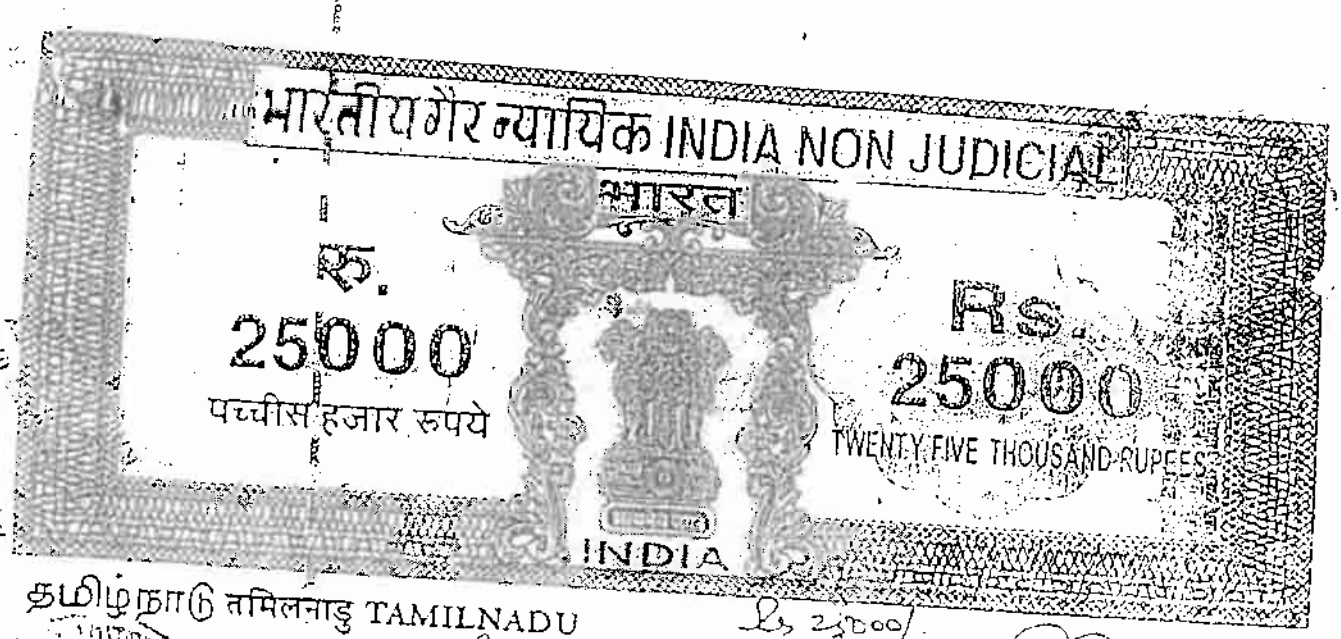
கிருட்டிணகிரி மாவட்டம் & வட்டம், பர்கூர் தரப்பு, சின்னபர்கூர் ரோடில் கதவு [illegible] 5 வீட்டில் குடியிருக்கும் G.சுப்பன் குமாரர் S.வெங்கடேசன்-1(Pan Card No.ADIPV21.2R), மேற்படி தரப்பு, பர்கூர் காந்திபஜாரில் கதவு எண் 77 வீட்டில் குடியிருக்கும் B.K.கோவிந்தராஜ் குமாரர் G.ஜெயபாலன்-2 (Pan Card No.AEZPJ3161J) ஆகிய உங்களுக்கு...

சென்னை மாநகரம், சென்னை-10, கீழ்பாக்கார்டன் காலனி, 35 மண்டபம் [illegible] பிளாட் 'B' (The Nest) L.M.பேலஸ் கதவு எண் 8 வீட்டில் குடியிருக்கும் சையத் ஏஜாஸ் அலி மனைவி நாசிமாபேகம் (Pan Card No.AGAPA9776H) ஆகிய நான் என் முழுமனதுசம்மதியில் எழுதி வைத்துக் கொடுத்த புஞ்சை நிலத்தின் சுத்த விக்கிரய ஆவணம் யாதெனில்...

எழுதிக்கொடுப்பவர்

NOC No: 343/2011

எழுதிவாங்குபவர்கள்



தமிழ்நாடு தமிழ்நாடு TAMILNADU

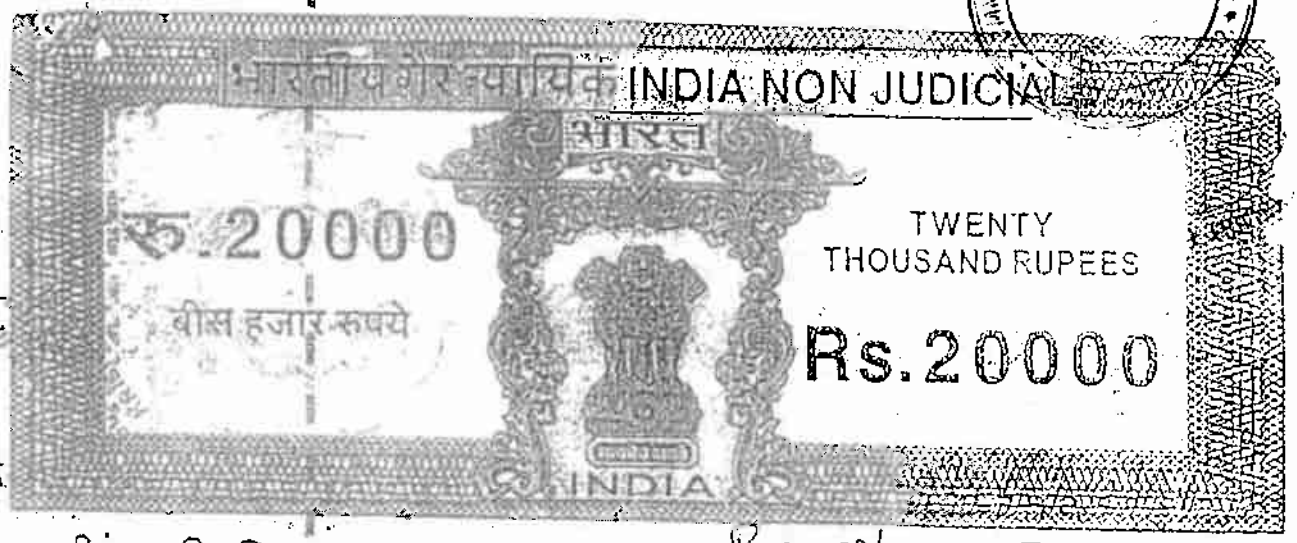
23459
16.11.2011

890239

T. RAVICHANDRAN
STAMP VENDER,
LIC. 23359/B1/731
BARUGUR, TAMIL NADU

இதனடியில் கண்டதும் எனக்கு பிதுரார்ஜிதமாயும், பட்டா எண் 402-ன்படியும் பாத்தியப்பட்டு என் சுவாதீன அனுபவத்தில் இருந்து வரும் சொத்தை தங்களுக்கு ரூ.11,89,000/-க்கு சுத்த விற்கிரயத்திற்கு கொடுப்பதாக விலைபேசி நிர்ணயம் செய்து கிரயச் சொத்தை நாளது தேதியில் தங்கள் பேருக்கு சுத்த விற்கிரயமும் சுவாத்தையும் செய்துக்கொடுத்து எனி குடும்பசெலவுக்காகவும் கடன தகராக்களை தீர்ப்பதற்காகவும் நாளது தேதியில் தங்களிடம் (Indian Overseas Bank Krishnagiri வங்கியில் DD No.867398 முலம் 16.11.2011 ஆம் தேதியில் ரூ.5,00,000/- (ரூபாய் ஐந்து லட்சம்) ரூபாய்களும் மற்றும் ரொக்கமாக ரூ.7,49,000/- ஏழு லட்சத்து நாற்பத்தி ஒன்பதாயிரம் எழுதிக்கொடுப்பவர்

எழுதிவாங்குபவர்கள்



தமிழ்நாடு TAMILNADU

23460
16.11.2011

552475

P. RAVICHANDRAN
STAMP VENDOR,
L.No. 23365/01/01
BARUGUR, TAMIL NADU

-3-

... ரூபாய்தீரும் மொத்தம் எனக்கு செல்லான வகையில் ரு.12,49,000/- பனிரெண்டு லட்சத்து நாற்பத்தி ஒன்பதாயிரம் ரூபாய்கள் மேற்படி வீதம் பெற்றுக்கொணடு இதனடியில் கூண்ட சொத்தை இன்று தங்கள் பேரில் கிரயம் செய்து இக்கிரயச் சொத்தை இன்றே தங்களூர் லசம் சுலாதீனப்படுத்தியுள்ளேன். இனி இக்கிரயசொத்தை இனறு முதல் தாங்களே கைப்பற்றி தங்கள் புத்திர பௌத்திர பாரம்பரியமாய் நானாதி வினுமய விற்கிரயங்களுக்கருகமாய் கிரய சாசனம் சர்வ சுதந்திரங்களுடன் ஆண்டு அனுபவித்தும் கொள்ள வேண்டியது.

எழுதிக்கொடுப்பவர்

எழுதிவாங்குபவர்கள்

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No: 3643 / 2011
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Total Pages 12

தமிழ்நாடு தமிழ்நாடு TAMILNADU

23461
16.11.2011

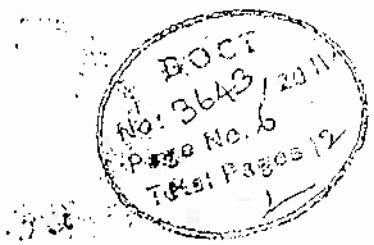
135606

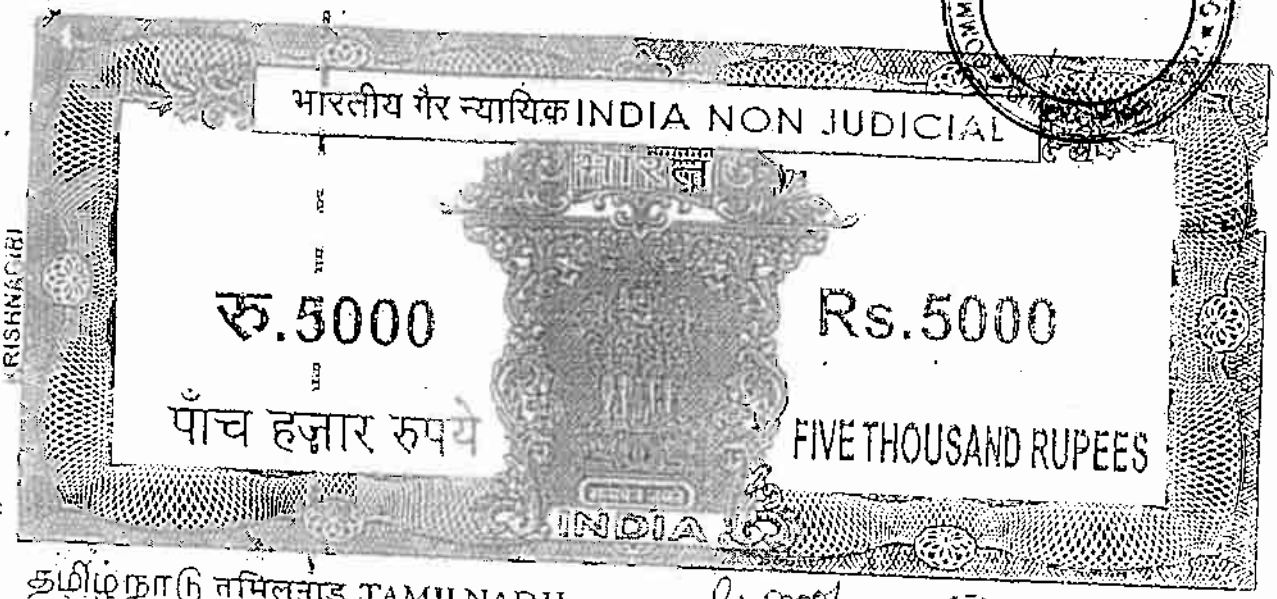
P. RAVICHANDRAN
STAMP-VENDOR
L.No. 23323/11/51
BARUGUR, TAMIL NADU

இனி இக்கிரயச் சொத்திற்க்கும் எனக்கும் என்னுடைய இதர ஆண், பெண் வாரிசுதாரர்களுக்கும் எவ்வித பாத்தியமும் சம்மந்த தொடர்ச்சியும் கிடையாது. இச்சொத்தின் பேரில் எவ்வித முன் வில்லங்கமோ தகராரோ எதுவும் கிடையாது. அப்படி ஏதேனும் உண்டானால் அதை நானே முன்னின்று என் சொந்த சிலவில் தீர்த்து வைத்துக் கொடுப்பதோடு சிவில் மற்றும் கிரிமினல் தரப்பு நடவடிக்கைகளுக்கும் உட்படுகிறேன். இந்தபடிக்கு நான் என் முழுமனச் சம்மதியில் எழுதிவைத்துக் கொடுத்த புஞ்சை நிலத்தின் சுத்த விற்பனை ஆவணம் சரி.

எழுதிக்கொடுப்பவர்

எழுதிவாங்குபவர்கள்





தமிழ்நாடு TAMILNADU

G 147025

P.RAVICHANDRAN
STAMP VENDOR
L.No. 2332/VB1/31
BARUGUR, TAMIL NADU

-5-

சொத்து விவரம்

கிருட்டிணகிரி பதிவு மாவட்டம், பர்கூர் சார்பதிவு மாவட்டம் ஜெகதேவிபாளையம் கிராம புல எண் 9 (ஒன்பது) பு.எச்.ஏ 4.18.5 க்கு ஏக்கரில் 11.89 (பதினொன்று ஏக்கர் எண்பத்தி ஒன்பது) சென்ட் அளவுள்ள நிலம் பூராவும் உளளதற்கு எல்லைகளாவது விவரம்.

மேற்கு : புல எண் 10

வடக்கு : புல எண்கள் 8, 19

கிழக்கு : புல எண்கள் 5, 6

தெற்கு : புல எண்கள் 3, 4

இதன் மூத்தியில் மேற்படி பு.ஏக் 11.89 (பதினொன்று ஏக்கர் எண்பத்தி ஒன்பது) சென்ட் அளவுள்ள நிலம் பூராவும்...

எழுதிக்கொடுப்பவர்

எழுதிவாங்குபவர்கள்

भारतीय गैर न्यायिक INDIA NON JUDICIAL

रु.5000 Rs.5000

पाँच हज़ार रुपये FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU

Rs.5000/-

23463

16.11.2011

G 147026

P. RAVICHANDRAN
STAMP VENDER,
L.No. 23335/B1/81
BARGUR, TAMIL NADU

COMMISSIONER OF GEOLOGY AND MINING

-6-

மேற்படி நிலத்திலுள்ள மாமரங்கள் 100 பூராவும்....தான் கிரய ஆவணத்திற்கு உட்பட்டது.

மேற்படி சொத்து ஜெகதேவி ஊராட்சிக்குட்பட்டது.

மேற்படி சொத்து தங்கள் பெயரில் பட்டா மாற்றம் செய்து கொள்ள சம்மதித்து பட்டாபடிவத்திலும் இன்றே கையொப்பம் செய்துள்ளேன்.

மேற்படி சொத்திற்கு சென்று வர மாமூல் வழி பாத்தியம் உண்டு.

எழுதிக்கொடுப்பவர்

எழுதிவாங்குபவர்கள்

DOCT No: 3643/2011 Page No. 8 Total Pages 12

भारतीय गैर न्यायिक INDIA NON JUDICIAL

रु. 5000 Rs.5000

पाँच हज़ार रुपये FIVE THOUSAND RUPEES

INDIA

தமிழ்நாடு तमिलनाडु TAMILNADU

G 147027

23464
16.11.2011

Rs 5000/-

P. RAVICHANDRAN
STAMP VENDER,
L.No. 23385/B1/81
BARUGUR, TAMIL NADU

-7-

மேற்படி சொத்தின் தற்கால சந்தை மதிப்பு ரூ.12,49,000/- பெறும்.

எழுதிக்கொடுப்பவர்

எழுதிவாங்குபவர்கள்

சாட்சிகள்:-

Sattiyamoorthy, S/o. G. Srinivasan, G. Nagamangalam.

Mithila, S/o Mr Askar Ali, Fapalen

கணினியில் தட்டச்சுசெய்தவர்

A. KRISHNAVENI
KANDILI

வரைவு தயாரித்தவர்

V.SANTHI
DOCUMENT WRITTER
L.NO A.321 KGI 1999, BARUGUR.

DOCT
No: 3643 / 2011
Page No 9
Total Pages 12

1968 ம் வருட தமிழ்நாடு முத்திரைச்சட்டம் சொத்து மதிப்பைக் குறைத்து எழுதுவது தடுக்கும் விதி 3(1)ன் படி அறிக்கை

வ.எண்	கிராமம்	புல எண்	பரப்பு	தன்மை	மதிப்பு
1	ஜெகதேவிபாளையம்	9	11.89	புன்செய்	ரூ.11,89,000/-
2	" மேற்படி நிலத்திலுள்ள மாமரங்கள் 100 எண்				ரூ. 60,000/-
				மொத்தம்	ரூ.12,49,000/-

எழுதிக்கொடுப்பவர்

எழுதிவாங்குபவர்கள்:

तमिलनाडु केन्द्रीय विश्वविद्यालय

(संसद द्वारा पारित अधिनियम 2009 के अंतर्गत स्थापित)

CENTRAL UNIVERSITY OF TAMIL NADU

(Established by an Act of Parliament, 2009)

नीलक्कुडी परिसर/Neelakudi Campus, तिरुवारूर/ Thiruvarur

APPLICATION FORM FOR ISSUE OF IDENTITY CARD

ADMISSIONS – (2019-2020)

I request that I may be issued an identity card. I submit the following details for the same.

Name	
Course in which Studying	
Registration No	
Date of Birth	
Residential Address	
Contact Telephone Number	
Blood Group	

I attach two copies of my recent photograph (Passport size).

Date: Signature of the Student

Recommended by:

(Signature of faculty)

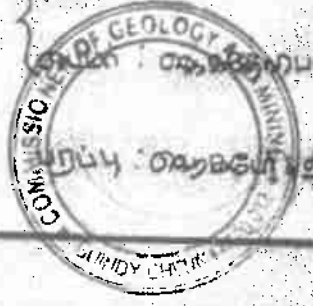
மாவட்டம்: கிருஷ்ணகிரி

வட்டம்: கிருஷ்ணகிரி

எண் : 138

கிராமம்

புலஎண்: 9



LEGEND

LEASE APPLIED AREA

SAFETY AREA

MINE LEASE AREA

19/2

COLLECTOR,
KRISHNAGIRI

DEPUTY DIRECTOR
Department of geology and Mining
Collectorate, Krishnagiri.

DOCUMENT
No. 891 /2016
Page No. 45
Total Pages No. 48

3.220

10/2013

தமிழ்நாடு அரசு

நில அளவை ஆவணம் - பட்டா

வருவாய்த்துறை, கிருஷ்ணகிரி மாவட்டம்

1(1) பிரிவு

வட்டம் கிருஷ்ணகிரி

கிராமம் - 138 ஜெகதேவிபாளையம்

பட்டா எண் 402

உரிமையாளர்கள் பெயர்

1 ஜி.சுப்பன் மகன் எஸ்.வெங்கடேசன்

2 பி.கே.கோவிந்தராஜ் மகன் ஜி.ஜெயபாலன்

புல எண்ணும் உட்பிரிவும்	நன்செய் பரப்பு ஹெக்டேர் - ஏர்	நன்செய் தீர்வை ரூ - பை	புன்செய் பரப்பு ஹெக்டேர் - ஏர்	புன்செய் தீர்வை ரூ - பை	மற்றவை பரப்பு ஹெக - ஏர்	மற்றவை தீர்வை ரூ - பை
	-		4 - 81.50	16.30	-	
	-		4 - 31.50	16.30	-	

வட்டாட்சியருக்காக
கிருஷ்ணகிரி

138/402.00/2.00 25/10/2013 4:36:00P

25.10.13

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2	-	[illegible]	[illegible]	[illegible]	[illegible] (25)			7 [illegible]	4.45 [illegible]		

(13)	(14)	(15)	(16)	(17)	(18)	(18-a)	(19)

[illegible]
[illegible] 138, [illegible]
[illegible] Tk & Dist.

COMMISSIONER OF GEOLOGY AND MINING

8	-	-8	P	ரயத்துவாரி	புஞ்சை			8 - 2	3	3	38	3	71.50	12	10	501-நாயக்கம்பாளையம் மற்றும் 6 நபர்(கள்)	
9	-	9	P	ரயத்துவாரி	புஞ்சை			8 - 2	3	3	38	4	81.50	16	30	402-எஸ்.வெங்கடேசன் மற்றும் 1 நபர்(கள்)	
10	-	10	P	ரயத்துவாரி	புஞ்சை			8 - 2	3	3	38	2	78.50	9	45	533-மீனாயுதத் அலி	
11	-	11	P	ரயத்துவாரி	புஞ்சை			7 - 3	4	2	77	1	81.00	5	00	534-மீனாட்சியம்மாள் அலி	
12	1	12-1	P	ரயத்துவாரி	புஞ்சை			7 - 3	4	2	77	1	31.50	3	65	5-அம்மாக்கண்ணம்மாள	
12	2A	-2	P	ரயத்துவாரி	புஞ்சை			7 - 3	4	2	77	0	4.00	0	10	2-அன்னலட்சுமி அலை முதலியார்	
12	2B	-2	P	ரயத்துவாரி	புஞ்சை			7 - 3	4	2	77	0	4.00	0	10	398-நடராஜன்	
12	2C	-2	P	ரயத்துவாரி	புஞ்சை			7 - 3	4	2	77	0	5.00	0	15	403-நாகராஜன்	
12	2D	-2	P	ரயத்துவாரி	புஞ்சை			7 - 3	4	2	77	0	7.00	0	20	195-சக்திவேல்	
12	2E	-2	P	ரயத்துவாரி	புஞ்சை			7 - 3	4	2	77	0	10.00	0	30	502-மாணிக்க முதலியார்	
12	2F	-2	P	ரயத்துவாரி	புஞ்சை			7 - 3	4	2	77	0	14.50	0	40	399-நடேச முதலியார்	
12	2G	-2	P	ரயத்துவாரி	புஞ்சை			7 - 3	4	2	77	0	7.00	0	20	955-நடராஜ பிள்ளை	

S.DHANASEKAR, M.Sc.,(Geo)
RQP/MAS/225/2011/A

ANNEXURE-VII-A

தமிழ்நாடு तमिलनाडु TAMILNADU

D 451992

P.RAVICHANDRAN
STAMP-VENDER,
L.No.23385/B1/81
BARUGUR, TAMIL NADU

குத்தகை ஆவணம்

09.03.2015 இரண்டாயிரத்து பதினைந்தாம் ஆண்டு மார்ச் மாதம் ஒன்பதாம் தேதியில்.....

கிருட்டிணகிரி மாவட்டம் & வட்டம், பர்கூர் தரப்பு, பர்கூர் ஆஸ்பத்திரி ரோட் கதவு எண் 43/2 வீட்டில் குடியிருக்கும் **B.K.**கோவிந்தராஜ் குமார் **G.**ஜெயபாலன்-1 (Pan Card No.AEZPJ3161J) Cell No.(9443995249) (எழுதிக்கொடுப்பவர்) மற்றும்.....

கிருட்டினகிரி மாவட்டம் & வட்டம், பர்கூர் தரப்பு, சின்னபர்கூர் ரோடில் கதவு எண் 26/1 வீட்டில் குடியிருக்கும் **G.**கப்பன் குமார் **S.**வெங்கடேசன்-2 (Pan Card No. ADIPV2112R) Cell No.(9443735326) (எழுதிவாங்குபவர்) ஆகிய நாம் இருவரும் சேர்ந்து ஏகோபித்து எழுதி வைத்துக் கொண்ட குத்தகை ஆவணம் யாதெனில்..

S. Venkatesan

ஆவண எண்:.....391...../2015

தமிழ்நாடு TAMILNADU

4519

P.RAVICHANDRAN
STAMP-VENDER,
L.No.23385/B1/81
BARUGUR, TAMILNADU

4368
9.3.2015

-2-

இதனடியில் கண்டதும் நம்மில் 1 நபருக்கு பர்கூர் சார்பதிவகத்தில் 1 புத்தகம் 2011 ஆம் ஆண்டின் 3643 ஆம் எண்ணாக பதிவுசெய்துள்ள கூட்டு கிரய ஆவணப்படி பாத்தியப்பட்டுள்ள 1 நபரின் சுவாதீன அனுபவத்தில் இருந்து வரும் நிலத்தை நம்மில் 2 நபருக்கு குத்தகைக்கு கொடுப்பதாக பேசிய குத்தகை தொகை வருடம் 1க்கு ரூ.1,00,000/ (ஒரு லட்சம்) ரூபாய்கள் வீதம் மொத்தம் 25 வருடங்களுக்கு குத்தகைக்கு கொடுப்பதாக பேசி முன்பணம் ஏதும் பெறாமல் பிரதி வருடாவருடமும் மேற்படி ரூ.1,00,000/- (ஒருலட்சம்)

S. Venkatesan.

ஆவண
எண்: 2/1/2015
பக்க எண்: 2
மொத்த பக்கங்கள்: 7
சார்பதிவாளர்

4369
9.3.2015

-3-

ரூபாய்களை நம்மில் 2 நபரிடமிருந்து 1 நபர் ரொக்கம் பெற்றுக்கொண்டு குத்தகை காலம் இன்று முதல் அதாவது 09.03.2015 முதல் 08.03.2040 வரை 25 வருட வாய்தாவரை மேற்படி நிலத்தை அனுபவித்து வந்து கெடு கடந்த மறு தினமே 2 நபர் 1 நபர் வசம் நிலத்தை சுவாதீனம் விட்டு விட வேண்டியது. குத்தகை காலத்தில் 1 நபராலோ அல்லது 1 நபரின் வாரிசுகளாலோ தகராரோ இடைஞ்சலோ ஏற்பட்டால் அதை 1 நபரே தீர்த்து கொடுக்க வேண்டும். குத்தகை காலத்தில் நிலத்தின் வரியை நம்மில் 1 நபரே கட்டிக்கொள்ளவேண்டும். இந்தபடிக்கு நாம் இருவரும் நம் முழுச் சம்மதியில் எழுதி வைத்துக் கொண்ட குத்தகை உடன்படிக்கை ஆவணம் சரி.

ஆவண
எண்: 294/2015
பக்க எண்: 3
மொத்த பக்கங்கள்: 7

சொத்து விவரம்

கிருட்டிணகிரி பதிவு மாவட்டம், பர்கூர் சார்பதிவு மாவட்டம் [illegible]ளையம் கிராம புல எண் 9 (ஒன்பது) பு.எச்.ஏ 4.81.5 க்கு ஏக்களில் 11.89 (பதினொன்று ஏக்கர் எண்பத்தி ஒன்பது) சென்ட் அளவுள்ள நிலம் பூராவும் உள்ளதற்கு எல்லைகள் விவரம்....

மேற்கு : புல எண் 10

வடக்கு : புல எண்கள் 8, 19

கிழக்கு : புல எண்கள் 5, 6

தெற்கு : புல எண்கள் 3, 4

இதன் மத்தியில் மேற்படி பு.ஏக் 11.89 (பதினொன்று ஏக்கர் எண்பத்தி ஒன்பது) செண்ட் அளவுள்ள நிலத்தில் 2 நபருக்கு பாத்தியப்பட்ட பொதுவில் ½ வரிசை போக 1 நபருக்கு பாத்தியப்பட்ட பொதுவில் ½ வரிசைக்கு பு.ஏக் 5.94½ செண்ட் அளவுள்ள பூராவும்...

மேற்படி நிலத்திலுள்ள மாமரங்கள் 100 பூராவும் உள்ளதில் பொதுவில் ½ வரிசைக்கு 50 மரங்கள் பூராவும் தான் மேற்படி குத்தகை சொத்திற்கு பாத்தியப்பட்டது.

மேற்படி சொத்திற்கு சென்று வர மாமூல் வழி பாத்தியம் உட்பட மேற்படி குத்தகை ஆவணத்திற்கு பாத்தியப்பட்டது.

S.Manikandan.

சாட்சிகள்:-

1. [illegible] S/o P.C.Srinivasan 66 Pillayar Koil St BARUGUR

2. [illegible]

கணினியில் தட்டச்சுசெய்தவர்

A.KRISHNAVENI
KANDILI

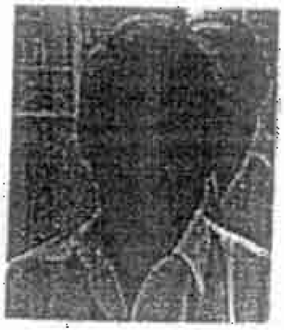
ஆவண எண்: 2921/2015
பக்க எண்: 4
மொத்த பக்கங்கள்: 7
சார்பதிவாளர்

வரைவு தயாரித்தவர்

V.SANTHI
DOCUMENT WRITTER
L.NO A.321 KGI 1999, BARUGUR

Bargur சார்பதிவாளர் அலுவலகத்தில் 09/03/2015 அன்று 1.2 மணிகளுக்கிடையில் தாக்கல் செய்து ... ரூ 20150 செலுத்தினர்

1 இடது பெரு விரல்



மேல் விவரம் ஆவண வாசகப்படி

எழுதிக் கொடுத்ததாக ஒப்புக்கொண்டவர்

1 இடது பெரு விரல்

மேல் விவரம் ஆவண வாசகப்படி

2 இடது பெரு விரல்

மேல் விவரம் ஆவண வாசகப்படி

இன்னாரென்று ருசுபித்தவர்

பெயர் : 1

ஆவண எண் 991/2015
பக்க எண் 5
மொத்த பக்கங்கள் 7
சார்பதிவாளர்

Sheet no 1 of 2

2015ம் ஆண்டு மார்ச் திங்கள் 9 ம் நாள்

சார்பதிவாளர் Bargur

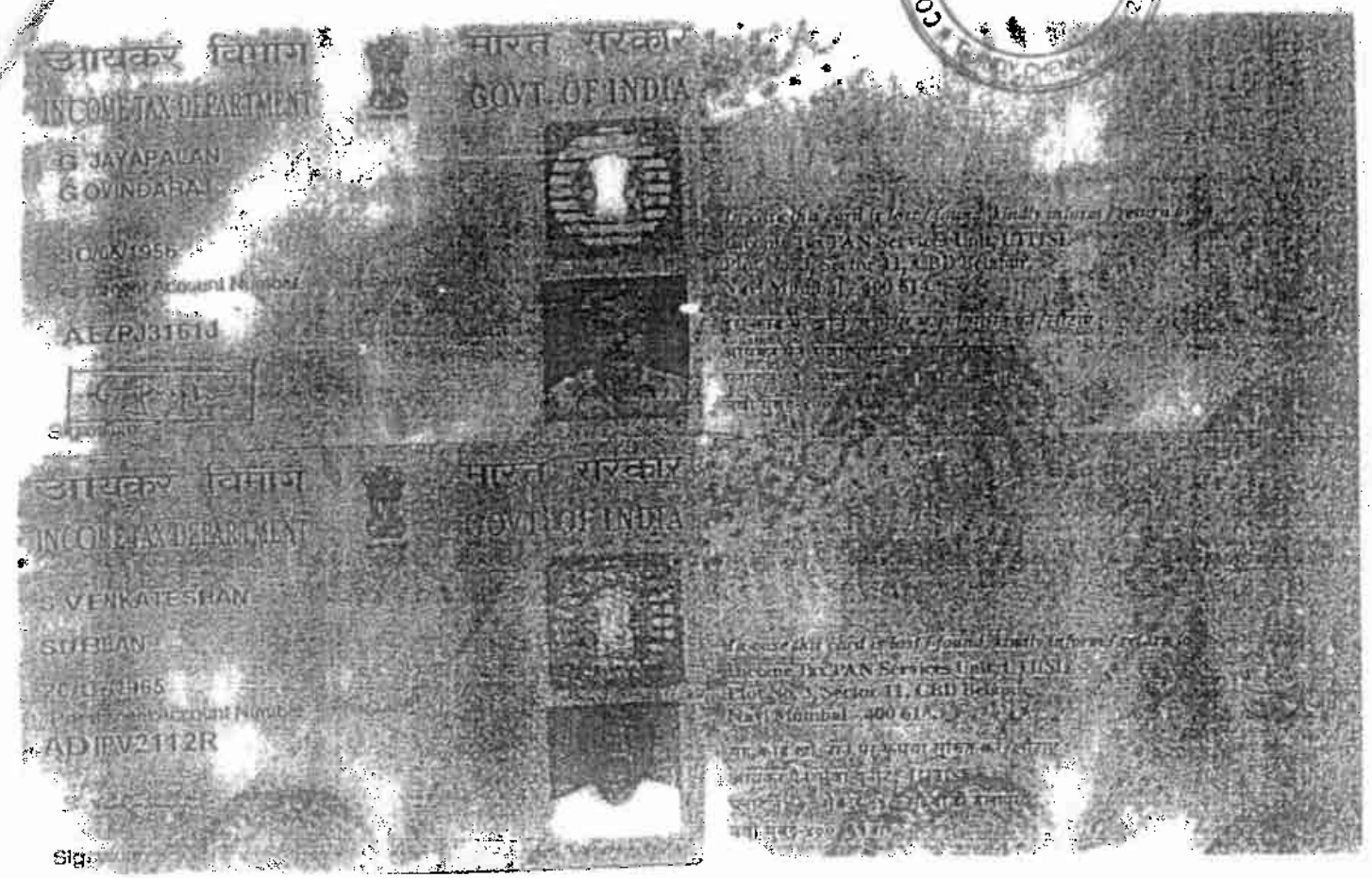
1 புத்தகம் 2015 ம் ஆண்டு 791 ம் எண்ணாக பதிவு செய்யப்பட்டது

நாள்: 09/03/2015 சார்பதிவாளர் Bargur

ஆவண
எண்:.....791...../2015
பக்க எண்:....6..........
மொத்த பக்கங்கள்:..7.......
சார்பதிவாளர்

9

Sheet no. 2 of 2



G. Jayapalan

S. Venkatesan

S.DHANASEKAR, M.Sc.(Geo
RQP/MAS/225/2015

ANNEXURE -VIII

DEPARTMENT OF GEOLOGY AND MINING

From
Thiru.Atul Anand, I.A.S.,
Commissioner of Geology and Mining i/c.
Industrial Estate,
Guindy, Chennai-600 032.

To
The Addl. Chief Secretary to
Government,
Industries Department,
Secretariat,
Chennai-600 009

Lr.No.5273/MM5/2015 dated 06.01.2016

Sir,

Sub: Mines and Quarries – Minor mineral – Grey Granite – Krishnagiri District and Taluk – Jagadevipalayam village – S.F.No.9 (P) - over an extent of 3.22.0 hects. of patta land – Quarry lease application preferred by Thiru S.Venkatesan – precise area communicated by the Government – Approved Mining Plan called for – Mining Plan submitted for approval – Approval accorded – Approved Mining Plan forwarded to Government – Regarding.

Ref:
1. Quarry lease application preferred by Thiru S.Venkatesan dated 06.12.2013.
2. District Collector, Krishnagiri Lr.No.737/2013/ Mines-1 dated 22.06.2015.
3. Government letter No.11337/MME2/2015-1 Ind. Dept dated 10.12.2015
4. Letter dt.16.12.2015 received from Thiru S.Venkatesan
5. Deputy Director (i/c), Krishnagiri Lr No.737/ 2013/Mines-1 dated 28.12.2015

-oOo-

The Government in the reference 3rd cited have communicated precise area to the applicant Thiru S.Venkatesan with a direction to produce Approved Mining Plan in respect of the area applied for grant of quarry lease for quarrying Grey granite over an extent of 3.22.0 hects. of patta land in S.F.No.9 (P) of Jagadevipalayam Village, Krishnagiri Taluk and District within a period of 3 months under sub-rule (13) of Rule 19-A of Tamil Nadu Minor Mineral

1

Conservation Rules, 1959 by incorporating the conditions stipulated in the Government letter dated 10.12.2015.

2) In response to the precise area communicated, the applicant in the reference 4th cited has submitted five copies of mining plan duly prepared by the Recognized Qualified Person for approval.

3) The Deputy Director (i/c), Krishnagiri in the reference 5th cited has forwarded the copies of draft mining plan submitted in respect of the subject area stating that the technical details contained in the mining plan were verified with reference to field conditions and all the conditions stipulated by the Government in the precise area communication letter have been incorporated in the draft Mining plan and therefore recommended for approval of the mining plan.

4) The draft mining plan submitted in respect of the precise area communicated and the recommendations of the Deputy Director (i/c), Krishnagiri have been examined with reference to the provisions of Rule 12, 13 and 15 of Granite Conservation and Development Rules, 1999 and the following are observed:-

i) All the conditions stipulated by the Government in Letter. No.11337/MME2/2015-1 Ind. Dept dated 10.12.2015 have been incorporated in the mining plan.

ii) The required safety distance of 7.5 meters has been provided for the adjacent patta lands and the same has been demarcated in the mining plan.

iii) The DGPS readings for the entire boundary pillars of the area have been incorporated and clearly shown in the mining plan.

iv) The total quantity of recoverable reserves of grey granite has been estimated as 85904 cbm for a depth persistence of 16 meters with a recovery of 25%.

v) The Deputy Director (i/c), Krishnagiri has forwarded the mining plan with his recommendations for approval under Rule 15 of Granite Conservation and Development Rules, 1999.

5) 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) The proposed area for quarrying should be demarcated by using DGPS before executing the lease deed.

v) The applicant should fence the proposed area with barbed wire before execution of lease deed and the pillar post shall be firmly grounted with concrete foundation of height not less than 2 mts. with a distance between two pillars shall not be more than 3 mts.

vi) Quarrying operations shall be carried out as per the Approved Mining Plan.

vii) The production of granite shall be done as per the Approved Mining Plan.

viii) Waste materials generated during quarrying operations shall be dumped within the lease applied area earmarked for this purpose.

3

ix) No hindrance shall be caused to the adjacent pattadars lands.

x) The required safety distance of 7.5 mtrs. for the adjacent patta lands should be strictly adhered.

xi) The lease granted area should be fenced with barbed wire before the execution of lease deed and 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.

xii) Scheme of mining along with the progressive mine closure plan shall be submitted within the time stipulated in the rules.

6) A copy of the Approved Mining Plan is sent herewith for further necessary action.

Encl: Approved mining plan.

Sd/-Atul Anand
Commissioner of Geology and Mining (i/c)

//Forwarded / By Order//

Joint Director

3.1.2016

Copy to:

1) Thiru.S.Venkatesan,
S/o.Subban, 26/1 CB Road,
Bargur (Post),
Krishnagiri District.

2) The District Collector, Krishnagiri (with AMP)

3) The Directorate of Mines Safety, Chennai-40 (with AMP).

S.DHANASEKAR, M.Sc.,(Geo)
RQP/MAS/225/2011/A

4

ANNEXURE – IX

Dr. S. KALYANASUNDARAM ,I.F.S.(Retd.)
CHAIRMAN

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY – TAMIL NADU
3rd Floor, Panagal Maaligai,
No.1 Jeenis Road, Saidapet,
Chennai-15.
Phone No.044-24359974
Fax No. 044-24359975

ENVIRONMENTAL CLEARANCE

Lr. No.SEIAA-TN/F.No.4964/EC/1(a)/2863/2015 dated:15.02.2016

To
Thiru. S. Venkatesan
No.26/1, CB Road
Bargur
Krishnagiri
Krishnagiri-635 104

Sir,

Sub: SEIAA-TN – Proposed Grey Granite quarry located at S.F.No 9(Part) (Patta Land), Jagadevipalayam Village,Krishnagiri Taluk, Krishnagiri District- issue of Environmental Clearance – Reg.

Ref: 1. Your Application for Environmental Clearance dt: 20.01.2016
2. Minutes of the 72nd SEAC held on 04.02.2016, 05.02.2016 & 06.02.2016
3. Minutes of the SEIAA meeting held on 15.02.2016

Details of Minor Mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining environmental clearance for mining/quarrying of minor minerals based on the particulars furnished in your application as shown below.

1	Name of Project Proponent and address	Thiru. S. Venkatesan No.26/1, CB Road Bargur Krishnagiri Krishnagiri-635 104
2	Location of the Proposed Activity	
	Survey Number	9(Part) (Patta Land)
	Latitude and Longitude	12°29'25.93"N to 12°29'33.50"N 78°18'36.08"E to 78°18'44.07"E

CHAIRMAN
SEIAA-TN

	Village	Jagadevipalayam
	Taluk	Krishnagiri
	District	Krishnagiri
3	**Proposed Activity**	
	i. Minor mineral	Grey Granite
	ii. Mining Lease Area	3.22.0 Ha
	iii. Approved quantity	9130 cu.m of Grey Granite
	iv. Depth of Mining	16 m
	v. Type of mining	Semi Mechanized Opencast Method
	vi. Category(B1/B2)	B2
	vii. Precise area communication	Lr.No.11337/MME.2/2015-1 dated 10.12.2015 by Additional Chief Secretary to Government, Industries (MME2) Department,Chennai
	viii. Mining plan approval	Commissioner of Geology & Mining, Chennai Lr.No.5273/MM5/2015 dated 06.01.2016
	ix. Mining lease period	5 Years
4	**Whether Project area attracts any General conditions specified in the EIA notification, 2006 as amended:-**	Not attracted. Affidavit furnished
5	**Man Power requirement per day:**	15 Employees
6	**Utilities**	
	i. Source of Water :	Borehole/Tankers
	ii. Quantity of Water Requirement in KLD:	
	a. Domestic b. Industrial c. Green Belt & Dust Suppression	0.750KLD } 1.750KLD
	iii. Power Requirement: a. Domestic Purpose b. Industrial Purpose	TNEB
7	**Cost** i. Project Cost ii. EMP Cost	Rs.22.50 Lakhs Rs.3.50 Lakhs
8	**Public Consultation:-**	Not required as per O.M. dated 24.12.2013 of MoEF, GoI.
9	**Date of Appraisal by SEAC:-** **Agenda No:**	04.02.2016, 05.02.2016 & 06.02.2016 72-35
10	**Date of Review/Discussion by SEIAA and the Remarks:-** The proposal was placed before the SEIAA in its 163rd Meeting held on 15.02.2016 and the Authority after careful consideration, decided to grant environmental clearance to the said project Mining of Grey Granite to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.	
11	**Validity:** The Environmental Clearance will be coterminous with the mine lease period or limited to a maximum period of 5 Years from the date of issue whichever is earlier.	

CHAIRMAN
SEIAA-TN

Conditions to be Complied before commencing mining operations:

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
   I. The project has been accorded Environmental Clearance.
   II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
   III. Environmental Clearance may also be seen on the website of the SEIAA.
   IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.
2. The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.
9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 15 mts. From any civil structure shall be kept from the periphery of any excavation area.

CHAIRMAN
SEIAA-TN

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.
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.

CHAIRMAN
SEIAA-TN

24. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.
25. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
26. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
27. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
28. The following measures are to be adopted to control erosion of dumps:-
    i. Retention/ toe walls shall be provided at the foot of the dumps.
    ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.
29. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.
30. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
31. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
32. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
33. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
34. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
35. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic institution.
36. It shall be ensured that the total extent of nearby quarries(existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.

CHAIRMAN
SEIAA-TN

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.
41. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF , GOI..
42. Bunds to be provided at the boundary of the project site.
43. Ground water quality monitoring should be conducted once in 3 Months
44. 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.
45. At least 10 Neem trees should be planted around the boundary of the quarry site.
46. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
47. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
48. The Project Proponent shall provide solar lighting system to the nearby villages
49. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
50. Rainwater shall be pumped out Via Settling Tank only
51. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
52. 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 quarring operation, if the project site is located within 10KM from National Park and Sanctuaries.
53. 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.
54. Safety equipments to be provided to all the employees.
55. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
56. The EC is valid only if the scheme of the mining plan is approved by the Commissioner of Geology & Mining or any officers nominated on his behalf.
57. If there is any change in the proposal of production or handling the waste amendment has to be submitted to SEIAA for further approval.
58. This EC is approved as per the G.O.No. 79 & Rule 41 & 42 of Tamil Nadu Mining Mineral Concession Rule 1959.

CHAIRMAN
SEIAA-TN

General Conditions:

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
2. The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
14. The project proponent shall ensure that child labour is not employed in the project as per the sworn 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.

CHAIRMAN
SEIAA-TN

16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this SEIAA,TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the environmental clearance.
20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
21. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957,National Commission for protection of Child Right Rules,2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
22. Any other conditions stipulated by other Statutory/Government authorities shall be complied
23. Any appeal against this environmental clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

CHAIRMAN
SEIAA-TN

Copy to:

1. The Secretary, Ministry of Mines, Government of India, ShastriBhawan, New Delhi.
2. The Principal Secretary, Environment and Forests Department, Government of Tamil Nadu, Tamil Nadu.
3. The Additional Chief Secretary, Industries Department, Government of Tamil Nadu, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, PariveshBhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, Tamil Nadu Pollution Control Board, 76, Mount Salai,Guindy, Chennai-32
7. The District Collector, Krishnagiri District
8. The Commissioner of Geology and Mines,Guindy,Chennai-32
9. EI Division, Ministry of Environment & Forests, ParyavaranBhawan, New Delhi.
10. Spare.

S.DHANASEKAR, M.Sc. (Geol)
RQP/MAS/225/2011/A

ANNEXURE - X

TAMILNADU POLLUTION CONTROL BOARD

CONSENT ORDER NO. 2008133744871 DATED: 14/08/2020.

PROCEEDINGS NO.F.0810/HSR/RS/DEE/TNPCB/HSR/W/2020 DATED: 14/08/2020

SUB: Tamil Nadu Pollution Control Board - RENEWAL OF CONSENT – M/s. S.VENKATESAN GRANITE QUARRY , S.F.No. 9 (Part), JEGADEVIPALAYAM village, Burgur Taluk and Krishnagiri District - Renewal of Consent for the operation of the plant and discharge of sewage and/or trade effluent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) – Issued- Reg.

REF: 1. CTO's Proc.No. F.0810 HSR/RS/DEE/TNPCB/HSR/W&A/2016, Dated: 28.11.2016.

2. Proc. No. F.0810 HSR/RS/DEE/TNPCB/HSR/W&A/2017, Dated: 07.10.2017.

3. Unit's OCMMS application No.33744871 for RCO, Dated: 17.7.2020.

4. IR.No: F.0810 HSR/RS/AE/HSR/2020, Dated: 13.08.2020 (AUTO RENEWAL).

5. Minutes of the 206th DLCCC meeting held on 14.8.2020 (Item No. HSR-206-6).

RENEWAL OF CONSENT is hereby granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act, 6 of 1974) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Proprietor
M/s.S.VENKATESAN GRANITE QUARRY,
S.F.No. 9 (Part),
JEGADEVIPALAYAM Village ,
Burgur Taluk ,
Krishnagiri District .

Authorising the occupier to make discharge of sewage and /or trade effluent.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This RENEWAL OF CONSENT is valid for the period ending February 14, 2021

M. SENTHIL KUMAR

Digitally signed by M. SENTHIL KUMAR
Date: 2020.08.16 17:57:23 +05'30'

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

TAMILNADU POLLUTION CONTROL BOARD

SPECIAL CONDITIONS

1. This renewal of consent is valid for operating the facility for the manufacture of products/byproducts (Col.2) at the rate (Col.3) mentioned below. Any change in the product/byproduct and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
	Product Details		
1.	Grey Granite- Quarrying in an extent of 3.22 Hect at S.F.No.9 (Part), Jagadevipalayam village, for the lease period of five years.	9130	Cubic Meter/Five Years

2. This renewal of consent is valid for operating the facility with the below mentioned outlets for the discharge of sewage/trade effluent. Any change in the outlets and the quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Outlet No.	Description of Outlet	Maximum daily discharge in KLD	Point of disposal
Effluent Type : Sewage			
1.	Sewage	0.7	On Industrys own land
Effluent Type : Trade Effluent			

Additional Conditions:

1. The unit shall comply all the conditions prescribed in the Environmental Clearance issued by the SEIAA,TN, Chennai vide Letter No. SEIAA-TN/F.No.4965/EC/1(a)/2863/2015, Dated: 15.02.2016.

2. The unit shall comply all the conditions imposed in the Mining Lease Agreement executed by the District Administration without any deviations.

3. The unit shall treat and dispose the sewage generated from the unit through Septic tank and Soak Pit arrangement as reported.

4. The unit shall ensure that no trade effluent is generated at any stage of its manufacturing process.

5. The unit shall ensure that 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 emission.

6. The unit's operation/activity for the mining shall not disturb the nearby agricultural land if any at any circumstances.

7. The unit shall take necessary precautionary measures to prevent any adverse impact on the nearby habitation.

8. In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification, failing which this order will be withdrawn without any notice and further action will be initiated against the unit as per law.

M. SENTHIL KUMAR
Digitally signed by M. SENTHIL KUMAR
Date: 2020.08.16 17:58:27 +05'30'

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

To
The Proprietor,
M/s.S.VENKATESAN GRANITE QUARRY,
S.Venkatesan
No.26/1,CB Road
Bargur,Krishnagiri Taluk and District,
Pin: 635203

Copy to:

1.The Commissioner, BARGUR-Panchayat Union, Burgur Taluk, Krishnagiri District .

2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.

3. Copy submitted to the JCEE-Monitoring, Tamil Nadu Pollution Control Board, Vellore for favour of kind information.

4. File

TAMILNADU POLLUTION CONTROL BOARD

Category of the Industry : RED

CONSENT ORDER NO. 2008233744871 DATED: 14/08/2020.

PROCEEDINGS NO.F.0810HSR/RS/DEE/TNPCB/HSR/A/2020 DATED: 14/08/2020

SUB: Tamil Nadu Pollution Control Board - RENEWAL OF CONSENT –M/s. S.VENKATESAN GRANITE QUARRY , S.F.No. 9 (Part), JEGADEVIPALAYAM village, Burgur Taluk and Krishnagiri District - Renewal of Consent for the operation of the plant and discharge of emissions under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) –Issued- Reg.

REF: 1. CTO's Proc.No. F.0810 HSR/RS/DEE/TNPCB/HSR/W&A/2016, Dated: 28.11.2016.

2. Proc. No. F.0810 HSR/RS/DEE/TNPCB/HSR/W&A/2017, Dated: 07.10.2017.

3. Unit's OCMMS application No.33744871 for RCO, Dated: 17.7.2020.

4. IR.No: F.0810 HSR/RS/AE/HSR/2020, Dated: 13.08.2020 (AUTO RENEWAL).

5. Minutes of the 206th DLCCC meeting held on 14.8.2020 (Item No. HSR-206-6).

RENEWAL OF CONSENT is hereby granted under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Proprietor
M/s.S.VENKATESAN GRANITE QUARRY,
S.F.No. 9 (Part),
JEGADEVIPALAYAM village,
Burgur Taluk,
Krishnagiri District.

Authorizing the occupier to operate the industrial plant in the Air Pollution Control Area as notified by the Government and to make discharge of emission from the stacks/chimneys.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This RENEWAL OF CONSENT is valid for the period ending February 14, 2021

M. SENTHIL KUMAR
Digitally signed by M. SENTHIL KUMAR
Date: 2020.08.16 18:00:30 +05'30'

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

TAMILNADU POLLUTION CONTROL BOARD

SPECIAL CONDITIONS

1. This renewal of consent is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
	Product Details		
1.	Grey Granite- Quarrying in an extent of 3.22 Hect at S.F.No.9 (Part), Jagadevipalayam village, for the lease period of five years.	9130	Cubic Meter/Five Years

2. This renewal of consent is valid for operating the facility with the below mentioned emission/noise sources along with the control measures and/or stack. Any change in the emission source/control measures/change in stack height has to be brought to the notice of the Board and fresh consent/Amendment has to be obtained.

I	Point source emission with stack :			
Stack No.	Point Emission Source	Air pollution Control measures	Stack height from Ground Level in m	Gaseous Discharge in Nm3/hr
II	Fugitive/Noise emission :			
Sl. No.	Fugitive or Noise Emission sources	Type of emission	Control measures	
1.	Vehicle Movement	Fugitive	Water sprinkler system	
2.	Drilling	Fugitive	Water sprinkler system	

TAMILNADU POLLUTION CONTROL BOARD

Special Additional Conditions:

The unit shall install the approved retrofit emission control device/equipment with at least 70% Particulate matter reduction efficiency on all DG sets with capacity of 125 KVA and above or otherwise the unit shall be shift to gas based generators within the time frame prescribed in the notification No. TNPCB/Labs/DD(L)02151/2019 dated 10.06.2020 issued by TNPCB.

Additional Conditions:

1. The unit shall comply all the conditions prescribed in the Environmental Clearance issued by the SEIAA, TN, Chennai vide Letter No. SEIAA- TN/F.No.4965/EC/1(a)/2863/2015, Dated: 15.02.2016.

2. The unit shall comply all the conditions imposed in the Mining Lease Agreement made with the District Administration without any deviations.

3. The unit shall operate and maintain the APC measures in the form of portable water sprinklers effectively and continuously so as to satisfy the NAAQ / Emission standards prescribed by the Board.

4. The unit shall adhere to the ANL standards as prescribed by the Board.

5. The unit shall continue to develop more green belt around the unit's premises.

6. The unit shall ensure that 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 emission.

7. The unit's operation/activity for the mining shall not disturb the nearby agricultural land if any at any circumstances.

8. The unit shall take necessary precautionary measures to prevent any adverse impact on the nearby habitation.

9. The unit shall not use 'Use and throwaway plastics' such as plastic sheets used for food wrapping, spreading on dining table etc, plastic plates, plastic coated tea cups, plastic tumbler, water pouches and packets, plastic straw, plastic carry bag and plastics flags irrespective of thickness, within the industry premises. Instead unit shall encourage use of eco friendly alternative such as banana leaf, areca nut palm plate, stainless steel, glass, porcelain plates/cups, cloth bag, jute bag etc.,

10. In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification, failing which this order will be withdrawn without any notice and further action will be initiated against the unit as per law.

M. SENTHIL KUMAR

Digitally signed by M. SENTHIL KUMAR
Date: 2020.08.16 18:01:33 +05'30'

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

To
The Proprietor,
M/s.S.VENKATESAN GRANITE QUARRY,
S.Venkatesan
No.26/1,CB Road
Bargur,Krishnagiri Taluk and District,
Pin: 635203

Copy to:

1.The Commissioner, BARGUR-Panchayat Union, Bargur Taluk, Krishnagiri District .

2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.
3. Copy submitted to the JCEE-Monitoring, Tamil Nadu Pollution Control Board, Vellore for favour of kind information.
4. File

S.DHANASEKAR, M.Sc.,(Geo)
RQP/MAS/225/2011/A

X1

S.DHANASEKAR, M.Sc.,(Geo)
RQP/MAS/225/2011/A

XII

CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON TO PREPARE MINING PLANS

(Under Rule 22 C of Mineral Concession Rules 1960)

Shri S. DHANASEKAR resident of Old No.6, New No.8/3, Kullappan Street, Opp. Indian Bank Line, Omalur (P.O), Salem – 636 455, son of Shri A. SUNDARAM having given satisfactory evidence of his qualifications and experience is hereby granted recognition under Rule 22C of the Mineral Concession Rules, 1960 as a Qualified Person to prepare Mining Plans.

His registration number is **RQP/MAS/225/2011/A**

recognition is valid for a period of ten years ending 12.01.2021.

Regional Controller of Mines
Indian Bureau of Mines
Chennai Region

Place : Chennai
Date : 13.01.2011

S.DHANASEKAR, M.Sc.(Geo)
RQP/MAS/225/2011/A

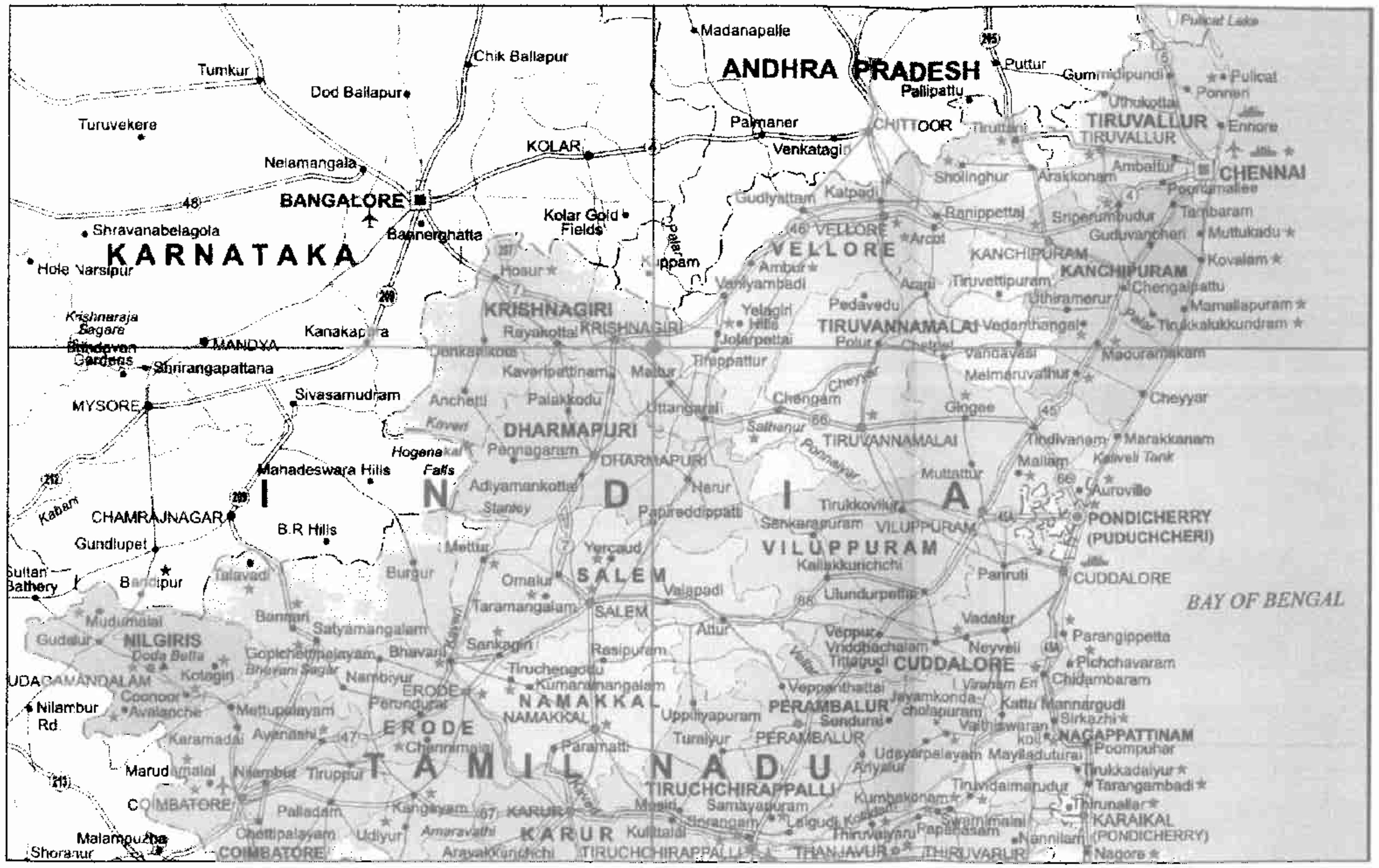
ANNEXURE-XIII

WORKING PIT VIEW - 1

WORKING PIT VIEW - 2

12° 29' 33.50''N

78° 18' 42.34''E



12° 29' 25.93''N

78° 18' 44.07''E

N

PLATE NO:I

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

INDEX

Q. L. AREA :

TOPO SHEET NO. : 57 L/07

LATITUDE : 12° 29' 25.93"N to 12° 29' 33.50"N

LONGITUDE : 78° 18' 42.34"E to 78° 18' 44.07"E

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

LOCATION PLAN

Not to Scale

PREPARED BY :

ALL THE PLANS AND SECTIONS PREPARED
BASED ON THE LEASE MAP [illegible]
BY THE STATE GOVERNMENT
I DO HEREBY CERTIFY THAT [illegible]
CHECKED BY ME AND IS CORRECT TO THE
BEST OF MY KNOWLEDGE

S.DHANASEKAR, M.Sc.,
[illegible]
[illegible]

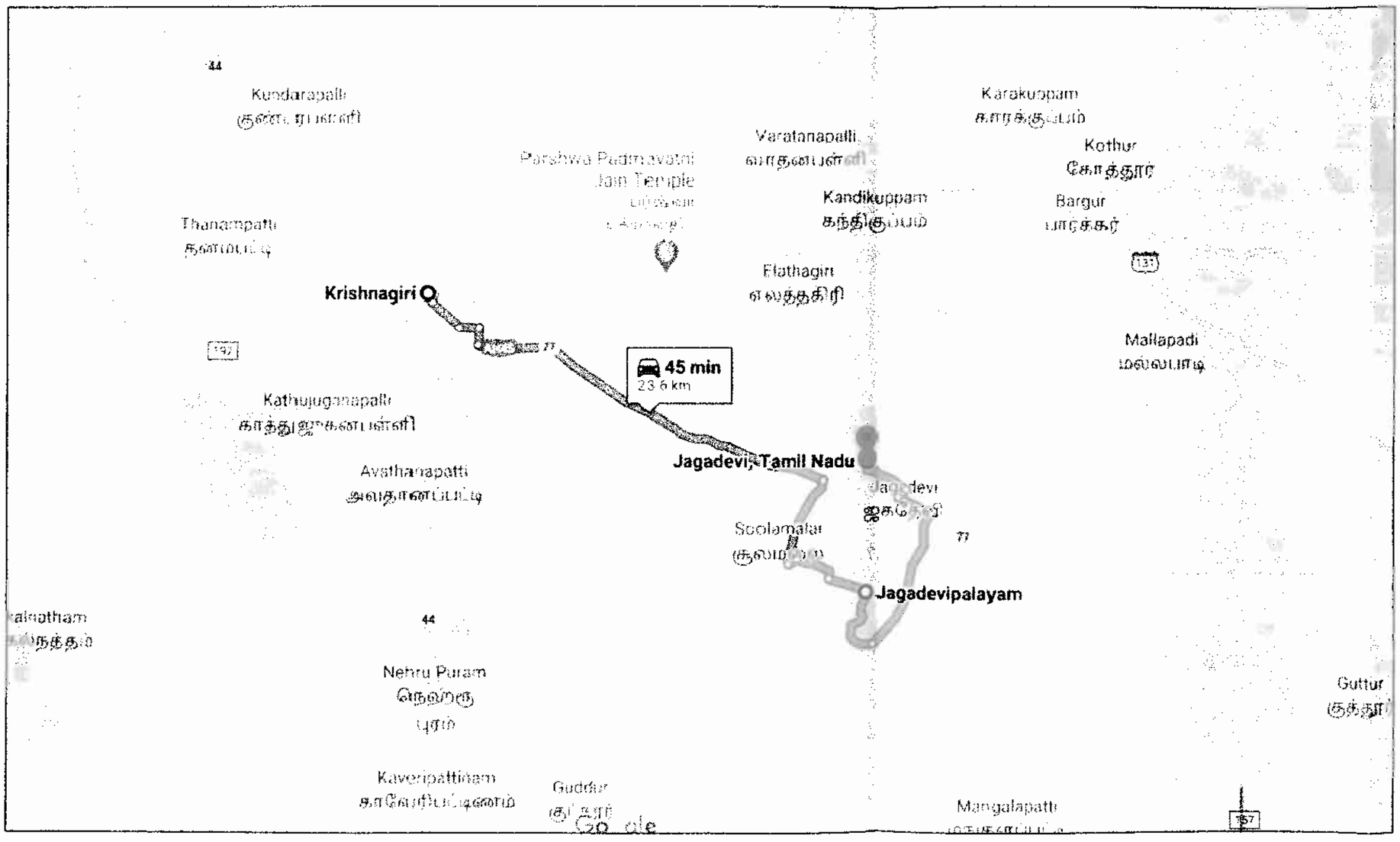


PLATE NO.IA

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

INDEX

QUARRY LEASE AREA

ROAD

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

NOT TO SCALE

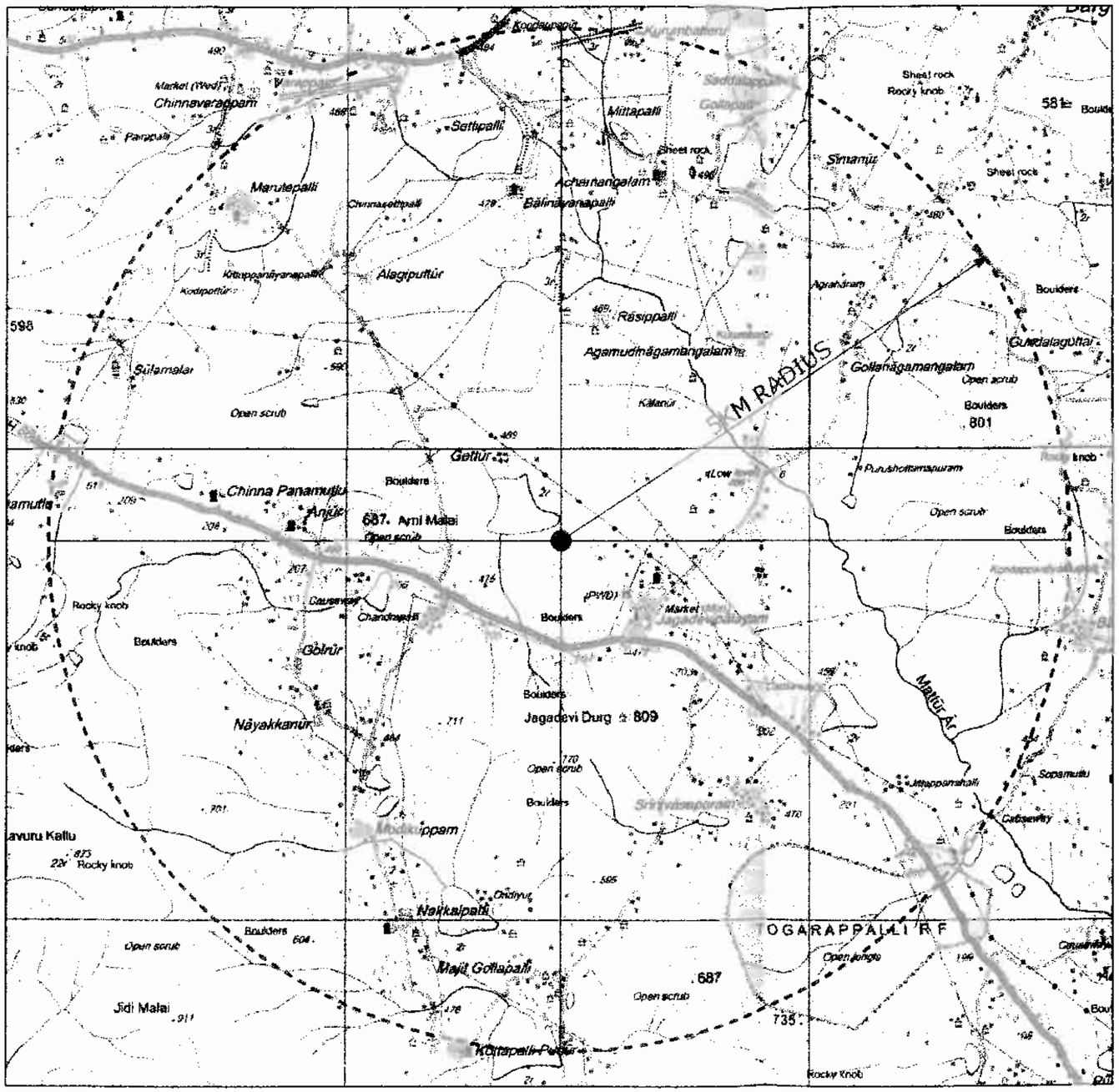


PLATE NO:IB

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

QUARRY LEASE BOUNDARY

5KM RADIUS

TOPO SHEET NO. : 57L/07

LATITUDE : 12° 29' 25.93"N to 12° 29' 33.50"N

LONGITUDE : 78° 18' 42.34"E to 78° 18' 44.07"E

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

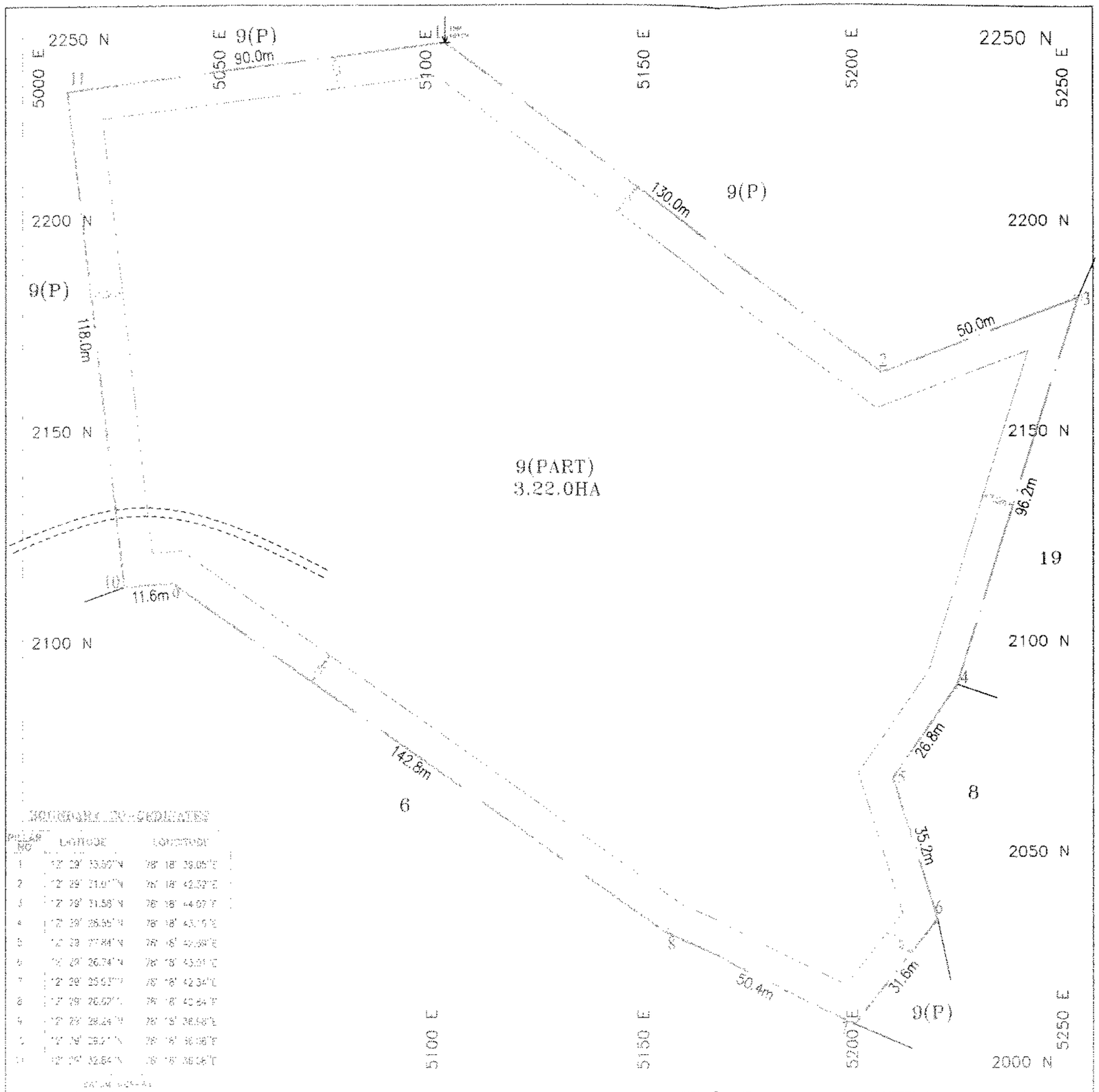
CONVENTIONAL SYMBOLS

- Express highway: with toll, with bridge: with distance stone
- Roads, metalled: according to importance
- Roads, double carriageway: according to importance
- Unmetalled road: Cart-track. Pack-track with pass. Foot-path
- Streams: with track in bed, undefined. Canal
- Dams: masonry or rock-filled; earthwork. Weir.
- River: dry with water channel: with island & rocks. Tidal river
- Submerged rocks. Shoal. Swamp. Reeds.
- Wells, lined; unlined. Tube-well. Spring. Tanks, perennial, dry
- Embankments: road or rail: tank. Broken ground
- Railways, broad gauge, double, single with station: under construction
- Railways, other gauges: double, single with distance stone: do
- Mineral line or tramway. Kiln. Cutting with tunnel
- Contours with sub-features. Rocky slopes. Cliffs.
- Sand features (1)flat (2)sand-hills(permanent); (3)dunes(shifting)
- Towns or Villages, inhabited deserted. Fort

TOPO SHEET MAP

Prepared By:

SUBRAMANEKARAN



BOUNDARY CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
1	12° 29' 33.60"N	78° 18' 39.05"E
2	12° 29' 31.01"N	78° 18' 42.52"E
3	12° 29' 31.58"N	78° 18' 44.07"E
4	12° 29' 35.55"N	78° 18' 43.10"E
5	12° 29' 37.84"N	78° 18' 42.69"E
6	12° 29' 26.74"N	78° 18' 43.01"E
7	12° 29' 25.93"N	78° 18' 42.34"E
8	12° 29' 20.62"N	78° 18' 40.84"E
9	12° 29' 28.24"N	78° 18' 36.56"E
10	12° 29' 29.21"N	78° 18' 36.08"E
11	12° 29' 32.84"N	78° 18' 36.06"E

N

PLATE NO:II

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN.
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

INDEX

Q. LEASE BOUNDARY

7.5m SAFETY DISTANCE

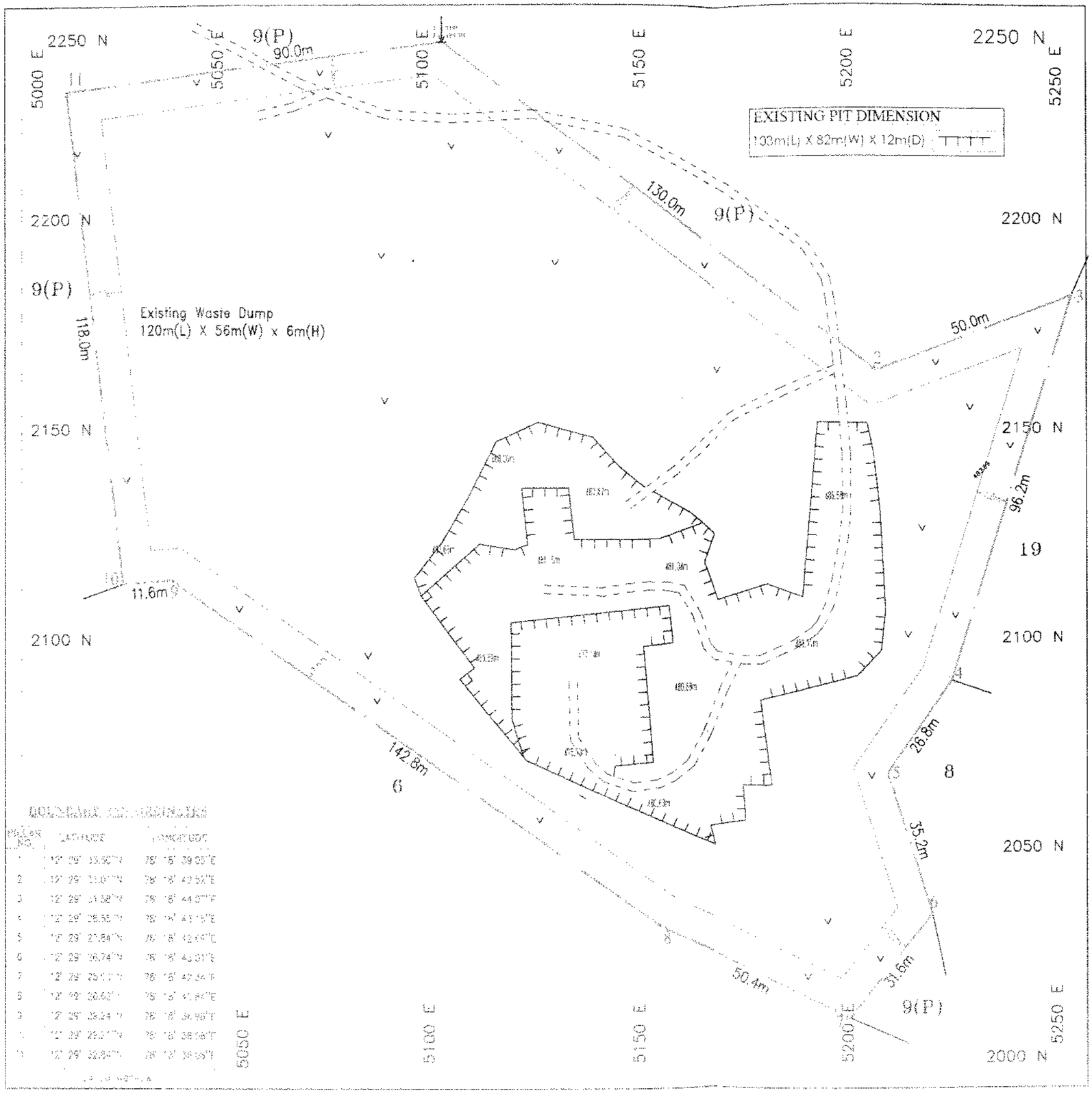
TEMPORARY BENCH MARK

APPROACH ROAD

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

SCALE 1 : 1000



BOUNDARY CO-ORDINATES

PILLAR NO.	LATITUDE	LONGITUDE
1	12° 29' 35.90"N	78° 16' 39.05"E
2	12° 29' 33.04"N	78° 16' 43.55"E
3	12° 29' 31.58"N	78° 16' 44.07"E
4	12° 29' 28.55"N	78° 16' 43.15"E
5	12° 29' 27.84"N	78° 16' 42.64"E
6	12° 29' 26.74"N	78° 16' 42.01"E
7	12° 29' 25.01"N	78° 16' 42.04"E
8	12° 29' 20.62"N	78° 16' 41.84"E
9	12° 29' 25.24"N	78° 16' 36.98"E
10	12° 29' 25.01"N	78° 16' 36.19"E
11	12° 29' 32.84"N	78° 16' 36.05"E

PLATE NO:III

DATE OF SURVEY: 17-09-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

INDEX

- Q. LEASE BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- TOP SOIL
- QUARRY PIT
- QUARRY ROAD
- STRIKE AND DIP
- TREES
- GREY GRANITE
- EXISITING WASTE DUMP

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

SCALE 1 : 1000

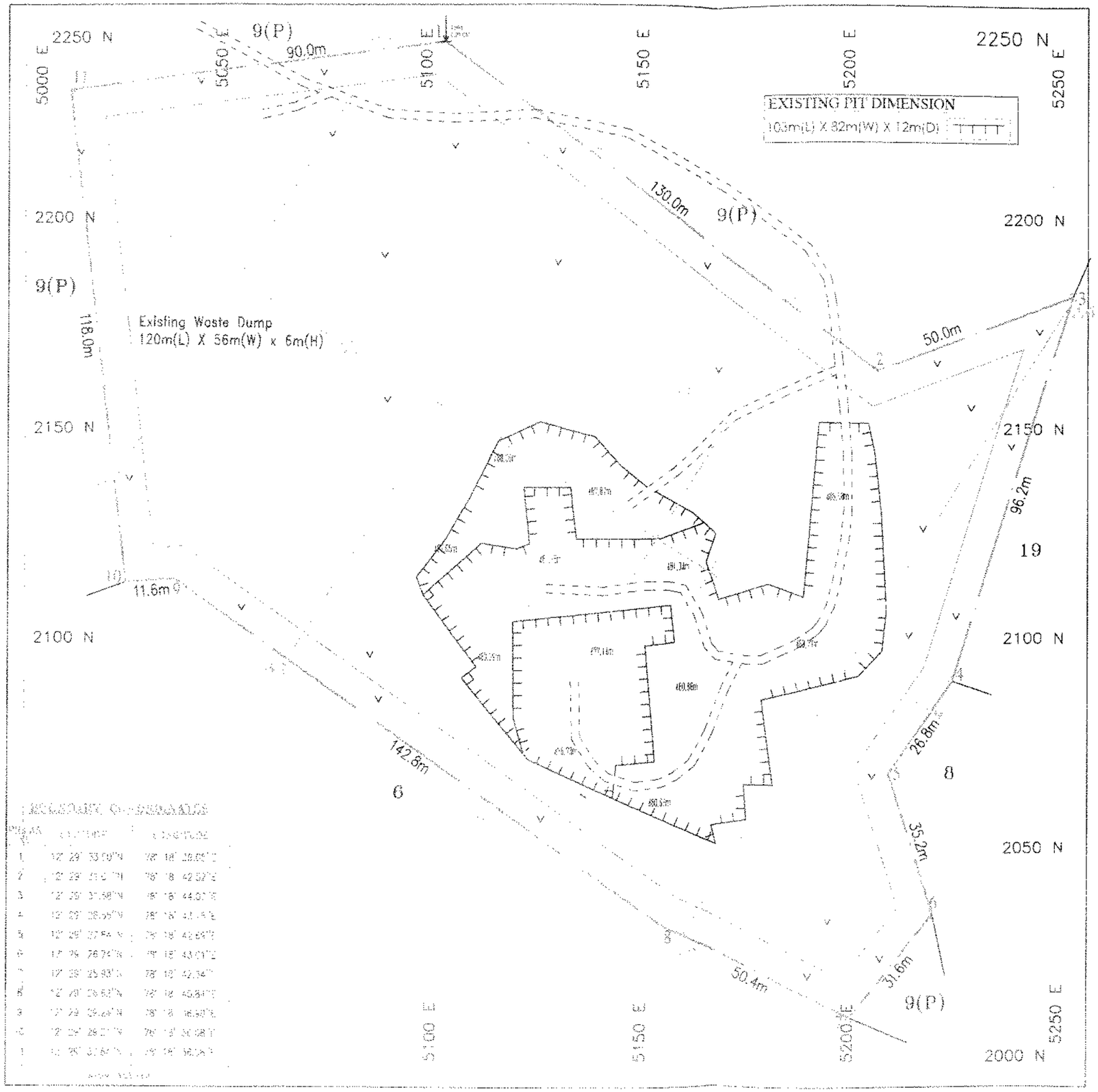


PLATE NO:IV

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

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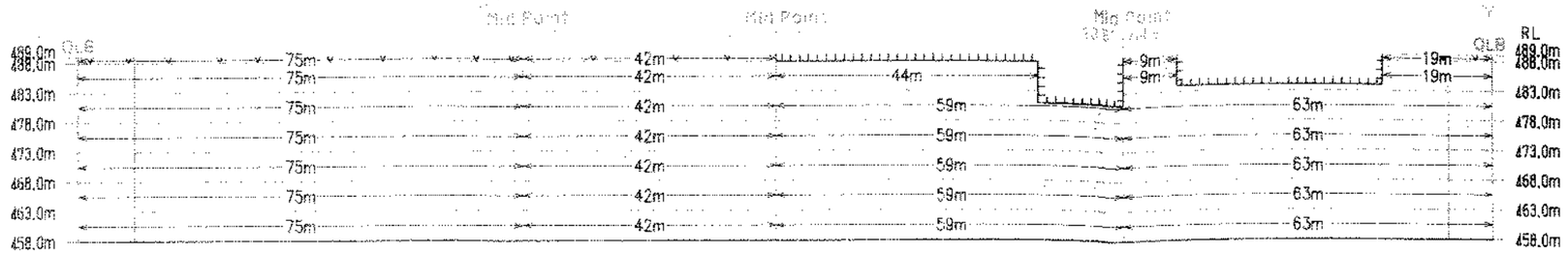
Q. LEASE BOUNDARY	
7.5m SAFETY DISTANCE	
TEMPORARY BENCH MARK	TBM
TOP SOIL	v v v
QUARRY PIT	
QUARRY ROAD	
STRIKE AND DIP	
TREES	
GREY GRANITE	
EXISTING WASTE DUMP	

LOCATION OF QUARRY:

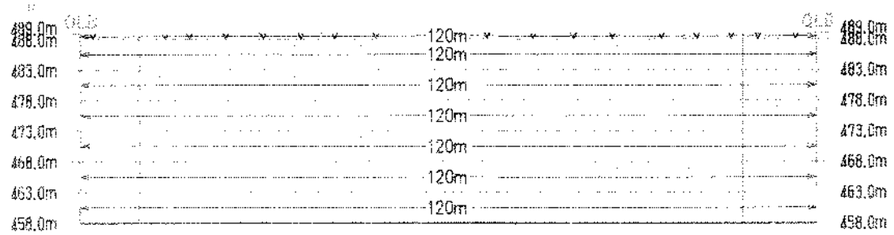
EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

SCALE 1 : 1000

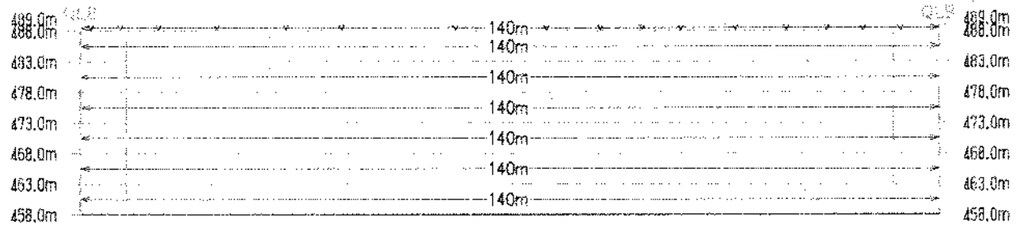
SECTION ALONG X-Y



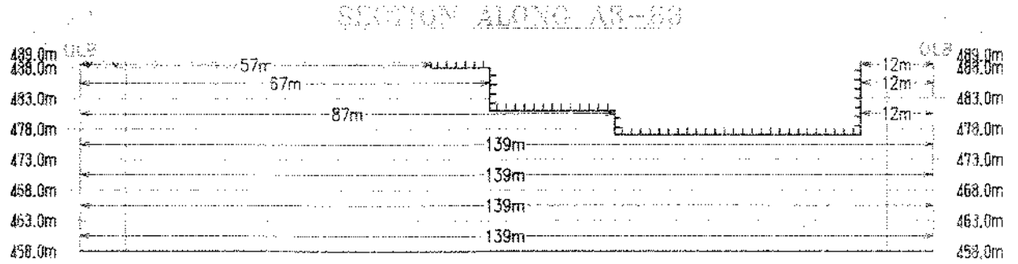
SECTION ALONG A1-B1



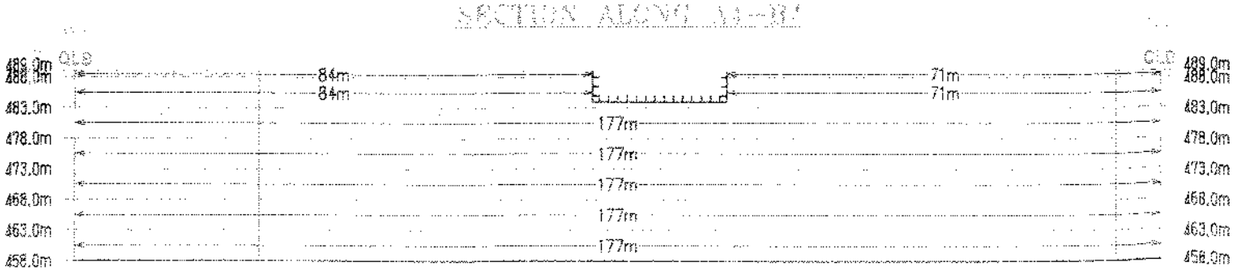
SECTION ALONG A2-B2



SECTION ALONG A3-B3



SECTION ALONG A4-B4



GEOLOGICAL RESERVES

Section	Bench	length in (m)	Width in (m)	Depth in (m)	Top Soil in m3	Toral Reserve m3	Recoverable Reserve (Grey Granite) 40% in m3	Granite Waste 60% in m3
TOP SOIL								
XY-A1B1	I	75	120	1	9000			
XY-A2B2	I	42	140	1	5880			
XY-A3B3	I	1	69	1	69			
XY-A4B4	I	28	155	1	4340			
TOTAL					19289			
GREY GRANITE								
XY-A1B1	II	75	120	5		45000	18000	27000
	III	75	120	5		45000	18000	27000
	V	75	120	5		45000	18000	27000
	VI	75	120	5		45000	18000	27000
	VII	75	120	5		45000	18000	27000
XY-A2B2	II	42	140	5		29400	11760	17640
	III	42	140	5		29400	11760	17640
	IV	42	140	5		29400	11760	17640
	V	42	140	5		29400	11760	17640
	VI	42	140	5		29400	11760	17640
	VII	42	140	5		29400	11760	17640
XY-A3B3	II	64	79	5		17380	6952	10428
	III	59	99	5		29205	11682	17523
	IV	59	139	5		41005	16402	24603
	V	59	139	5		41005	16402	24603
	VI	59	139	5		41005	16402	24603
	VII	59	139	5		41005	16402	24603
XY-A4B4	II	28	155	5		21700	8680	13020
	III	63	177	5		55755	22302	33453
	IV	63	177	5		55755	22302	33453
	V	63	177	5		55755	22302	33453
	VI	63	177	5		55755	22302	33453
	VII	65	177	5		55755	22302	33453
TOTAL					19289	957480	382992	574488

PLATE NO:IV-A

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN.
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

INDEX

Q. LEASE BOUNDARY

7.5m SAFETY DISTANCE

TOP SOIL

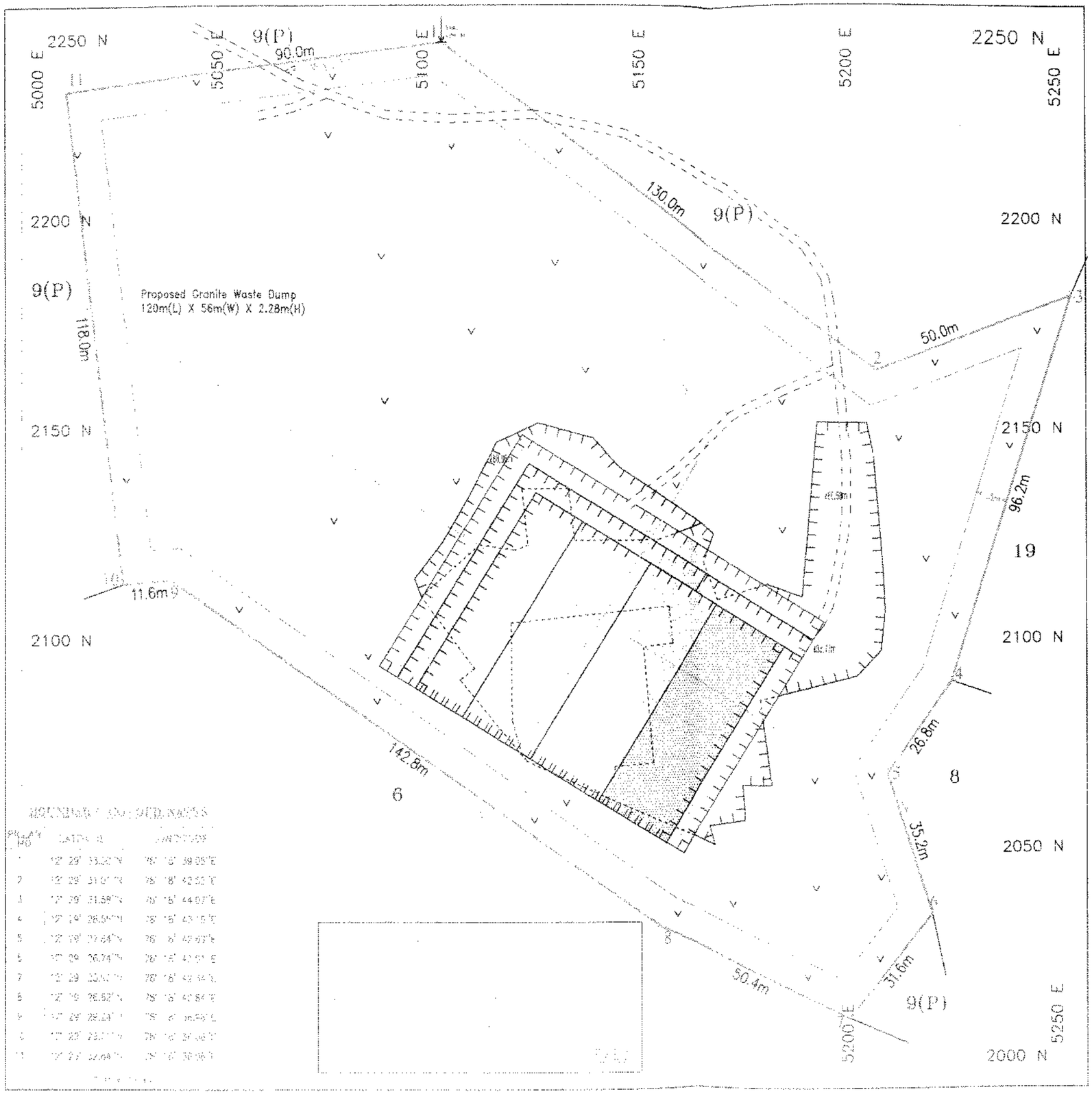
GREY GRANITE

EXISTING WASTE DUMP

LOCATION OF QUARRY:

EXTENT : 3.22.0 Ha.
S.F.No : 9(Part),
VILLAGE : JAGADEVIPALAYAM,
TALUK : BARGUR,
DISTRICT : KRISHNAGIRI,
STATE : TAMIL NADU.

SCALE 1 : 1000



BOUNDARY CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
1	12° 29' 15.20"N	78° 15' 38.05"E
2	12° 29' 31.07"N	78° 15' 42.55"E
3	12° 29' 31.58"N	78° 15' 44.07"E
4	12° 29' 26.50"N	78° 15' 43.15"E
5	12° 29' 17.64"N	78° 15' 40.65"E
6	12° 29' 06.74"N	78° 15' 41.21"E
7	12° 29' 03.00"N	78° 15' 42.44"E
8	12° 29' 06.82"N	78° 15' 43.84"E
9	12° 29' 28.23"N	78° 15' 46.59"E
10	12° 29' 23.07"N	78° 15' 51.46"E
11	12° 29' 22.69"N	78° 15' 50.06"E

PLATE NO:V

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

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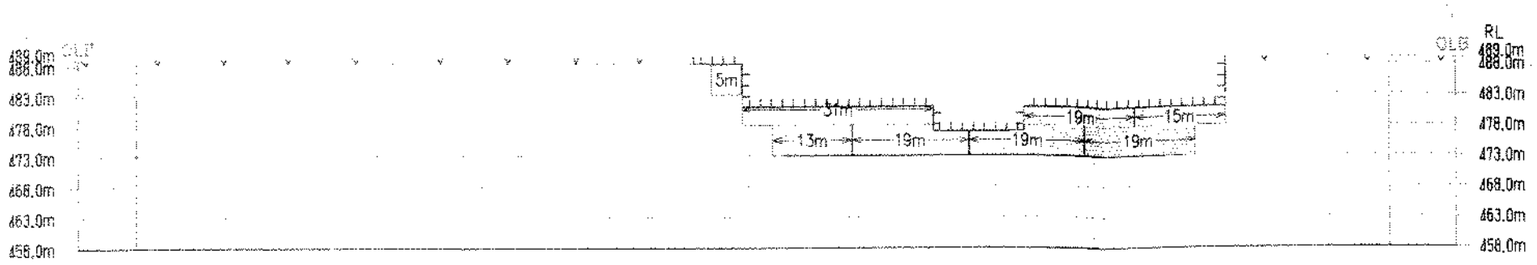
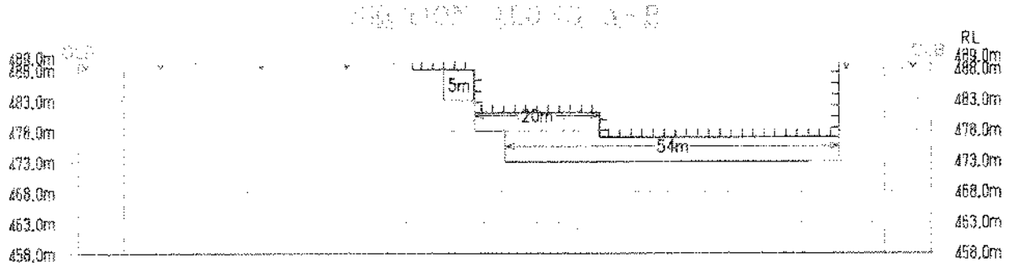
Q. LEASE BOUNDARY	
7.5m SAFETY DISTANCE	
TEMPORARY BENCH MARK	TBM 499.0m
TOP SOIL	v v v
TREES	
QUARRY PIT	
QUARRY ROAD	
GREY GRANITE	
PROPOSED GRANITE WASTE DUMP	

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

SCALE 1 : 1000





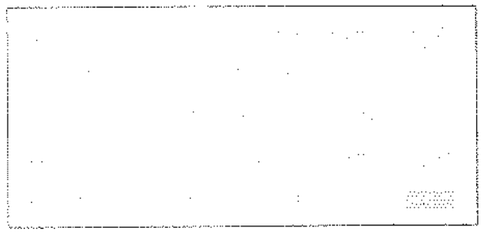


PLATE NO:V-

DATE OF SURVEY: 14.10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

INDEX

Q. LEASE BOUNDARY

7.5m SAFETY DISTANCE

TOP SOIL

GREY GRANITE

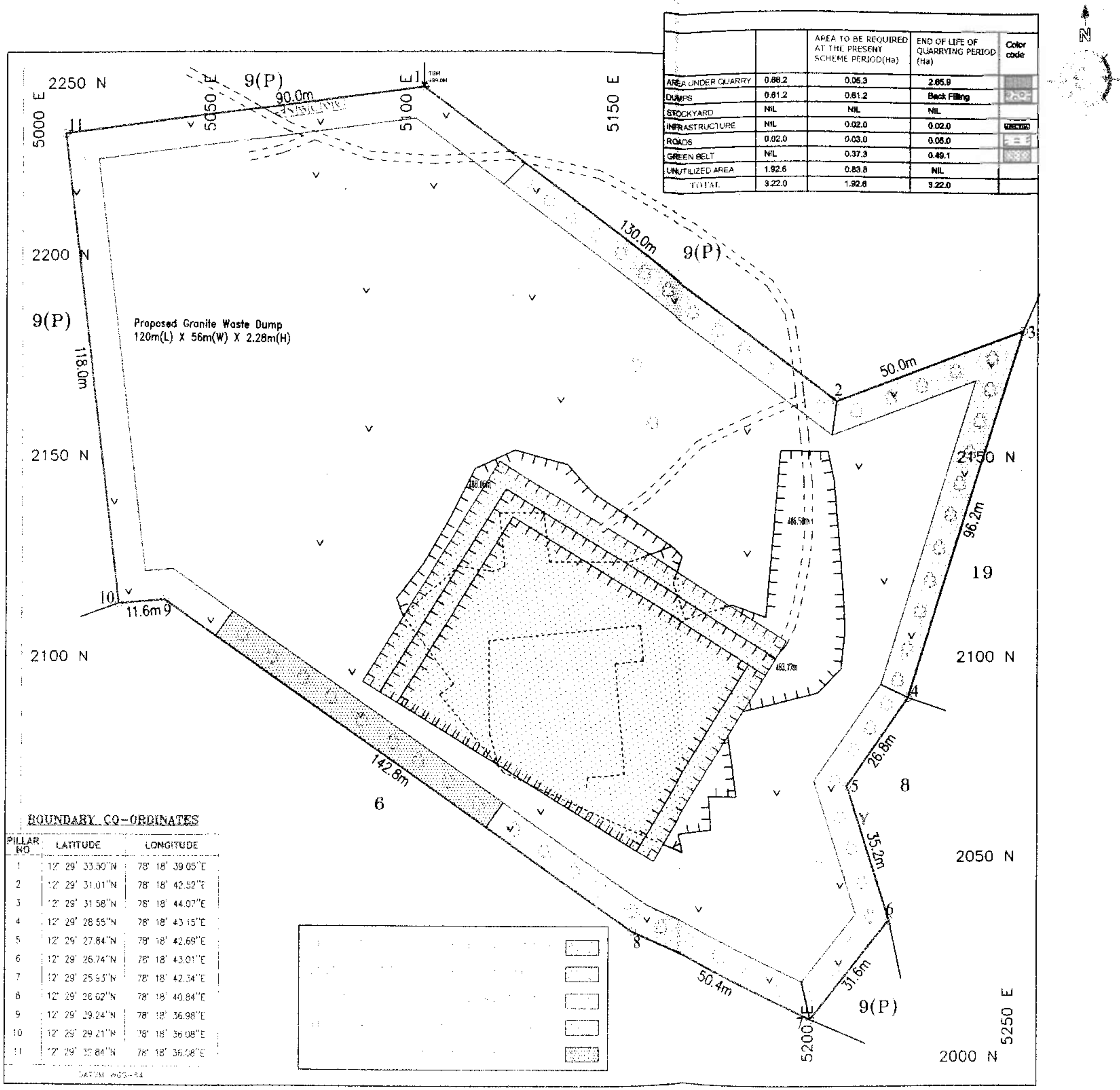
LOCATION OF QUARRY:

EXTENT : 3.22.0 Ha.
S.F.No : 9(Part),
VILLAGE : JAGADEVIPALAYAM,
TALUK : BARGUR,
DISTRICT : KRISHNAGIRI,
STATE : TAMIL NADU.

SCALE 1 : 1000

YEARWISE DEVELOPMENT & PRODUCTION RESERVES

Year	Section	Bench	length in (m)	Width in (m)	Depth in (m)	Total Reserve m3	Grey Granite Production 40% in m3	Grey Granite Waste 60% in m3
04.03.2021 to 03.03.2022	XY-AB	II	8	5	5	200	80	120
		III	50	20	5	5000	2000	3000
		TOTAL				**5200**	**2080**	**3120**
04.03.2022 to 03.03.2023	XY-AB	III	15	20	5	1500	600	900
		IV	13	54	5	3510	1404	2106
		TOTAL				**5010**	**2004**	**3006**
04.03.2023 to 03.03.2024	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
04.03.2024 to 03.03.2025	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
04.03.2025 to 03.03.2026	XY-AB	IV	19	54	5	5130	2052	3078
		TOTAL				**5130**	**2052**	**3078**
	GRAND TOTAL					25600	10240	15360



		AREA TO BE REQUIRED AT THE PRESENT SCHEME PERIOD(Ha)	END OF LIFE OF QUARRYING PERIOD (Ha)	Color code
AREA UNDER QUARRY	0.88.2	0.05.3	2.65.9	
DUMPS	0.61.2	0.61.2	Back Filling	
STOCKYARD	NIL	NIL	NIL	
INFRASTRUCTURE	NIL	0.02.0	0.02.0	
ROADS	0.02.0	0.03.0	0.05.0	
GREEN BELT	NIL	0.37.3	0.49.1	
UNUTILIZED AREA	1.92.6	0.83.8	NIL	
TOTAL	3.22.0	1.92.6	3.22.0	

BOUNDARY CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
1	12° 29' 33.50"N	78° 18' 39.05"E
2	12° 29' 31.01"N	78° 18' 42.52"E
3	12° 29' 31.58"N	78° 18' 44.07"E
4	12° 29' 28.55"N	78° 18' 43.15"E
5	12° 29' 27.84"N	79° 18' 42.69"E
6	12° 29' 26.74"N	78° 18' 43.01"E
7	12° 29' 25.93"N	78° 18' 42.34"E
8	12° 29' 26.62"N	78° 18' 40.84"E
9	12° 29' 29.24"N	78° 18' 36.98"E
10	12° 29' 29.21"N	78° 18' 36.08"E
11	12° 29' 32.84"N	78° 18' 36.08"E

DATUM: WGS-84

PLATE NO:VI

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TA[illegible]
KRISHNAGIRI DIST[illegible] 104.

INDEX

- Q. LEASE BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- TOP SOIL
- TREES
- QUARRY PIT
- QUARRY ROAD
- GREY GRANITE
- PROPOSED GRANITE WASTE DUMP
- MINE LAYOUT

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

MINE LAYOUT, LAND USE PATTERN & AFFORESTATION PLAN

SCALE 1 : 1000

PREPARED BY,

[illegible]

S.DHANASEKARAN, M.Sc.

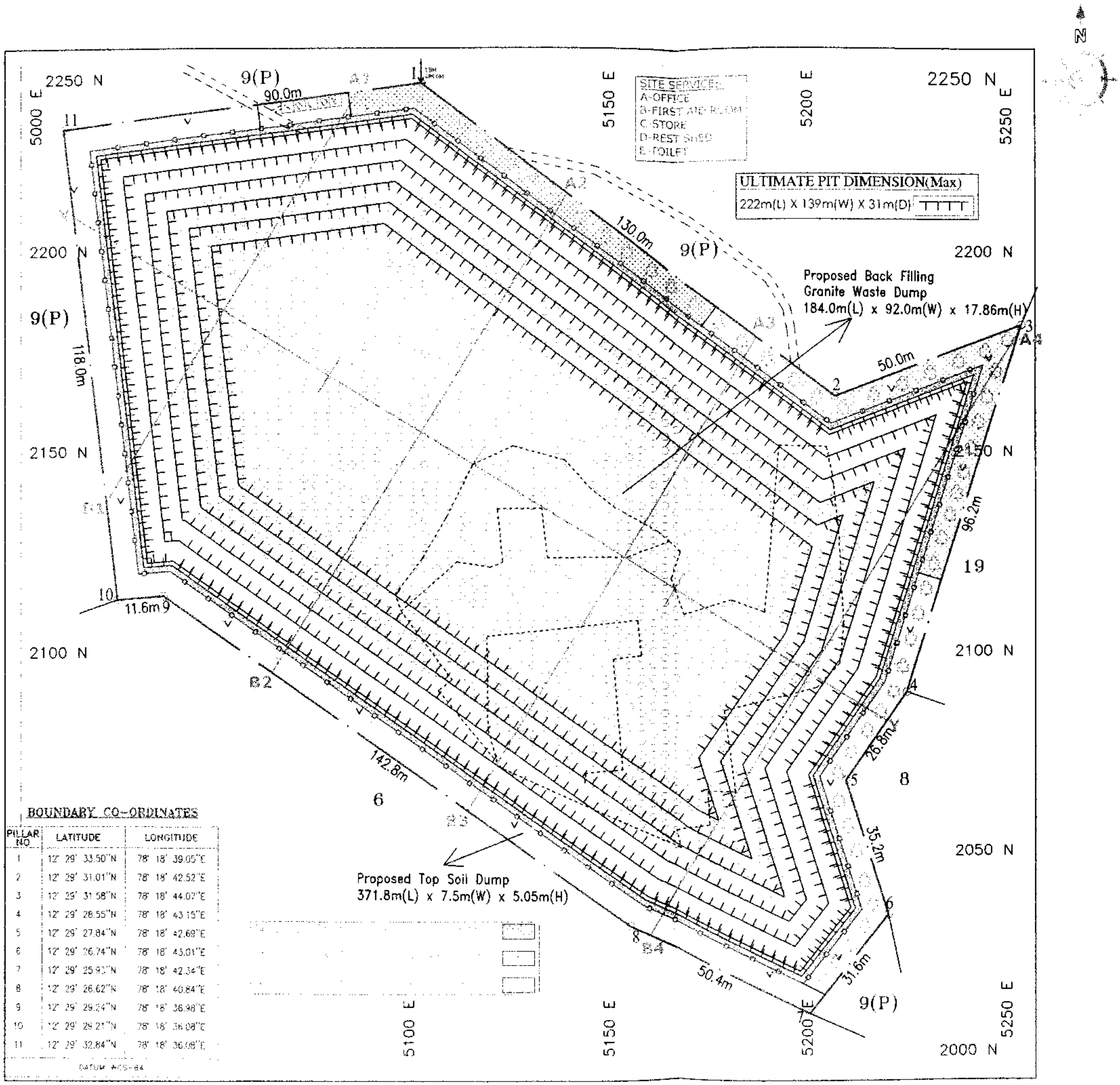
[illegible]

PLATE NO:VII

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104



BOUNDARY CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
1	12° 29' 33.50"N	78° 18' 39.05"E
2	12° 29' 31.01"N	78° 18' 42.52"E
3	12° 29' 31.58"N	78° 18' 44.07"E
4	12° 29' 28.55"N	78° 18' 43.15"E
5	12° 29' 27.84"N	78° 18' 42.69"E
6	12° 29' 26.74"N	78° 18' 43.01"E
7	12° 29' 25.93"N	78° 18' 42.34"E
8	12° 29' 26.62"N	78° 18' 40.84"E
9	12° 29' 29.24"N	78° 18' 36.98"E
10	12° 29' 29.21"N	78° 18' 36.08"E
11	12° 29' 32.84"N	78° 18' 36.09"E

DATUM WGS-84

INDEX

- Q. LEASE BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- TOP SOIL
- TREES
- GREY GRANITE
- QUARRY PIT
- QUARRY ROAD
- FENCING/BUND
- PARAPET WALL
- PROPOSED TOP SOIL DUMP
- PROPOSED BACK FILLING GRANITE WASTE DUMP
- ULTIMATE PIT LIMIT

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

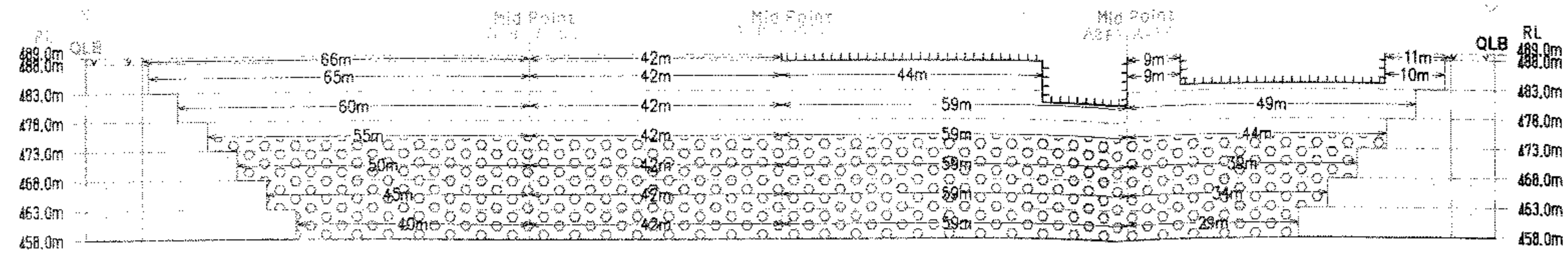
CONCEPTUAL FINAL MINE CLOSURE PLAN

SCALE 1 : 1000

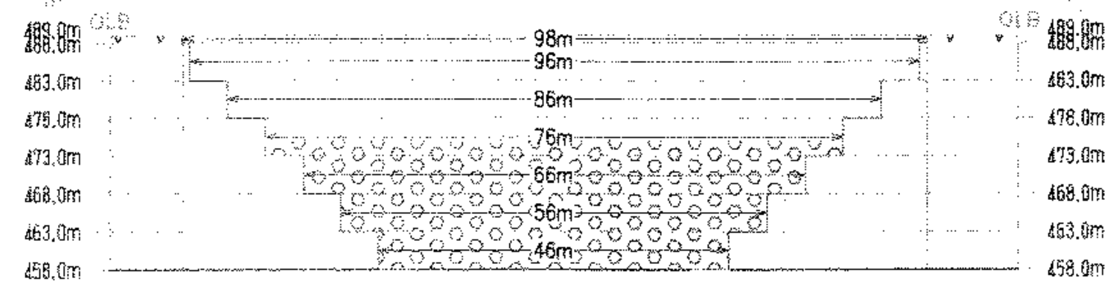
PREPARED BY

S.DHANASEKAR, M.Sc.

SECTION ALONG X-Y



SECTION ALONG A1-B1



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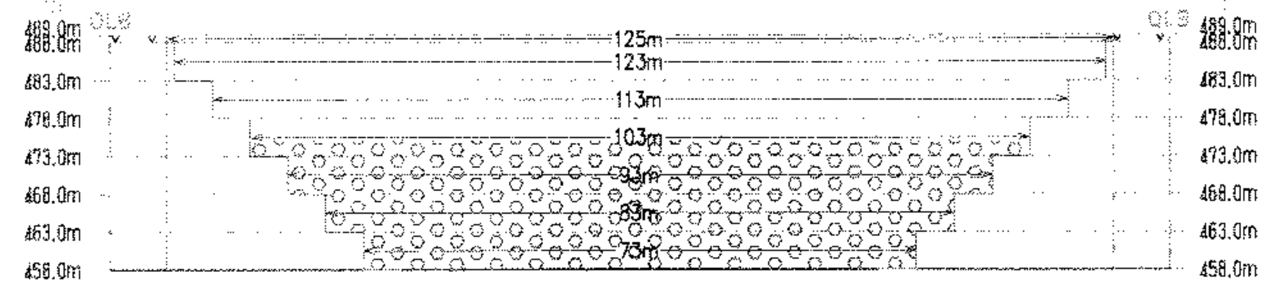
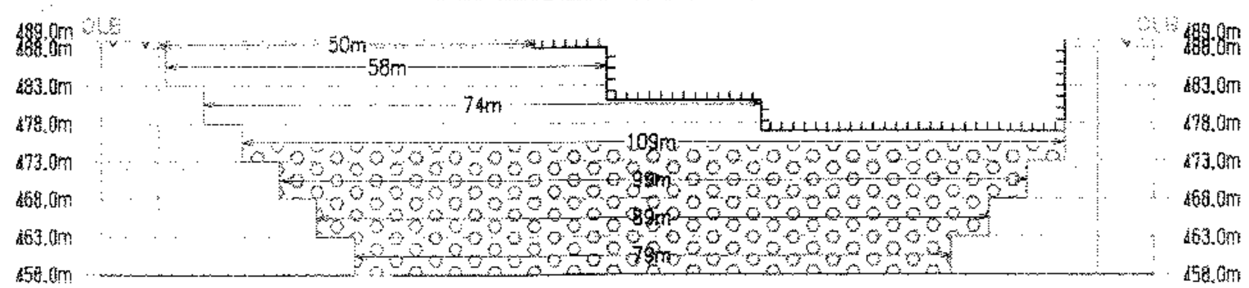
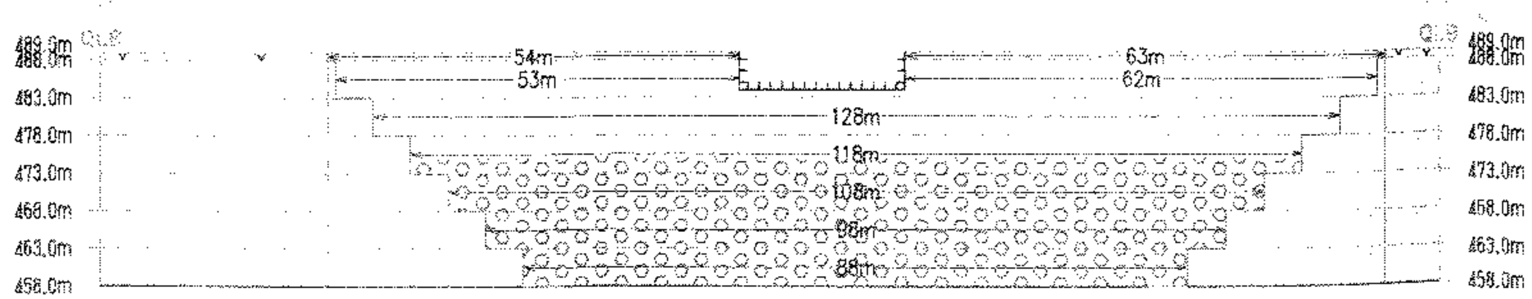


SECTION ALONG A3-B3



SECTION ALONG A4-B4



MINEABLE RESERVES

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Top Soil in m3	Total Reserves m3	Recoverable Reserve (Grey Granite) 40% in m3	Granite Waste 60% in m3
TOP SOIL								
XY-A1B1		66	98	1	6486			
XY-A2B2		42	125	1	5250			
XY-A3B3		1	30	1	30			
XY-A4B4		20	117	1	2340			
TOTAL					14106			
GREY GRANITE								
XY-A1B1		65	96	5		31200	12480	18720
		60	85	5		25500	10520	15460
	V	55	76	5		20900	8360	12540
	V	50	66	5		16500	6600	9900
	V	45	56	5		12600	5040	7560
	V	40	46	5		9200	3680	5520
XY-A2B2		42	123	5		25830	10332	15498
		42	113	5		23730	9492	14238
	V	42	103	5		21630	8652	12978
	V	42	93	5		19530	7812	11718
	V	42	83	5		17430	6972	10458
	V	42	73	5		15330	6132	9198
XY-A3B3		44	58	5		12760	5104	7656
	V	59	74	5		21830	8732	13098
	V	59	109	5		32155	12862	19293
	V	59	99	5		29205	11682	17523
	V	59	89	5		26255	10502	15753
	V	59	79	5		23305	9322	13983
XY-A4B4		19	115	5		10925	4370	6555
		49	128	5		31360	12544	18816
	V	44	118	5		25960	10384	15576
	V	39	108	5		21060	8424	12636
	V	34	98	5		16660	6664	9996
	V	29	88	5		12760	5104	7656
TOTAL					14106	503815	201566	302349

COMMISSIONER OF GEOLOGY AND MINING, GUINDY, CHENNAI

PLATE NO:VII-A

DATE OF SURVEY: -10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

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Q. LEASE BOUNDARY

7.5m SAFETY DISTANCE

TOP SOIL

GREY GRANITE

PROPOSED BACKFILLING

ULTIMATE PIT SLOPE

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

SCALE 1 : 1000

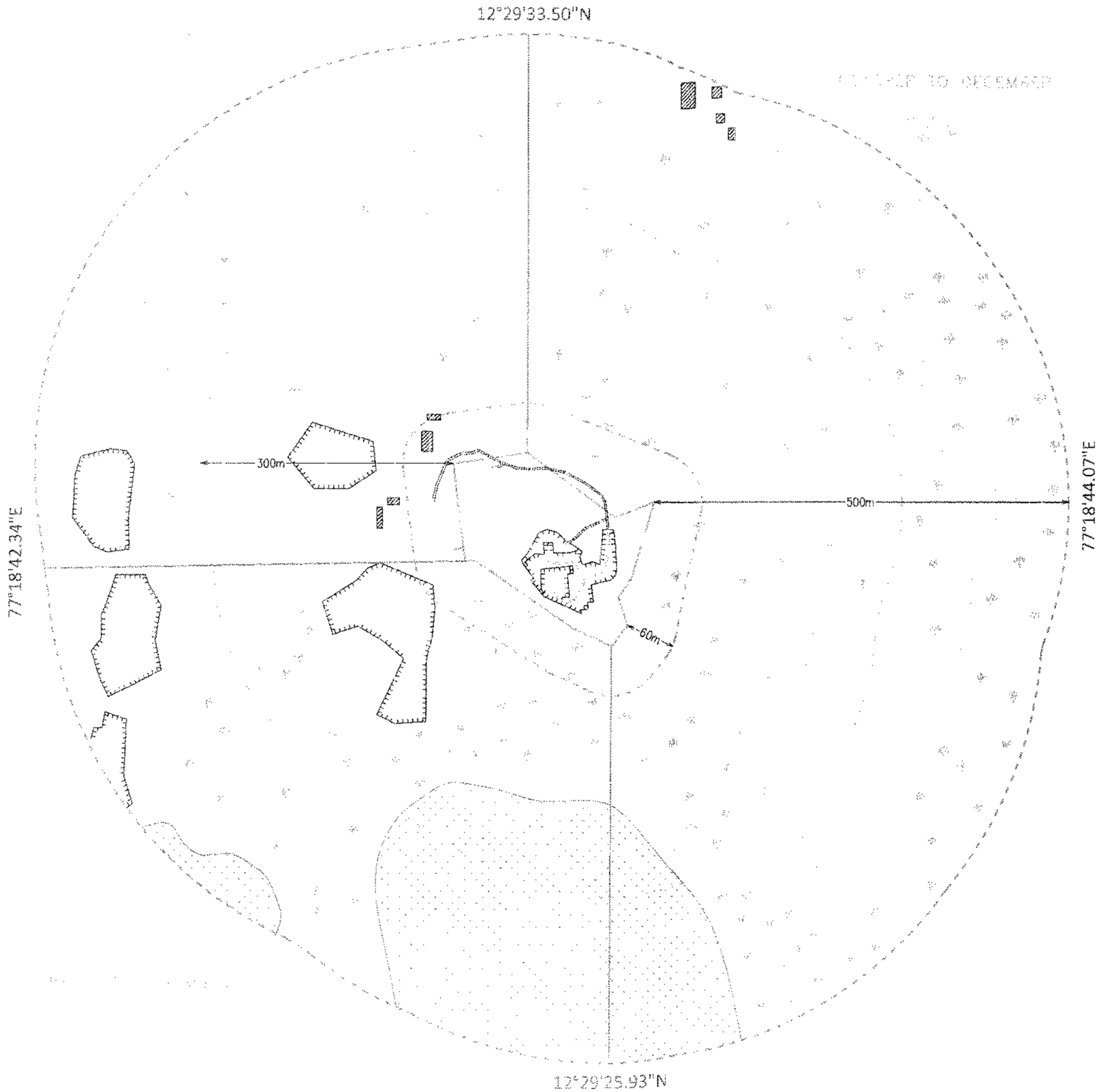


PLATE NO: VIII

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN.
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

INDEX

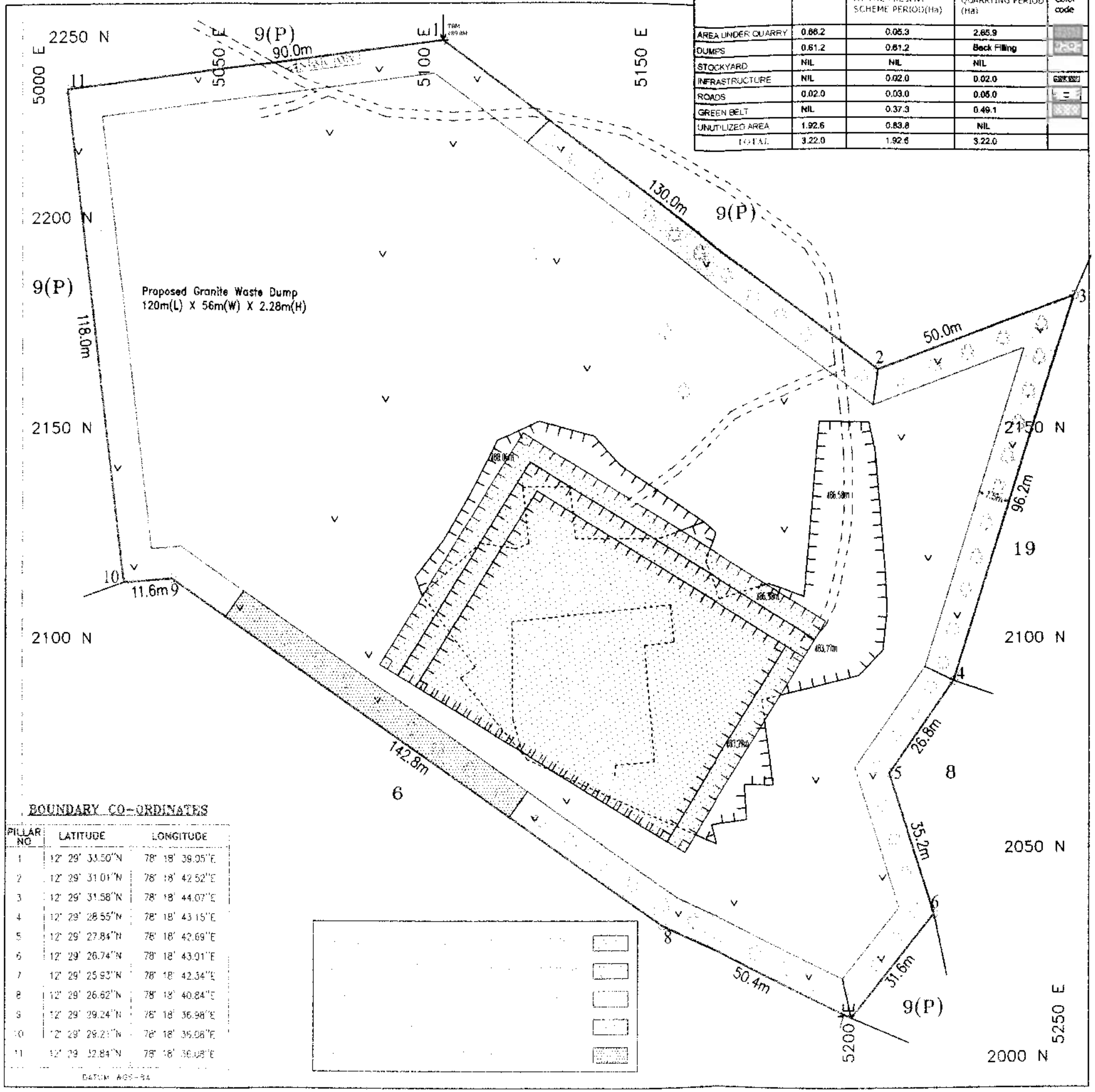
Q. BOUNDARY	
500m RADIUS	
300m RADIUS	
60m RADIUS	
TREES	
CART TRACK	
APPROACH ROAD	
QUARRY ROAD	
WIND DIRECTION	
DRY AGRICULTURAL LAND	
SMALL HILLOCK	
INFRASTRUCTURES	
QUARRY PIT	
EXISTING WASTE DUMP	
ADJACENT QUARRY	

TOPO SHEET NO. : 57L/07
LATITUDE : 12° 29' 25.93"N to 12° 29' 33.50"N
LONGITUDE : 78° 18' 42.34"E to 78° 18' 44.07"E

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

SCALE 1:5000



		AREA TO BE REQUIRED AT THE PRESENT SCHEME PERIOD(Ha)	END OF LIFE OF QUARRYING PERIOD (Ha)	Color code
AREA UNDER QUARRY	0.66.2	0.05.3	2.65.9	
DUMPS	0.61.2	0.61.2	Back Filling	
STOCKYARD	NIL	NIL	NIL	
INFRASTRUCTURE	NIL	0.02.0	0.02.0	
ROADS	0.02.0	0.03.0	0.05.0	
GREEN BELT	NIL	0.37.3	0.49.1	
UNUTILIZED AREA	1.92.6	0.83.8	NIL	
TOTAL	3.22.0	1.92.6	3.22.0	

BOUNDARY CO-ORDINATES

PILLAR NO	LATITUDE	LONGITUDE
1	12° 29' 33.50"N	78° 18' 39.05"E
2	12° 29' 31.01"N	78° 18' 42.52"E
3	12° 29' 31.58"N	78° 18' 44.07"E
4	12° 29' 28.55"N	78° 18' 43.15"E
5	12° 29' 27.84"N	78° 18' 42.69"E
6	12° 29' 26.74"N	78° 18' 43.01"E
7	12° 29' 25.93"N	78° 18' 42.34"E
8	12° 29' 26.62"N	78° 18' 40.84"E
9	12° 29' 29.24"N	78° 18' 36.98"E
10	12° 29' 29.21"N	78° 18' 35.06"E
11	12° 29' 32.84"N	78° 18' 36.08"E

DATUM WGS-84

N

PLATE NO:IX

DATE OF SURVEY: 17-10-2020

LESSEE ADDRESS:

THIRU.S.VENKATESAN,
S/o. SUBBAN,
NO.26/1, CB ROAD,
BARGUR (POST),
KRISHNAGIRI TALUK,
KRISHNAGIRI DISTRICT - 635 104.

INDEX

- Q. LEASE BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- TOP SOIL
- TREES
- QUARRY PIT
- QUARRY ROAD
- GREY GRANITE
- PROPOSED GRANITE WASTE DUMP
- MINE LAYOUT

LOCATION OF QUARRY:

EXTENT	: 3.22.0 Ha.
S.F.No	: 9(Part),
VILLAGE	: JAGADEVIPALAYAM,
TALUK	: BARGUR,
DISTRICT	: KRISHNAGIRI,
STATE	: TAMIL NADU.

PROGRESSIVE MINE CLOSURE PLAN

SCALE 1 : 1000

S.DHANASEKARAN

ANNEXURE-V

VAO CERTIFICATE

Thiru. S.VENKATESAN Grey Granite quarry in the S.F.No. 9(Part), over an extent of 3.22.0 ha. in Jagadevipalayam Village, Krishnagiri Taluk, Krishnagiri District.

GENERAL VIEW OF THE QUARRY LEASE AREA

S. VENKATESAN
(Deponent)

(VAO)

Village Administrative Officer
17, JAGADEVI PALAYAM
Bargur - Tk, Krishnagiri Dt

சான்று:-

கிருஷ்ணகிரி மாவட்டம், பர்கூர் வட்டம், உள்வட்டம்
17, ஜெகதேவிபாளையம் வருவாய் கிராமத்தில் : 9-
1.4 பரப்பு: 4-81-50 தீர்வை: 6.30 பட்டா எண்: 402
வெங்கடேசன் (1) ஜெயபாலன் (2) ஆகிய இருவர்களின்
பெயரில் பரப்பு: 3.22.00 ஹெக்டேர் நிலம் பெயரில்
உள்ளது. மேலும் அவரது பெயரில் கிராமத்தில் பெயரில்
வெளிப்படும் வருகிறது மேலும் இந்த கிராமத்தில்
பெயரில் அவர் நல்ல முறையில் அதிகமாக விவசாயம் செய்து வருகிறார்
மேற்படி புராதன கிணற்றில், பம்ப்செட், மோட்டார்,
போன்ற வசதி இல்லை என சான்று அளிக்கிறேன்.

J. Rameshwar
16/04/2021

Village Administrative Officer
17, JAGADEVI PALAYAM
Bargur - Tk, Krishnagiri - Dt.

ANNEXURE-VI

AFFIDAVIT AND CER DETAILS

भारतीय गैर न्यायिक

बीस रुपये

रु.20

Rs.20

TWENTY RUPEES

INDIA

INDIA NON JUDICIAL

TAMIL NADU

Rs20/-

S. வெங்கடேசன்

IB 701211

P.RAVICHANRAN
STAMP VENDER,
L.No: 23385/B1/81,
BARGUR, TAMILNADU

AFFIDAVIT TO SEIAA, TAMIL NADU

I, Thiru S. Venkatesan, S/o. Subban, residing at No.26/1, CB Road, Bargur Post, Krishnagiri (Now Bargur) Taluk, Krishnagiri District – 635 104 do hereby solemnly declare and sincerely affirm that, I have applied for Terms of reference towards getting environment clearance from SEIAA Tamil Nadu for Grey Granite Quarry at Survey No. 9(Part) over an area of 3.22.0 Ha in Jagadevipalayam village, Krishnagiri (Now Bargur) Taluk, Krishnagiri District, Tamil Nadu.,

1. I swear to state and confirm that within 10km area of the quarry site, we have applied for environmental clearance, the following is situated
   a. Protected areas notified under the wild life (Protection) Act, 1972 (NBWL).
   b. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and control of Pollution) Act 1974 is not present.
   c. Tamil Nadu- Andhra Pradesh Interstate boundary lies at a distance of 4.80Km from the lease area.
   d. 10 km buffer from the lease area does not fall in the Western Ghats ESA as per MoEF & CC draft notification dated 3rd October 2018

BEFORE ME

S. Venkatesan

2. I will complete the following Corporate Environment Responsibility (CER) activities before commencement of the quarrying activities.

CER Activity	Project cost (Rs)	CER cost 2 % of Project cost (Rs)
Developing the library, Sports/ Drinking water facilities in nearby school.	Rs. 1,37,30,000/-	Rs.2,74,600/-
Total cost Allocation	**Rs. 1,37,30,000/-**	**Rs.2,74,600/-**

× S. Venkatesan

NOTARY ★ GOVT. OF INDIA ★

BEFORE ME
27/4/2021
S. KRISHNAN, B.Sc., B.L.,
ADVOCATE & NOTARY

3. Details of quarries located within 500m radius from the periphery of our quarry.

a) **Details of quarry within 500m radius from the applied area**

Sl. No	Name of the Lessee	Village & Taluk	S.F. Nos	Extent in Ha	GO No. & Date	Lease Period	Last permit issued date
i)Existing other Quarries							
1.	Thiru S. Venkatesan, S/o. Subbam, No.26/1 C.B. Road,, Bargur Post, Bargur Taluk, Krishnagiri District.	Jagadevipalayam & Bargur	9 (Part)	3.22.0	G.O (3D) No.31 Ind (MME-2) Dept. Dt 22.2.2016	04.03.2016 to 03.03.2036	13.2.2020
2.	Tmt. Mariam Banu, W/o. Mir Zasim Ali, No.1/192, Muslim Masuthi St, Jagadevipalayam Village & Post, Krishnagiri Taluk & Dist.	Chendarapalli & Krishnagiri Taluk	378/3 379/7 379/8	3.90.0	G.O. (3D) No.28 Ind (MME-2)Dept. Dt:15.02.2016	01.03.2016 to 29.02.2036	20.03.2020
3.	Thiru.A. Ameed, S/o.Abdul Gaffar, Jagadevipalayam, Krishnagiri Taluk & District.	Chendarapalli Krishnagiri Taluk	377/1B 378/2 377/2A 378/1 377/2B 377/1A1B 377/1A2	2.85.5	G.O. (3D) No.25 Ind (MME-2) Dept Dt:15.02.2016	03.03.2016 to 02.03.2036	14.05.2019
		Total		**9.97.5**			

ii)Details of abandoned/Old quarries:

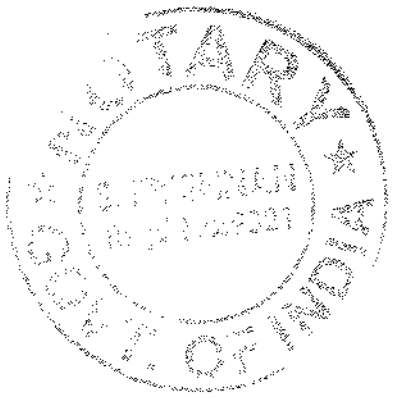
Sl. No	Name of the Lessee	Village & Taluk	S.F.Nos	Extent in Ha	G.O. No & Date	Lease Period
Nil	Nil	Nil	Nil	Nil	Nil	Nil

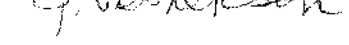
iii)Details of Proposed quarries:

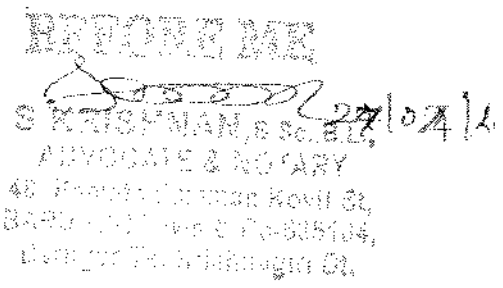
Sl. No	Name of the Lessee	Village & Taluk	S.F.Nos	Extent in Ha	G.O. No & Date	Lease Period
Nil	Nil	Nil	Nil	Nil	Nil	Nil

iv)Details of applied area:

Sl. No	Name of the Lessee	Village & Taluk	S.F.Nos	Extent in Ha	G.O. No & Date	Lease Period
Nil	Nil	Nil	Nil	Nil	Nil	Nil







The total lease within the 500m radius works out to 9.97.5 ha including this lease area. Although the individual lease area of this project is less than 5 Ha, the cluster area within 500m is more than 5 Ha, but the combined area is < 25Ha only. **Under the above circumstances, Terms of Reference is requested towards obtaining environmental clearance.**

3. There will not be hindrance or disturbance to the people living enroute/ nearby our quarry site while transporting the mineral and due to quarrying activities.
4. There is no approved habitation within 300m radius from the periphery of our quarry.
5. I swear that afforestation will be carried out during the course of quarrying operation and maintained.
6. The required insurance will be taken in the name of the laborers working in our quarry site.
7. The existing road from the main road to quarry is in good condition and the same will be maintained and utilized for Transportation of Grey Granite.
8. I will not engage any child labor in our quarry site and I aware that engaging child labor is punishable under the law.
9. All types of safety / protective equipment will be provided to all the laborers working in our quarry.
10. No permanent structures, temple etc., are located within 500m radius from the periphery of our quarry.

I ensure to do the social and Environment commitment as mentioned in the Mining plan to the best of our knowledge.

S. Venkatesan

S. Venkatesan
(Deponent)

S. Venkatesan

BEFORE ME

27/04/20.

S. KRISHNAN, B.Sc., B.L.,
ADVOCATE & NOTARY
49, Kamatchiamman Kovil St,
BAGALUR Town & Po-635104,
Hosur Tk, Krishnagiri Dt.

ANNEXURE-VII

NABET CERTIFICATE

QUALITY COUNCIL® OF INDIA
Creating an Ecosystem for Quality

National Accreditation Board for Education and Training

Certificate of Accreditation

Eco Tech Labs Pvt Ltd.,

48, 2nd Main Road, Ram Nagar South Extension, Pallikaranai, Chennai- 600100, T.N.

*The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA-EMP reports in the following Sectors –*

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals - including Open cast only	1	1 (a) (i)	B
2	Thermal power plants	4	1(d)	A
3	Coal washeries	6	2 (a)	B
4	Metallurgical industries - Ferrous only	8	3 (a)	B
5	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	A
6	Airports	29	7 (a)	A
7	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	A
8	Building and construction projects	38	8 (a)	B
9	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAAC minutes dated Apr. 20, 2021 and supplementary minutes dated Oct.19, 2021 posted on QCI-NABET website

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/22/2217 dated Jan. 19, 2022. The accreditation needs to be renewed before the expiry date by Eco Tech Labs Pvt. Ltd., Chennai following due process of assessment.

Sr. Director, NABET
Dated: Jan. 19, 2022

Certificate No.
NABET/EIA/2124/SA 0147

Valid up to
Sep. 15, 2023

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.