

Application Form (Draft EIA Report)

For

Thiru. G. Perumal

Rough Stone Quarry – 4.94.32 Ha

at

S.F.No. 314 (Part III) in Thuppuganapalli Village,
Shoolagiri 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: November 2023 to January 2024

*Environmental Consultant
& Laboratory details:*
Ecotech Labs Pvt Ltd,



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

Proponent details
Thiru. G. Perumal,
S/o. Gopal A-14,
Thally Hudco, Thally
Road, Hosur Taluk,
Krishnagiri District
- 635 109

Thiru. G. Perumal
S/o. Gopal,
A-14, Thally Hudco, Thally Road
Hosur Taluk, Krishnagiri District – 635 109

UNDERTAKING

I, Thiru. G. Perumal, undertaking that the Draft Environmental Impact Assessment (EIA) Report for Rough Stone Quarry over an extent of 4.94.32 Ha at S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri 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 Letter No. SEIAA-TN/F. No. 10312/SEAC/1(a)ToR-1647/2023 Dated: 22.12.2023.

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

Yours faithfully

Date:

Plot No.48A, 2nd Main Road,
Ram Nagar, South Extension,
Pallikarznai, Chennai - 600 100.
GST NO. 33AADCE6103A22H
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 Rough Stone Quarry over an extent of 4.94.32 Ha at S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri 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 misleading 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:

Place: Chennai

Declaration by Experts contributing to the EIA of Existing Rough Stone Quarry- 4.94.32
Ha by Thiru. G. Perumal at S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri
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.

EIA Coordinator: Dr. A. Dhamodharan








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.





Signature:




Period of involvement: November 2023 to Till now

Contact information: M/s. Eco tech Labs Pvt Ltd,
No. 48, 2nd Main road, Ram Nagar South Extension,
Pallikaranai

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: November 2023 - Till now	

2	WP	Dr. A. Dhamodharan	<p>1. Selection of baseline Monitoring Locations for Ground water analysis and also identifying nearest surface water to be studied.</p> <p>2. Interpretation of baseline data collected</p> <p>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</p> <p>4. Preparation of suitable and appropriate mitigation plan.</p> <p>Period: November 2023 - Till now</p>	
3	SHW	Dr. A. Dhamodharan	<p>1. Identification of nature of solid waste generated</p> <p>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</p> <p>3. Suggesting suitable mitigation measures by recommending appropriate disposal method for each category of waste generated</p> <p>4. Top soil and refuse management</p> <p>Period: November 2023 - Till now</p>	
4	SE	Mr. S. Pandian	<p>1. Primary data collection through the census questionnaire</p> <p>2. Obtaining Secondary data from authenticated sources and incorporating the same in EIA report.</p> <p>3. Impact assessment & proposing suitable mitigation plan</p> <p>4. CSR budget allocation by discussing with the local body and allotting the same for need based activity.</p> <p>Period: November 2023 - Till now</p> <p>*Involves Public Hearing</p>	
5	EB	Dr. A. Dhamodharan	<p>1. Primary data collection through field survey and sheet observation for ecology and biodiversity</p>	

			<p>2.Secondary Collection through various authenticated sources</p> <p>3.Prediction of anticipated impacts and suggesting appropriate mitigation measures.</p> <p>Period: November 2023 - Till now</p>	
6	HG	Dr. T. P. Natesan	<p>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</p> <p>2. Determination of groundwater use pattern, development of rainwater harvesting program. Storm water management through garland drainage system.</p> <p>Period: November 2023 - Till now</p>	
7	GEO	Dr. T. P. Natesan	<p>1. Field survey for assessing regional and local geology, aquifer distribution, Determination of groundwater use pattern, development of rainwater harvesting program.</p> <p>Period: November 2023 - Till now</p>	
8	SC	Dr. A. Dhamodharan	<p>1. Interpretation of baseline report</p> <p>2. Identification of possible impacts on soil, prediction of soil conservation and suggesting suitable mitigation measures.</p> <p>Period: November 2023 - Till now</p>	
9	AQ	Mrs. K. Vijayalakshmi	<p>1. Collection of Meteorological data for the baseline study period</p> <p>2. Plotting wind rose plot and thereby selecting the monitoring locations based on the wind pattern</p> <p>3. Estimation of sources of air emissions and air quality modeling is done</p> <p>4. Interpretation of the results obtained</p> <p>5. Identification of the impacts and suggesting suitable mitigation measures.</p> <p>Period: November 2023 - Till now</p>	

10	NV	Mrs. K. Vijayalakshmi	<ol style="list-style-type: none"> 1. Selection of monitoring locations 2. Interpretation of baseline data 3. Prediction of impacts due to noise pollution and suggestion of appropriate mitigation measures <p>Period: November 2023 - Till now</p>	
11	LU	Dr. T. P. Natesan	<ol style="list-style-type: none"> 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. <p>Period: November 2023 - Till now</p>	
12	RH	Mrs. K. Vijayalakshmi	<ol style="list-style-type: none"> 1. Identification of the risk 2. Interpreting consequence contours 3. Suggesting risk mitigation measures <p>Period: November 2023 - Till now</p>	

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 S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri 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:




Name: Dr. A. Dhamodharan

Designation: Managing Director

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

NABET Certificate No. & Issue Date: NABET/EIA/2124/SA 0147

<i>Project</i>	<i>Rough Stone Quarry- 4.94.32 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru. G. Perumal</i>	
<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

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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

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EXECUTIVE SUMMARY

1. Project Background:

The existing Rough Stone Quarry is over an extent of 4.94.32 Ha. It is a Government land in S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District. The project comes under Category B1. The area is situated on hilly terrain sloping towards North Eastern side.

The quarry operation is proposed to carry out with conventional open cast semi-mechanized mining with 5.0 meter vertical bench and with a bench width of 5.0 meter. The Quarry operation involves shallow jack hammer drilling, slurry blasting, loading and transportation.

The quarry operation is proposed up to depth of 49 m (1 m topsoil and 48 m rough stone) (including the existing depth) for a period of 5 years. The total Geological Resources is about 8,74,879 m³ of Rough stone and 9,371 m³ of Topsoil. The Mineable Reserves is estimated at 7,37,960 m³ of Rough Stone and 6,831 m³ of Topsoil to be mined for (Sixty months) Five years only. The Precise Area Communication Letter received from The District Collector, Department of Geology and Mining, Krishnagiri District vide Rc. No.214/2018/Mines dated 09.03.2018. The Scheme of Mining Plan was approved by The Deputy Director, Department of Geology & Mining, Krishnagiri vide Roc. No. 214/2018/Mines dated 20.10.2023.

The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats, notified Bird sanctuaries, within the radius of 15Km.

2. NATURE & SIZE OF THE PROJECT

The existing Rough Stone Quarry over an extent of 4.94.32 Hectares land is located at Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District.

Mineral intends to quarry	: Rough stone Quarry
District	: Krishnagiri
Taluk	: Shoolagiri
Village	: Thuppuganapalli
S. F. Nos.	: 314 (Part III)
Extent	: 4.94.32 Hectares

Project	Rough Stone Quarry- 4.94.32 Ha	Draft EIA Report
Project Proponent	Thiru. G. Perumal	
Project Location	Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District	

Table 1: Brief Description of the Project

S. No	Particulars	Details
1.	Latitude	12° 36' 53.0353"N to 12° 36' 45.6499"N
2.	Longitude	77° 55' 25.4549"E to 77° 55' 18.3602"E
3.	Site Elevation above MSL	822 m from MSL
4.	Topography	Hilly terrain topography
5.	Land use of the site	Government Land
6.	Extent of lease area	4.94.32 Ha
7.	Nearest highway	SH 17 (Shoolagiri – Denkanikottai Road) – 0.66 km, E
8.	Nearest railway station	Periya Nagathunai Railway Station - 5.98 km SW
9.	Nearest airport	Kempegowda International Airport – 67.68 km NW
10.	Nearest town / city	Town – Shoolagiri - 10.94 km NE City – Shoolagiri - 10.94 km NE District - Krishnagiri – 33.10 km SE
11.	Rivers / Canal	❖ Ponnaiyar River – 4.39 km N ❖ Chinnar River – 8.39 km SW
12.	Lake	❖ Govidhan Lake – 5.42 km NW ❖ Nanjappan Kodigai Lake – 6.86 km SW ❖ Kamandoddi Old Lake – 7.13 km NE ❖ Kamandoddi Lake-7.76 km NE ❖ Kamandoddi New Lake – 8.18 km NE ❖ Konerapalli Lake – 8.37 km NE ❖ Chappadi Lake – 8.42 km N ❖ Chikke Goundan Lake – 9.80 km SE ❖ Bharadhangi Lake – 10.17 km SE ❖ Tippalam Lake – 11.33 km NW ❖ Kumudapalli Lake – 11.63 km NW ❖ Bukkasagaram Lake – 11.96 km NE ❖ Pachapalli Reservoir – 12.43 km S ❖ Shoolagiri/Chinnar Reservoir – 13.51 km NE
13.	Dam	❖ Shoolagiri/Chinnar Dam – 14.24 km NE ❖ Panchapalli Dam – 14.80 km S
14.	Hills / valleys	❖ Brahmma Hills – 14.24 km NW
15.	Archaeologically places	❖ Shoolagiri Fort – 11.88 km NW
16.	National parks / Wildlife Sanctuaries	❖ Cauvery North Wildlife Sanctuary – 8.40 km S
17.	Reserved / Protected Forests	❖ Sanamavu RF – 3.12 km NW ❖ Udedurgam RF – 8.15 km SW ❖ Perandapalli RF – 9.32 km NW

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<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

		<ul style="list-style-type: none"> ❖ Denkanikotta RF – 10.93 km SW ❖ Ramasandiram RF – 12.78 km N ❖ Athimugam RF – 13.49 km NE ❖ Sengodachinnahalli RF – 14.18 km SE
18.	Seismicity	Mine Lease area comes under Seismic zone-III

2. NEED FOR THE PROJECT

- ❖ Rough stone is quarried for producing crusher aggregates to the nearby building contractors, road contractors and nearby villagers.
- ❖ After the entire reserves mined out, the area will be used as water reservoir to have an artificial recharge to the nearby wells.
- ❖ The rough stone is hard and compact in nature. It can be crushed only in crushers for producing aggregates.
- ❖ As the mining continues, no reclamation or back filling is required.

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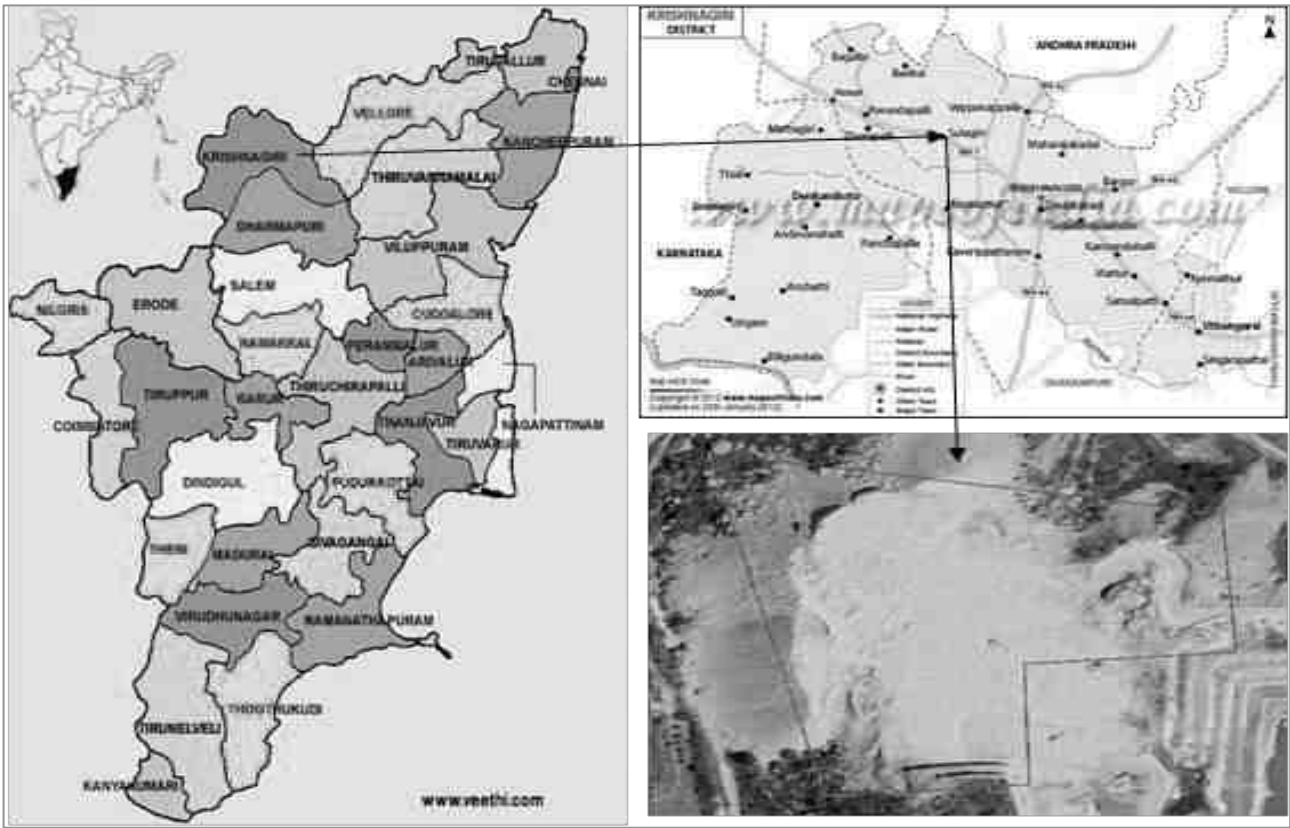


Figure 1: Location Map of the Project Site



Figure 2: Google Image of the Project Site

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4. CHARNOCKITE

Generally, the Charnockite is grey to greenish colored, coarse to medium grained, greasy nature with or without garnet. Because of the limited outcrops, the quarry sections are studied to infer the various interrelationships between the litho units. Charnockite is interbanded nature with crystalline carbonate rocks are observed in most of the quarry in Pandalgudi, Lakshmipuram, Gopalapuram, Sundakottai chinnakamanpatti, Weathering of the Charnockite on the surface gives a deceptive look of gneiss and in the quarry sections at depth the fresh charnockite is exposed, which are well exemplified in almost all the Charnockite quarry sections.

5. GEOLOGICAL RESOURCES

Table 2. Geological resources

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m (100%)	Topsoil in Cu.m.
XY-AB	I	120	77	1			9240
	II	34	35	5	5950	5950	
	III	60	45	5	13500	13500	
	IV	69	50	5	17250	17250	
	V	76	55	5	20900	20900	
	VI	83	59	5	24485	24485	
	VII	239	101	5	120695	120695	
	VIII	273	105	5	143325	143325	
	IX	277	110	5	152350	152350	
	X	277	114	5	157890	157890	
	XI	277	114	3	94734	94734	
Total					751079	751079	9240
X1Y1-AB	I	1	131	1			131
	II	81	17	5	6885	6885	
	III	93	35	5	16275	16275	
	IV	104	52	5	27040	27040	
	V	116	70	5	40600	40600	
	VI	125	88	3	33000	33000	
Total					123800	123800	131
Grand Total					874879	874879	9371

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Table 3. Mineable Resources

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m (100%)	Topsoil in Cu.m.
XY-AB	I	100	67	1			6700
	II	34	35	5	5950	5950	
	III	60	45	5	13500	13500	
	IV	69	50	5	17250	17250	
	V	76	55	5	20900	20900	
	VI	83	59	5	24485	24485	
	VII	239	101	5	120695	120695	
	VIII	250	103	5	128750	128750	
	IX	240	98	5	117600	117600	
	X	230	93	5	106950	106950	
	XI	230	88	3	58080	58080	
Total					614160	751079	6700
X1Y1-AB	I	1	131	1			131
	II	81	17	5	6885	6885	
	III	93	35	5	16275	16275	
	IV	104	52	5	27040	27040	
	V	116	70	5	40600	40600	
	VI	125	88	3	33000	33000	
Total					123800	123800	131
Grand Total					737960	737960	6831

Table 4. Year wise Production Plan

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m (100%)	Topsoil in Cu.m.
06.12.2024 - 05.12.2025	XY-AB	I	100	67	1			6700
		II	34	35	5	5950	5950	
		III	60	45	5	13500	13500	
		IV	69	50	5	17250	17250	
		V	76	55	5	20900	20900	
		VI	83	59	5	24485	24485	
Total						82085	82085	6700

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06.12.2025	XY-AB	VII	239	101	5	120695	120695	
-	X1Y1-AB	I	1	131	1			131
05.12.2026		II	81	14	5	6885	6885	
Total						127580	127580	131
06.12.2026	XY-AB	VIII	250	103	5	128750	128750	
-	X1Y1-AB	III	93	35	5	16275	16275	
15.12.2027		IV	104	52	5	27040	27040	
Total						145025	145025	
06.12.2027	XY-AB	IX	240	98	5	117600	117600	
-	X1Y1-AB	IV	104	52	5	27040	27040	
05.12.2028		V	116	70	5	40600	40600	
Total						144640	144640	
06.12.2028	XY-AB	X	230	93	5	106950	106950	
-		XI	220	88	3	58080	58080	
05.12.2029	X1Y1-AB	VI	125	88	3	33000	33000	
Total						238630	238630	
Grand Total						737960	737960	6831

The proposed rate of production of Rough stone is estimated as 737960 m³ for five years.

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 shallow jack hammer drilling, slurry blasting, loading and transportation.

Process Description

- The reserves and resource are arrived based upon the Geological investigation
- Removal of Rough Stone by Excavators by Drilling and Blasting.
- Shallow Drilling With Jackhammer 25.5 mm Dia.
- Minimum Blasting With Class 3 Explosives.

7. Water Requirement

This Rough stone quarry project does not require huge water and electricity for the project.

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Table 5. Water Balance

Purpose	Quantity	Sources
Domestic & Flushing	1.0 KLD	Water will be supplied through tankers from Thiyaranadurgam Village (0.51 km SW of the project site).
Green belt	0.5KLD	Water tanker supply
Dust suppression	0.5 KLD	Water tanker supply
Total	2.0 KLD	

8. Manpower

The nearby villagers will be getting employment benefits in the proposed working quarry.

Table 6. Man Power

1.	Skilled	Foreman/Part time Mining Engineer	1 No.
		HEMM Operator	2 No.s
		Excavator Operator	2 No.s
		Co-Operator	2 No.s
		Jack Hammer Operator	6 No.s
		Blaster/Mate	1 No.
2.	Semi - skilled		3 No.s
		Watchman	1 No.s
3.	Unskilled	Musdoor / Labours	4 No.s
	Total		22 No.s

9. Solid Waste Management

Table 7 Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	4.0 kg/day	Municipal bin including food waste
2	Inorganic	6.0 kg/day	TNPCB authorized recyclers

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

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Table 8. 500m Radius Cluster Mine

1) Details of Existing Quarries:

S. No.	Name of the Lessee	ROC. No. dated	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	Thiru. G. Perumal	Rc. No. 214/2018/Mines dated 06.12.2018	Thuppuganapalli Village Shoolagiri Taluk	314 (Part -3)	4.94.32	06.12.2019 To 05.12.2029
2.	Thiru. G. Perumal	Rc. No. 97/2016/Mines dated 04.08.2016	Thuppuganapalli Village Shoolagiri Taluk	314 (Part -1)	3.00.0	10.08.2016 to 09.08.2026

2) Details of Abandoned /Old Quarries

S. No.	Name of the Lessee	ROC. No. dated	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	Thiru. G. Perumal	Rc. No. 703/2005/Mines-2 dated 12.08.2015	Thuppuganapalli Village Shoolagiri Taluk	314 (Part -2)	5.00.0	12.09.2005 to 11.09.2015

3) Details of Other Proposed /Applied Quarries

S. No.	Name of the Lessee	ROC. No. dated	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	-----Nil-----					

10. Land Requirement

The total extent area of the project is 4.94.32 Ha, Government Land in Thuppuganapalli Village, Shoolagiri Taluk, and Krishnagiri District.

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Table 9 Land Use Breakup

Sl. No.	Land Use	Present Area (Hect)	Area in use during the Quarrying Period (Hect)
1.	Area under quarrying	2.22.62	4.15.38
2.	Infrastructure	Nil	0.01.00
3.	Roads	0.01.00	0.01.00
4.	Green Belt & dump	Nil	0.76.94
5.	Unutilized area	2.70.70	Nil
	Total	4.94.32	4.94.32

11. Human Settlement

There are no habitations within 300m radius. There are villages located in this area within 15 km radius of the quarry.

Table 10 Habitation

Direction	Village	Distance In Kms	Population
North	Kummepalli	2.4 Kms	270
East	T. Kurubarapalli	3.0 Kms	250
South	Armadpuram	2.5 kms	230
West	Irudhalam	3.0 Kms	200

12. Power Requirement

The Electricity for Mines office and Lights only at nights (working is restricted on day time only between 9 Am to 5 Pm). Diesel (HSD) will be used for quarrying machineries around **5,91,507 litres of HSD** will be used for the entire project life. Diesel will be brought from nearby diesel pumps. No power is required for the project. Lightings on the Night time the power will be taken from nearby electric poles after obtaining permission from concerned authorities.

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

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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 : 18° C
- ii) Average Maximum Temperature. : 38° Celsius
- iii) Average Annual Rainfall of the area: 800 mm-900 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 7 locations. Major air pollutants like Particulate Matter (PM10), Sulphur Dioxide (SO₂), and Nitrogen Dioxide (NO₂) were monitored and the results are summarized below.

The baseline levels of PM₁₀ (39- 69 µg/m³), PM_{2.5} (15- 34 µg/m³), SO₂ (6-23 µg/m³), NO₂ (12- 42 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from November 2023 to January 2024.

13.3 Noise Environment

The maximum Day noise and Night noise were found to be 59 dB(A) and 49 dB(A) in Government Polytechnic College, Kelamangalam and Sri Nagamuneswara Temple, Onnagurukki respectively. The minimum Day Noise and Night noise were 36 dB (A) and 30 dB(A) respectively which was observed in Project Site. The observed values are all well within the Standards prescribed by CPCB.

13.4 Water Environment

- The average pH ranges from 7.38 and 7.93
- TDS value varied from 392 mg/l to 975 mg/l

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- Hardness varied from 238 to 529 mg/l
- Chloride varied from 50.1 to 208 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 7.14 to 8.42 with organic matter 7.14 to 8.42%. The concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

13.6 Biological Environment

The existing 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 a Government land. There is no hutment in the lease area. No human being will be displaced from the project area so no person will be affected contrary local people will get job opportunities and better facilities. There is no rehabilitation & resettlement of people is required.

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 Neem, Vilvam, Panai, etc will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 2500 trees with interval 5m.
4. The rate of survival expected to be 80% in this area

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Table.11. Plantation/ Afforestation Program

Name of species proposed	Survival	No of species
Neem, Vilvam, Vaagai, Eachai, Naval, Mantharai, Magizha Maram, Vila Maram, Poo Marudhu, Panai, Marudha maram, Thandri, Sengondrai, Poovarasu, Thethankottai Maram, Pungam	80%	2500
Total		2500

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

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19. Project Cost

The total project cost is **Rs 5,97,40,000/-** 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 .12 Project Cost details

S. No.	Description	Cost (Rs.)
1	Fixed cost	4,67,40,000
2	Operational cost	1,30,00,000
	Total Cost	5,97,40,000

Table .13 EMP Cost

S.No.	Categories	Capital cost (Rs.)	Recurring cost (Rs.)
1	Air Environment	3,09,432	2,05,796
2	Noise Environment	25,000	37,01,800
3	Water Environment	49,432	5000
4	Waste Management	10,000	4000
5	Implementation of EC, Mining plan & DGMS Condition	13,65,800	1,21,886
6	Green belt development	6,50,000	75,000
		24,09,664	41,13,482
	Total	65,23,146	

Year 1	Year 2	Year 3	Year 4	Year 5
65,23,146	43,19,157	45,35,114	47,61,870	49,99,964

Total EMP Cost for 5 Years - Rs. 2,51,39,251/-

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20. Corporate Environmental Responsibility

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

Table 14 CER Cost

S.No.	CER Activity	Cost (Rs)
1.	➤ Wildlife Protection Activities- Fund to the DFO, Krishnagiri for Cauvery North Wildlife Sanctuary	5,00,000/-
Total		5,00,000

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.

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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 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.

1.2 GENERAL INFORMATION ON MINING OF MINERALS

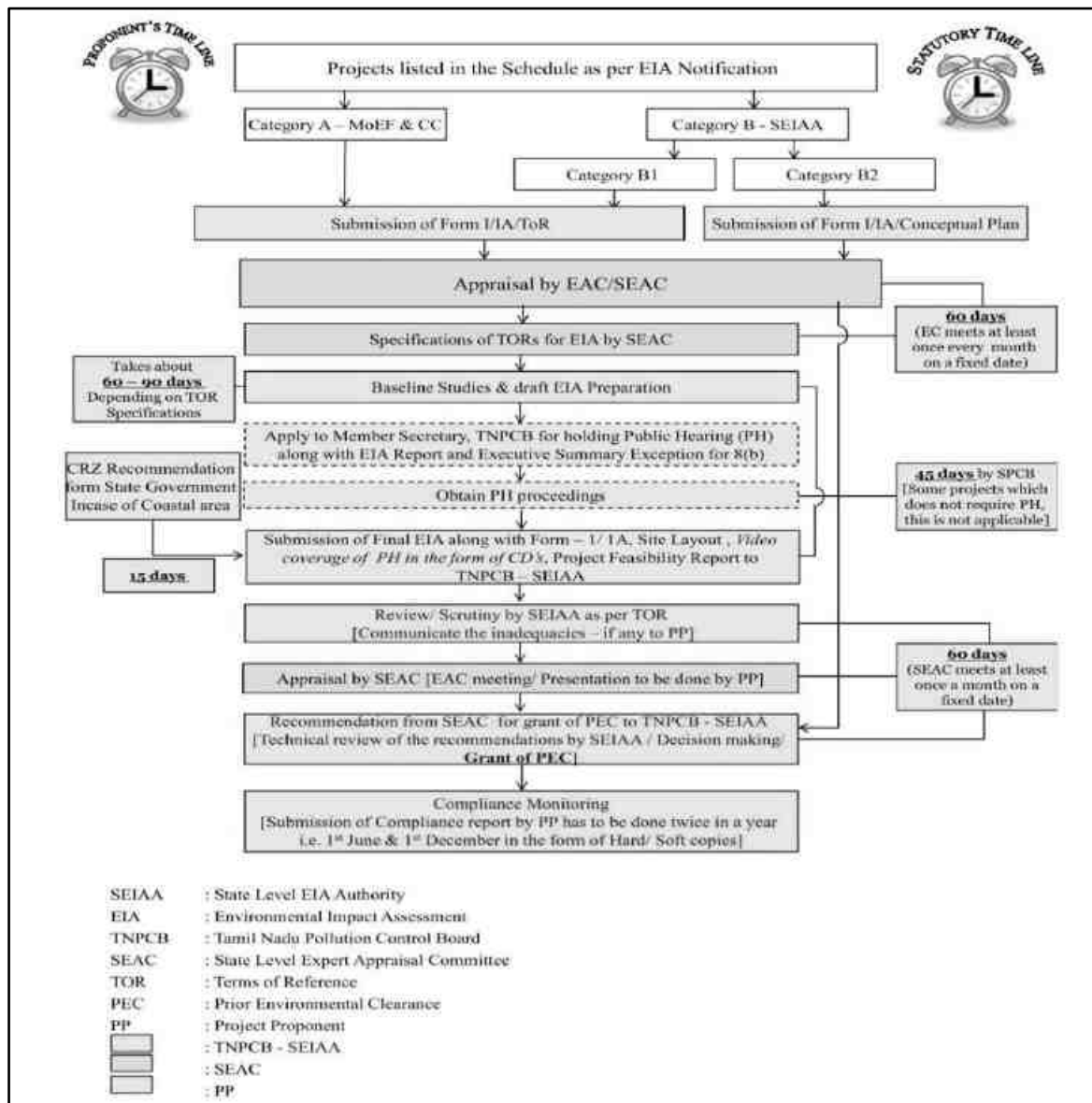
Krishnagiri District is covered with wide range of metamorphic rocks of peninsular gneissic complex. These rock formations occur as massive hillocks all over the district in government lands and patta lands, and extensively weathered formations are overlined by soil / alluvium deposits with an average 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 are 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 project is categorized under Category "B1" 1(a) (Cluster) - {Mining of Minerals} as the 500 m radius area is more than 5 Ha including the mine lease area. Hence, the project will be considered at SEAC, Tamil Nadu.

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1.4 TERMS OF REFERENCE (TOR)

The Terms of Reference have been issued by SEAC TN vide Letter No. SEIAA-TN/F. No. 10312/SEAC/1(a)ToR-1647/2023 Dated: 22.12.2023. The 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 as Annexure 1.

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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 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 also be 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.

<i>Project</i>	<i>Rough Stone Quarry- 4.94.32 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru. G. Perumal</i>	
<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

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, neighborhood, 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 the 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.

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1.7 DETAILS OF PROJECT PROPONENT

Project Proponent : Thiru. G. Perumal,
Status of the Proponent : Proprietor
Proponent's name & address : S/o. Gopal
A-14, Thally Hudco, Thally Road
Hosur Taluk, Krishnagiri District – 635 109

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) Government of India MoEF & CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1.

The project pertains to Rough stone mining project by opencast semi-mechanized method on allotted mine lease area at Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu. It is a hilly terrain area sloping towards North Eastern side. The total allotted mine lease for the project is 4.94.32 Ha with their maximum production capacity i.e., 7,37,960 m³ of Rough stone for the period of Five years only.

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Project Location	Thuppuganapalli Village, Shoalagiri Taluk, Krishnagiri District	

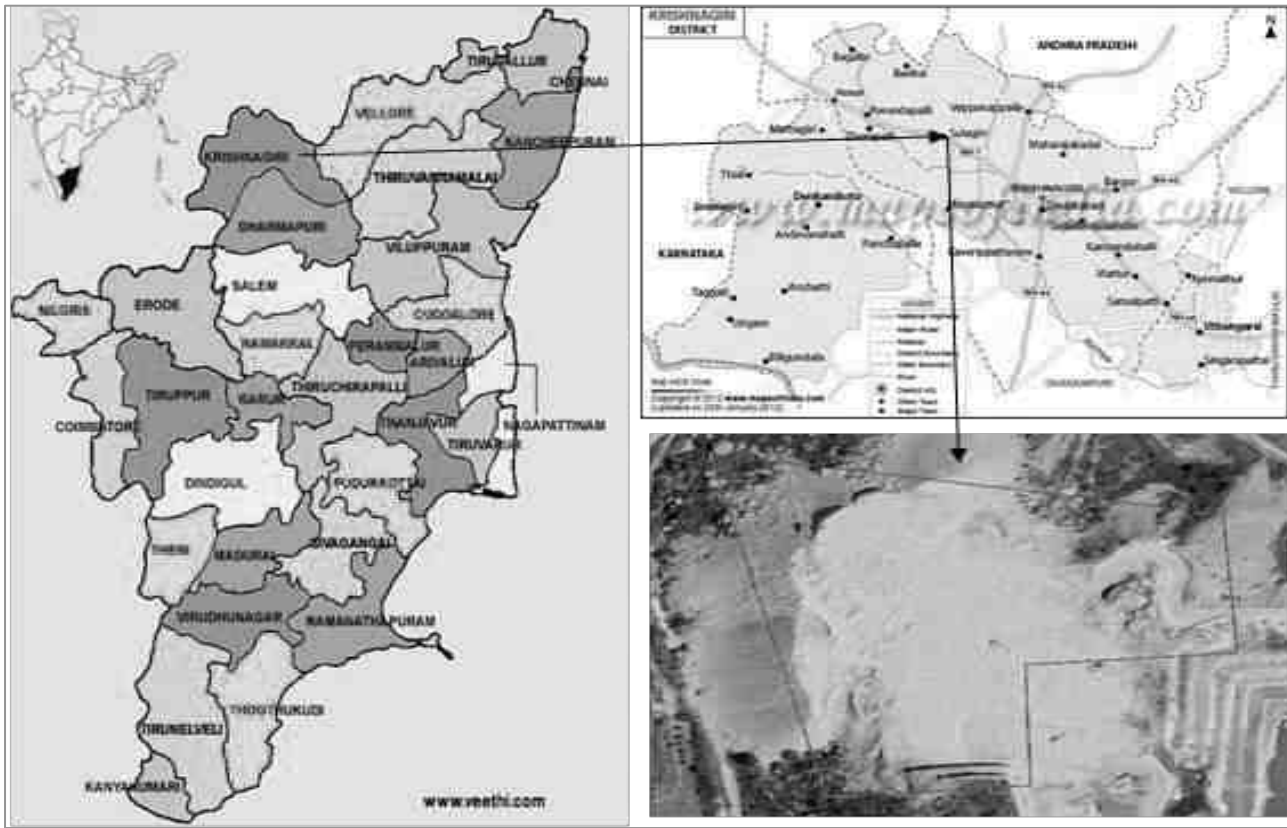


Figure 1.1: Location Map of the Project site

<i>Project</i>	<i>Rough Stone Quarry- 4.94.32 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru. G. Perumal</i>	
<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

2 PROJECT DESCRIPTION

This chapter furnishes detailed description of the 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

The project pertains to Rough stone mining project by open cast semi-mechanized method on allotted mine lease area at Thuppuganapalli Village, Shoolagiri Taluk of Krishnagiri District, Tamil Nadu. It is a hilly terrain area sloping towards North Eastern side. We have obtained the approved scheme of mining plan on 20.10.2023 from Deputy Director, Department of Geology and Mining, Krishnagiri District for 4.94.32 Ha land area in the S.F.No. 314 (Part III). The proposed depth of mining is 49 m (1 m topsoil and 48 m rough stone) (including the existing depth) and five years production of 7,37,960 m³ of Rough stone.

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) Government 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 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 will be incorporated in the Final EIA Report. The mines within 500m radius from the project site are listed below.

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<i>Project Proponent</i>	<i>Thiru. G. Perumal</i>	
<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

Table 2-1: Quarry within 500m Radius

1) Details of Existing Quarries:

S. No.	Name of the Lessee	ROC. No. dated	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	Thiru. G. Perumal	Rc. No. 214/2018/Mines dated 06.12.2018	Thuppuganapalli Village Shoolagiri Taluk	314 (Part -3)	4.94.32	06.12.2019 To 05.12.2029
2.	Thiru. G. Perumal	Rc. No. 97/2016/Mines dated 04.08.2016	Thuppuganapalli Village Shoolagiri Taluk	314 (Part -1)	3.00.0	10.08.2016 to 09.08.2026

2) Details of Abandoned /Old Quarries

S. No.	Name of the Lessee	ROC. No. dated	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	Thiru. G. Perumal	Rc. No. 703/2005/Mines-2 dated 12.08.2015	Thuppuganapalli Village Shoolagiri Taluk	314 (Part -2)	5.00.0	12.09.2005 to 11.09.2015

3) Details of Other Proposed/Applied Quarries

S. No.	Name of the Lessee	ROC. No. dated	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	-----Nil-----					

2.1.1 Need for the 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 rough stone form the primary building material.

Rough stone 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

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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.

Rocks and minerals of economic importance found to occur in Krishnagiri District are Rough stone deposits suitable for the production of Jelly, Cut stones and Pillar Stones.

As a result of developmental activities and market demand for minor minerals, mining of minor mineral is vital. In addition to that, geological reserves of rough stone are abundant in the project area which is evident from the mine activities carried out in the nearby sites.

2.2 BRIEF DESCRIPTION OF THE PROJECT

Table 2-2 Salient Features of the Project

S. No.	Description	Details
1	Project Name	Thiru. G. Perumal, Rough Stone Quarry
2	Proponent	Thiru. G. Perumal
3	Mining Lease Area Extent	4.94.32 Ha (Government Land)
4	Location	S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu State
5	Latitude	Latitude : 12° 36' 53.0353"N to 12° 36' 45.6499"N
6	Longitude	Longitude : 77° 55' 25.4549"E to 77° 55' 18.3602"E
7	Topography	Hilly terrain topography
8	Site Elevation above MSL	822 m from MSL
9	Topo sheet No.	57-H/14
10	Minerals of Mine	Rough Stone Quarry
11	Proposed production of Mine	Proposed Capacity of reserves for 5 Years ➤ Rough stone : 7,37,960 m ³
12	Ultimate depth of Mining	49 m (1 m topsoil and 48 m rough stone) (including existing depth)
13	Method of Mining	Open cast semi-mechanized mining

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14	Water demand	2.0 KLD
15	Source of water	Water will be supplied through tankers supply
16	Man power	22 Nos.
17	Mining Plan Approval	Scheme of Mining Plan was approved by The Deputy Director, Department of Geology & Mining, Krishnagiri vide Roc. No. 214/2018/Mines dated 20.10.2023.
18	Precise area communication letter	The Precise Area Communication Letter received from The District Collector, Department of Geology and Mining, Krishnagiri District vide Rc. No.214/2018/Mines dated 09.03.2018.
19	Production details	Geological reserves: 8,74,879 m ³ of Rough stone Proposed year wise reserves (5 years): 7,37,960 m ³ of Rough stone
20	Boundary Fencing	10 m safety distance all along the boundary for Govt. Lands. Fencing will be provided.
21	Disposal of overburden	The top soil generation from the lease area is estimated to be 6,831 m ³ for 5 years. The top soil formation will be removed and dumped in in Western Side boundary barrier of the lease area. This will be utilized for road low laying area and plantation purposes.
22	Ground water	The ground water table is reported as 90 m BGL in nearby open wells and bore wells of this area. Mining depth taken as 49 m (1 m topsoil and 48 m rough stone) (including existing depth). Now, proposed quarry depth is above the water table. Hence, quarrying may not affect the ground water.
23	Habitations within 300m radius of the Project Site	There is no habitation within 300 m radius of the project site.
24	Drinking water	Water will be supplied through tankers from Thiyaranadurgam Village (0.51 km SW of the project site).

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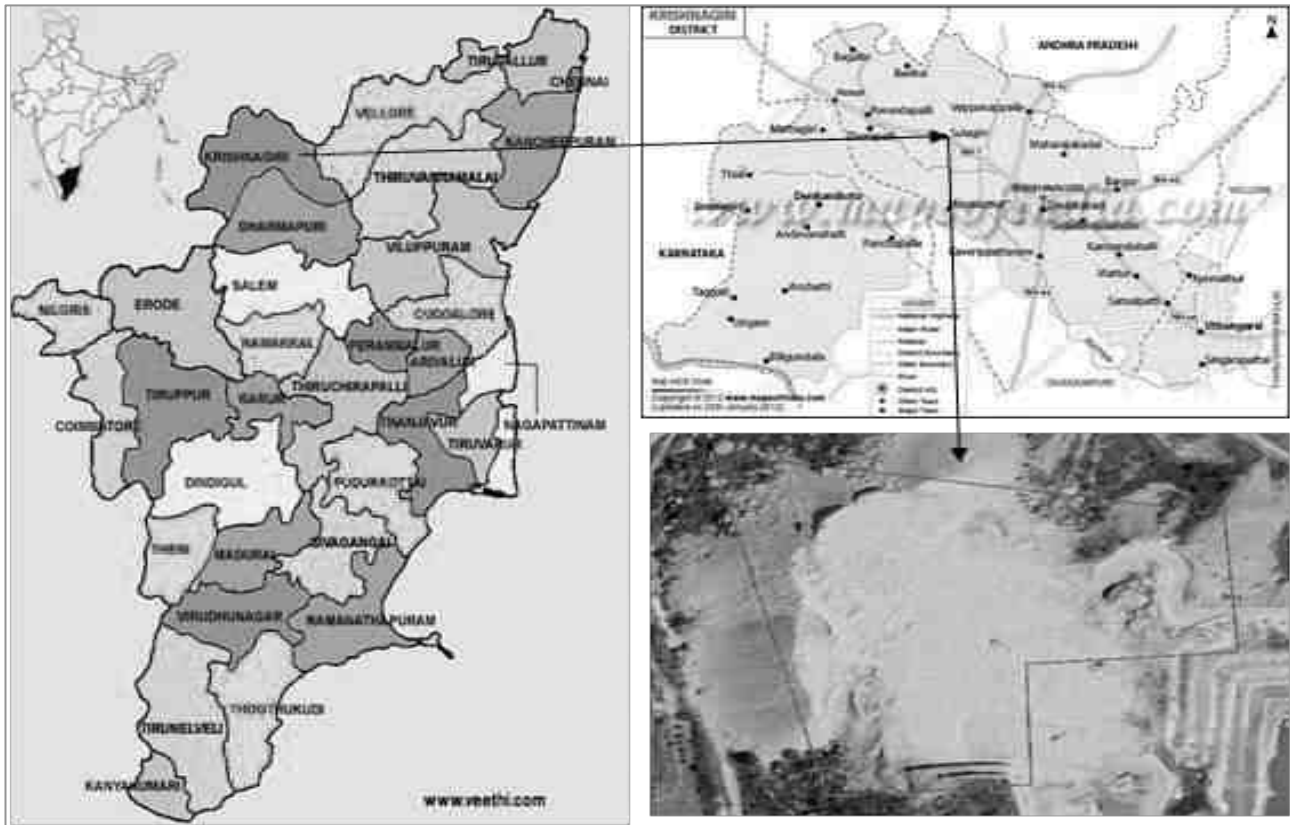


Figure 2.1: Location Map of the Project Site



Figure 2.2: Google Earth Image and Coordinates of the Project Site

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2.2.1 Site Connectivity:

The site is connected to the roadways as follows.

SH 17 (Shoolagiri – Denkanikottai Road) – 0.66 km, E



Figure 2.3: Site Connectivity

2.3 LOCATION DETAILS:

Table 2-3: Location Details

S. No	Particulars	Details
1.	Latitude	12° 36' 53.0353"N to 12° 36' 45.6499"N
2.	Longitude	77° 55' 25.4549"E to 77° 55' 18.3602"E
3.	Site Elevation above MSL	822 m from MSL
4.	Topography	Hilly terrain topography
5.	Land use of the site	Government Land
6.	Extent of lease area	4.94.32 Ha

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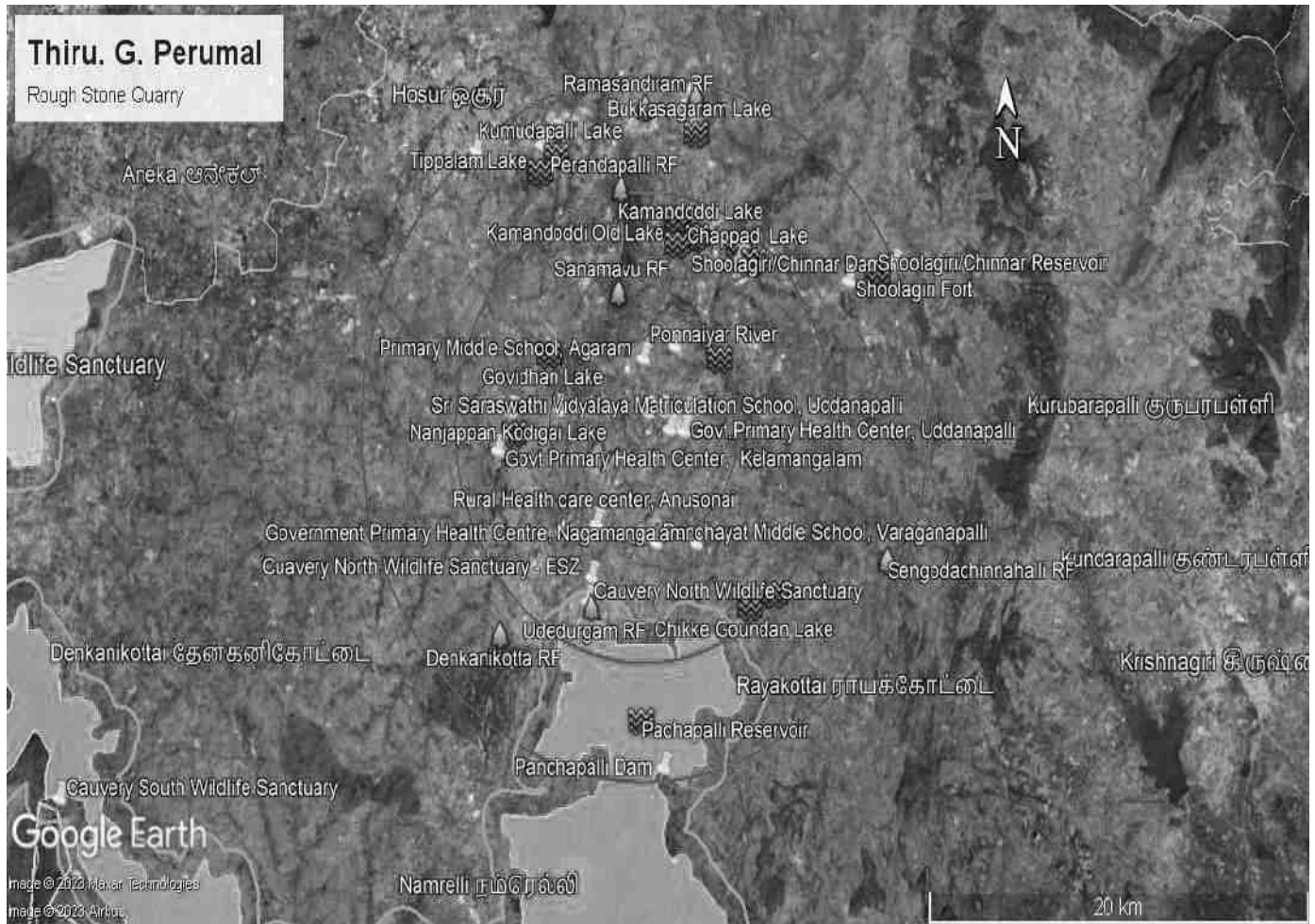


Figure 2.5: Environmental Sensitivity within 15km radius

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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 hilly terrain sloping towards North Eastern side. The land use pattern of the mine lease area is as follows.

Table 2-4: Land Use Pattern

Sl. No.	Land Use	Present Area (Hect)	Area in use during the Quarrying Period (Hect)
1.	Area under quarrying	2.22.62	4.15.38
2.	Infrastructure	Nil	0.01.00
3.	Roads	0.01.00	0.01.00
4.	Green Belt & dump	Nil	0.76.94

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5.	Unutilized area	2.70.70	Nil
	Total	4.94.32	4.94.32

2.3.3 Human Settlement

There are no habitations within the radius of 300 m. The nearby habitations are as follows.

Table 2-5: Habitation

Direction	Village	Distance In Kms	Population
North	Kummepalli	2.4 Kms	270
East	T. Kurubarapalli	3.0 Kms	250
South	Armadpuram	2.5 kms	230
West	Irudhalam	3.0 Kms	200

2.4 LEASEHOLD AREA

The Rough Stone Quarry of 4.94.32 Ha is a Government Land . The lease area falls in S.F No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District. There is no reserve forest or protected forest land within the lease area. There is neither human settlement within 300m radius from the lease area.

2.5 GEOLOGY

The geological formations of the district belong mainly to Archaean age along with rock of Proterozoic age. The former is represented 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 garnet ferrous quartzofeldspathic gneiss and horn blends 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.

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The Charnockite Group occupies a major part of the south-west portion of this district with small bands of garnetiferous quartzo-feldspathicgneiss, Granite gneiss and dolerite dykes. The North-East andNorthernpartof 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-horn blende 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.

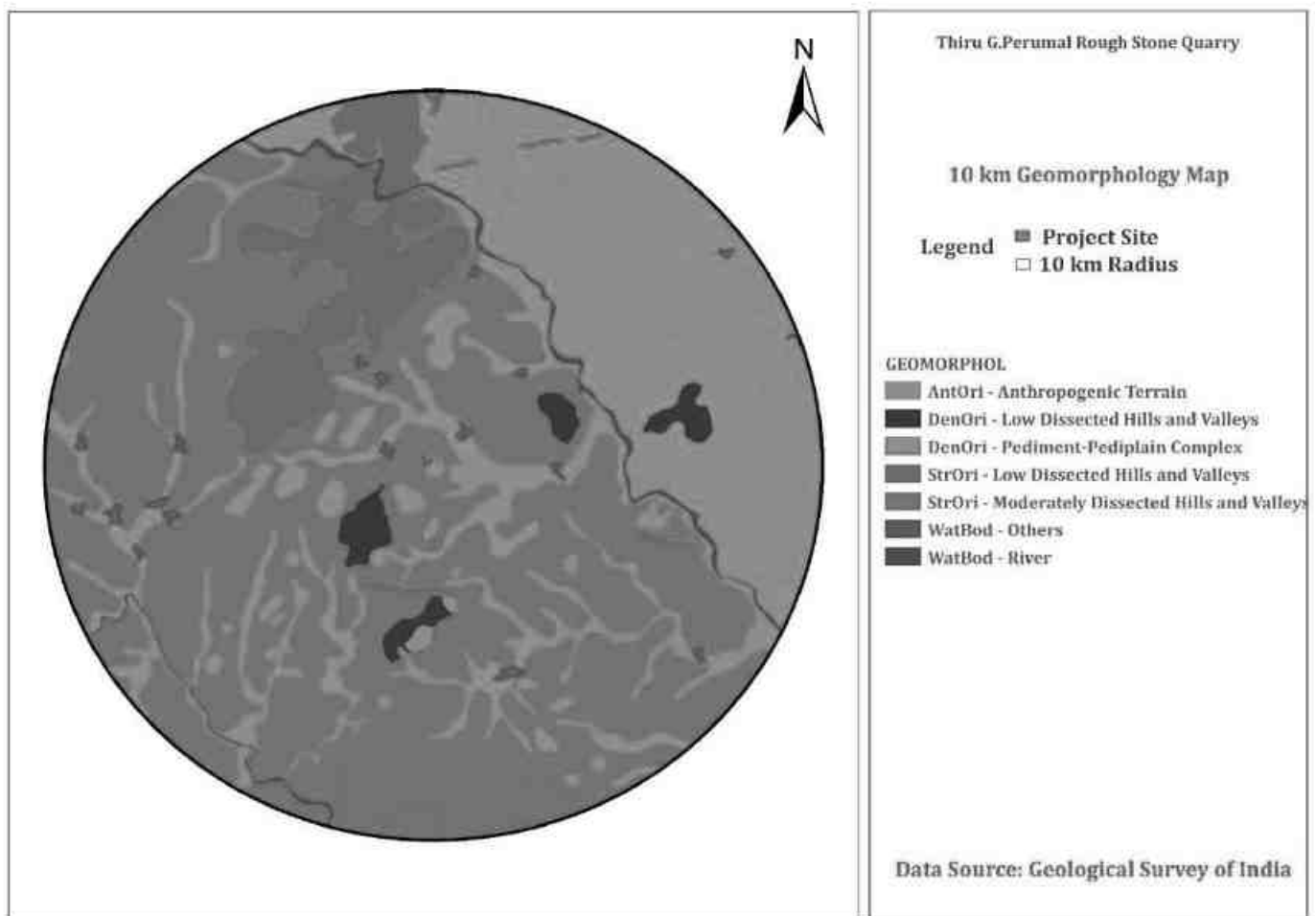


Figure 2.7: Geomorphology Map of 10 km from the Project Site

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Project Location	Thuppuganapalli Village, Shoologiri Taluk, Krishnagiri District	

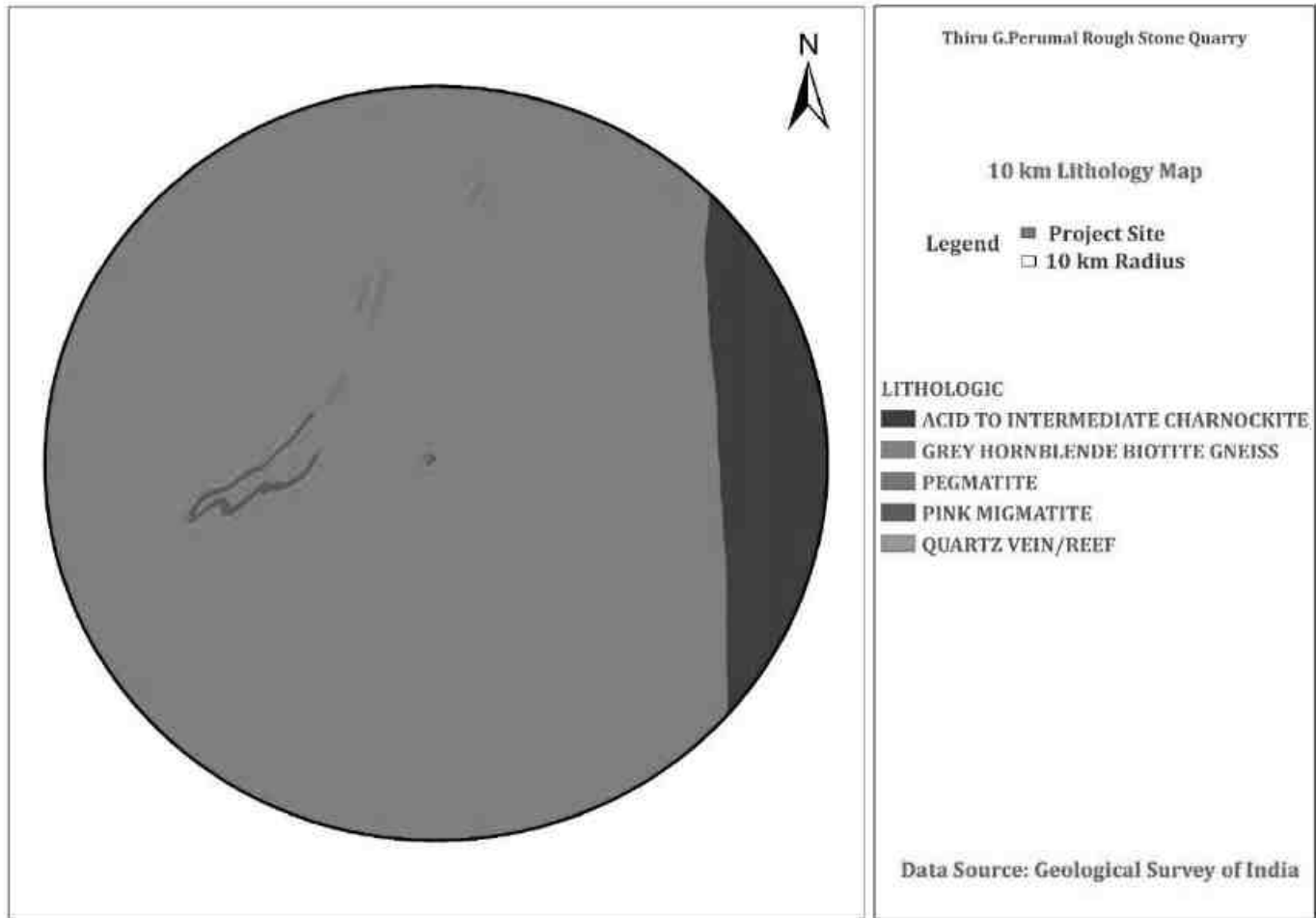


Figure 2.8 Lithology Map of 10 km from the Project Site

2.6 QUALITY OF RESERVES:

The mining lease area is of 4.94.32 Ha, with production capacity of 7,37,960 m³ of Rough Stone. Due to significant role in the domestic as well as infrastructural market, making the mining of Stone and gravel along with associated minor minerals is economically viable.

Table 2-6: Details of Mining

S. No	Particulars	Details
1	Method of Mining	Open cast mechanized
2	Geological Reserves	8,74,879 m ³ of Rough stone
3	Mineable Reserves	7,37,960 m ³ of Rough stone
4	Proposed Production for 5 years	7,37,960 m ³ of Rough stone
5	Elevation Range of the Mine Site	822 m AMSL

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2.6.1 Geological Reserves

Table 2-7: Geological Reserves

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m (100%)	Topsoil in Cu.m.
XY-AB	I	120	77	1			9240
	II	34	35	5	5950	5950	
	III	60	45	5	13500	13500	
	IV	69	50	5	17250	17250	
	V	76	55	5	20900	20900	
	VI	83	59	5	24485	24485	
	VII	239	101	5	120695	120695	
	VIII	273	105	5	143325	143325	
	IX	277	110	5	152350	152350	
	X	277	114	5	157890	157890	
	XI	277	114	3	94734	94734	
Total					751079	751079	9240
X1Y1-AB	I	1	131	1			131
	II	81	17	5	6885	6885	
	III	93	35	5	16275	16275	
	IV	104	52	5	27040	27040	
	V	116	70	5	40600	40600	
	VI	125	88	3	33000	33000	
Total					123800	123800	131
Grand Total					874879	874879	9371

2.6.2 Mineable Reserves

Table 2-8: Mineable Reserves

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m (100%)	Topsoil in Cu.m.
XY-AB	I	100	67	1			6700
	II	34	35	5	5950	5950	
	III	60	45	5	13500	13500	

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	IV	69	50	5	17250	17250	
	V	76	55	5	20900	20900	
	VI	83	59	5	24485	24485	
	VII	239	101	5	120695	120695	
	VIII	250	103	5	128750	128750	
	IX	240	98	5	117600	117600	
	X	230	93	5	106950	106950	
	XI	230	88	3	58080	58080	
Total					614160	751079	6700
X1Y1-AB	I	1	131	1			131
	II	81	17	5	6885	6885	
	III	93	35	5	16275	16275	
	IV	104	52	5	27040	27040	
	V	116	70	5	40600	40600	
	VI	125	88	3	33000	33000	
Total					123800	123800	131
Grand Total					737960	737960	6831

2.6.3 Year wise Production Plan

Table 2-9: Year wise Production Plan

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (Cu.m.)	Recoverable Reserve in Cu.m (100%)	Topsoil in Cu.m.
06.12.2024 - 05.12.2025	XY-AB	I	100	67	1			6700
		II	34	35	5	5950	5950	
		III	60	45	5	13500	13500	
		IV	69	50	5	17250	17250	
		V	76	55	5	20900	20900	
		VI	83	59	5	24485	24485	
Total						82085	82085	6700
06.12.2025 - 05.12.2026	XY-AB	VII	239	101	5	120695	120695	
	X1Y1-AB	I	1	131	1			131
		II	81	14	5	6885	6885	
Total						127580	127580	131

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06.12.2026	XY-AB	VIII	250	103	5	128750	128750	
-								
15.12.2027	X1Y1-AB	III	93	35	5	16275	16275	
Total						145025	145025	
06.12.2027	XY-AB	IX	240	98	5	117600	117600	
-								
05.12.2028	X1Y1-AB	IV	104	52	5	27040	27040	
Total						144640	144640	
06.12.2028	XY-AB	X	230	93	5	106950	106950	
-			XI	220	88	3	58080	58080
05.12.2029	X1Y1-AB	V	116	70	5	40600	40600	
			VI	125	88	3	33000	33000
Total						238630	238630	
Grand Total						737960	737960	6831

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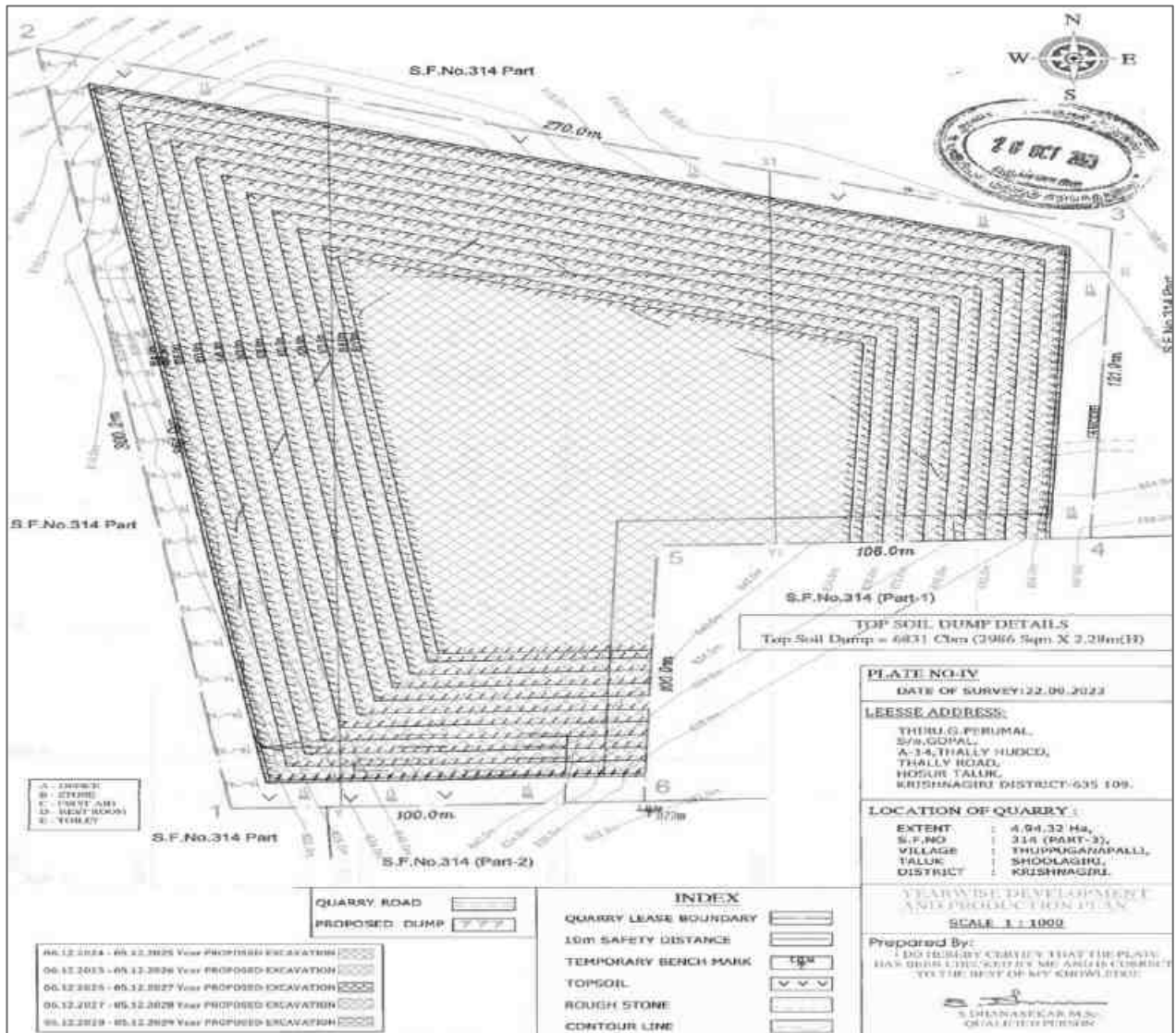


Figure 2.9 Year Wise Production Plan

<i>Project</i>	<i>Rough Stone Quarry- 4.94.32 Ha</i>	<i>Draft EIA Report</i>
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<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

2.7 TYPE OF MINING

The method of mining is proposed to be an open cast semi-mechanized mining with one with 5.0 meter vertical bench with a bench width of 5.0 meter. However, as far as the quarrying of Rough Stone 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:

The Rough stone is proposed to quarry at 5 m bench height & 5m width with conventional Open cast semi-mechanized method. The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

2.7.2 Overburden

The top soil generation from the lease area is estimated to be 6,831 m³ for 5 years. The top soil formation will be removed and dumped in Western Side boundary barrier of the lease area. This will be utilized for road low laying area and plantation purposes.

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

For Mining operation	Excavator of 1.2 Cu.m bucket capacity Jack Hammer (25.5 mm dia) Tractor mounted compressor
Loading Equipment	Excavator of 1.2 Cu.m bucket capacity
Transportation	Tipper 4 No.s of 10 M.T capacity

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Blasting:

2.7.3.1 Blasting Pattern:

The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

2.7.3.2 Drilling & Blasting:

Drilling and Blasting Parameters are as follows

Table 2-11: Drilling and Blasting Parameters

1	Diameter of the hole	32-36 mm
2	Spacing	60 Cms
3	Depth	1 to 1.5 m
4	Charge / Hole	D.Cord with water or 70gms of gun powder or Gelatine.
5	Pattern of hole	Zig Zag
6	Inclination of hole	70° from the horizontal.
7	Quantity of rock broken	0.45 MT x 2.6 = 1.17 MT
8	Control Blasting efficiency @90%	1.17 x 90% = 1.05MT / hole
9	Charge per hole	140 gms of 25mm dia cartridge
10	Quantity of rock broken per day	491.97 m ³

2.7.3.3 Types of Explosives to be used:

Slurry Class 3 explosives, type of nitro compound are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling or primary blasting is proposed. Detonators of Class 3 and Safety fuse of Class 6 are used.

2.7.3.4 Measures to minimize ground vibration due to blasting:

The quarry is situated more than 1 km from the nearby villages. Controlled blasting measures will be adopted for minimizing the ground vibration and fly of rocks. Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly of rock.

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Table 2-12: Blasting Details

1	Diameter of the hole	32-36 mm
2	Spacing	60 Cms
3	Depth	1 to 1.5 m
4	Charge / Hole	D.Cord with water or 70gms of gun powder or Gelatine.
5	Pattern of hole	Zig Zag
6	Inclination of hole	70 ⁰ from the horizontal.
7	Quantity of rock broken	0.45 MT x 2.6 = 1.17 MT
8	Control Blasting efficiency @90%	1.17 x 90% = 1.05MT / hole
9	Charge per hole	140 gms of 25mm dia cartridge

2.7.3.5 Storage & Safety measures taken during blasting:

The project proponent “Thiru. G. Perumal” 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 2-13: Man Power Requirements

1.	Skilled	Foreman/Part time Mining Engineer	1 No.
		HEMM Operator	2 No.s
		Excavator Operator	2 No.s
		Co-Operator	2 No.s
		Jack Hammer Operator	6 No.s
		Blaster/Mate	1 No.
2.	Semi - skilled		3 No.s
		Watchman	1 No.s
3.	Unskilled	Musdoor / Labours	4 No.s
	Total		22 No.s

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

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2.8.1 Water Requirement

Total water requirement for the mining project is 2. KLD. Domestic water will be sourced from nearby Goolisandram village and other water will be source from nearby road tankers supply.

Table 2-14: Water Requirement

Purpose	Quantity	Sources
Domestic & Flushing	1.0 KLD	Water will be supplied through tankers from Thiyanadurgam Village (0.51 km SW of the project site).
Green belt	0.5KLD	Water tanker supply
Dust suppression	0.5 KLD	Water tanker supply
Total	2.0 KLD	

2.9 PROJECT IMPLEMENTATION SCHEDULE

The implementation schedule of the Mine Lease of Thiru. G. Perumal (4.94.32 Ha) is as follows.

Table 2-15: Mining Schedule

MINING SCHEDULE					
Activity	Dec -24	Dec-25	Dec-26	Dec-27	Dec-28
Site Clearance					
Excavation – Rough stone/Overburden					
I Year Production – Cum – 82085 Rough Stone and 6700 Top soil					
II Year Production – Cum – 127580 Rough Stone and 131 Top soil					
III Year Production – Cum – 145025 Rough Stone					
IV Year Production - Cum – 144640 Rough Stone					
V Year Production – Cum – 238630 Rough Stone					

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2.10 SOLID WASTE MANAGEMENT

Table 2-15: Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	4.0 kg/day	Municipal bin including food waste
2	Inorganic	6.0 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 49 m (1 m topsoil and 48 m rough stone) (including the existing depth). The water table is below 90 m 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

This Rough stone quarry project does not require huge water and electricity for the project.

16 Litre diesel per hour for excavator for mining and loading for Rough Stone needed and **10 Litre** diesel per hour for excavation of Top soil needed.

2.13 PROJECT COST

Project Cost

S. No.	Description	Cost (Rs.)
1	Fixed cost	4,67,40,000
2	Operational cost	1,30,00,000
	Total Cost	5,97,40,000

EMP Cost

S.No.	Categories	Capital cost (Rs.)	Recurring cost (Rs.)
1	Air Environment	3,09,432	2,05,796
2	Noise Environment	25,000	37,01,800
3	Water Environment	49,432	5000
4	Waste Management	10,000	4000

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5	Implementation of EC, Mining plan & DGMS Condition	13,65,800	1,21,886
6	Green belt development	6,50,000	75,000
		24,09,664	41,13,482
	Total	65,23,146	

Year 1	Year 2	Year 3	Year 4	Year 5
65,23,146	43,19,157	45,35,114	47,61,870	49,99,964

Total EMP Cost for 5 Years - Rs. 2,51,39,251/-

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 components of Environmental Management plan, which will improve ecology, environment and quality of the surrounding area.
3. Local trees like, Neem, Vilvam Vaagai, Naval etc will be planted along the lease boundary and avenues as well as over non-active dumps at a rate of 2500 trees with interval 5 m.
4. The rate of survival expected to be 80% in this area

Table. 2-17 Plantation/ Afforestation Program

Name of species proposed	Survival	No of species
Neem, Vilvam Vaagai, Eachai, Naval, Mantharai, Magizha Maram, Vila maram, Poo Marudhu, Panai Maram, Marudha Maram, Thandri, Sengondrai, Poovarasu, Therthag kottai , Pungam	80%	2500
Total		2500

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3 DESCRIPTION OF THE ENVIRONMENT

3.1 **GENERAL:**

The method of mining for extracting rough stone quarry and gravel 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 Letter No. SEIAA-TN/F. No. 10312/SEAC/1(a)ToR-1647/2023 Dated: 22.12.2023. The baseline monitoring is carried out in

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November 2023 to January 2024 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 November 2023 to January 2024.

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	7 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	7 locations	24 hourly Once in 7 locations
Water (Ground water)	7 locations	Once in 7 locations

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pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium, Potassium, 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)	7 locations	Once in 7 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

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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. 314 (Part III)- 4.94.32 Ha, Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu State	Field Study
2.	Latitude & Longitude	Latitude : 12° 36' 53.0353"N to 12° 36' 45.6499"N Longitude : 77° 55' 25.4549"E to 77° 55' 18.3602"E	Topo Sheet
3.	Topo Sheet No.	57-H/14	Survey of India Toposheet
4.	Mine Lease Area	4.94.32 Ha	--
Demography in the study area (as per Census 2011)			
5.	Total Population	2873	Census Survey of India
6.	Total Number of Households	650	
7.	Maximum Temperature (°C)	36	IMD
8.	Minimum Temperature (°C)	21	

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9.	Ecological Sensitive Areas - Wetlands, watercourses or other waterbodies, coastal zone, biospheres, mountains, forests	<ul style="list-style-type: none"> ❖ Ponnaiyar River – 4.39 km N ❖ Govidhan Lake – 5.42 km NW ❖ Nanjappan Kodigai Lake – 6.86 km SW ❖ Kamandoddi Old Lake – 7.13 km NE ❖ Kamandoddi Lake-7.76 km NE ❖ Kamandoddi New Lake – 8.18 km NE ❖ Konerapalli Lake – 8.37 km NE ❖ Chinnar River – 8.39 km SW ❖ Chappadi Lake – 8.42 km N ❖ Chikke Goundan Lake – 9.80 km SE ❖ Bharadhangi Lake – 10.17 km SE ❖ Tippalam Lake – 11.33 km NW ❖ Kumudapalli Lake – 11.63 km NW ❖ Bukkasagaram Lake – 11.96 km NE ❖ Pachapalli Reservoir – 12.43 km S ❖ Shoolagiri/Chinnar Reservoir – 13.51 km NE 	Google Earth/Field Study																		
10.	Densely Populated area	Shoolagiri - 10.94 km NE																			
11.	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">S. No.</th> <th style="width: 60%;">Places</th> <th style="width: 35%;">Dist. From Project Site</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="text-align: center;">Schools & Colleges</td> </tr> <tr> <td>1</td> <td>Government Higher Secondary School, Uddanapalli</td> <td>0.58 km E</td> </tr> <tr> <td>2</td> <td>Sri Saraswathi Vidyalaya Matriculation School, Uddanapalli</td> <td>1.24 km SW</td> </tr> <tr> <td>3</td> <td>Primary Middle School, Agaram</td> <td>2.13 km NW</td> </tr> <tr> <td colspan="3" style="text-align: center;">Hospitals</td> </tr> </tbody> </table>	S. No.	Places	Dist. From Project Site	Schools & Colleges			1	Government Higher Secondary School, Uddanapalli	0.58 km E	2	Sri Saraswathi Vidyalaya Matriculation School, Uddanapalli	1.24 km SW	3	Primary Middle School, Agaram	2.13 km NW	Hospitals			Google Earth/Field Study
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			1	Govt. Primary Health Center, Uddanapalli	1.90 km SE		
			2	Rural Health care center, Anusonai	5.26 km SW		

3.1.7 Site Connectivity:

The site is connected to SH 17 (Shoolagiri – Denkanikottai Road) – 0.66 km, E



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

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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 project area and the procedure adopted is as below.

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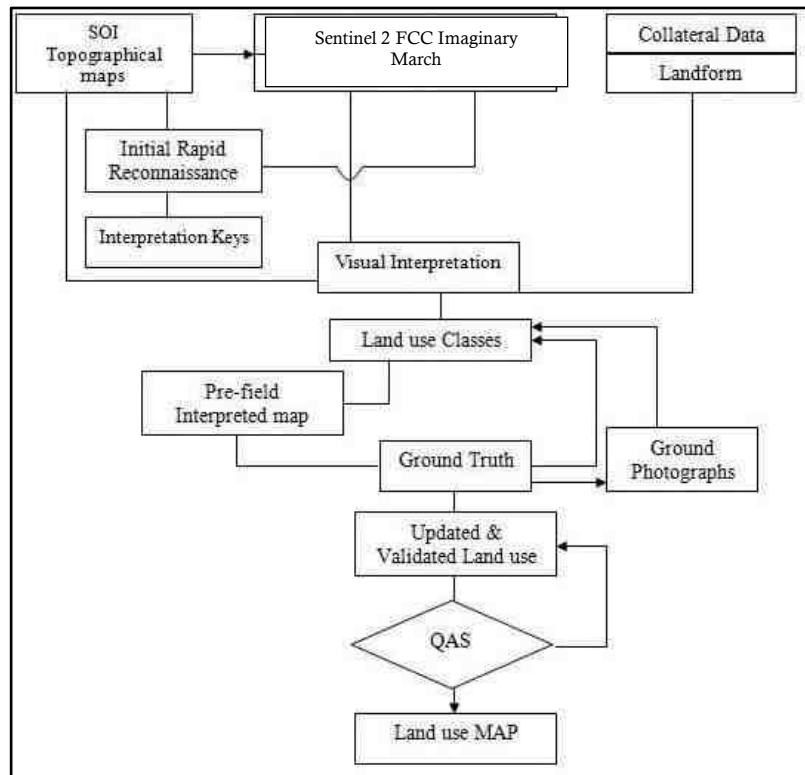


Figure 3.2 Flow Chart showing Methodology of Land use Mapping

3.2.3 Satellite Data

Sentinal 2 multispectral satellite data of 2020 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 Sentinal 2 data was used for Land use / Land cover mapping of 10 km radius for the 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,

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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.

June 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 site) from the topo maps
2. In the present study the sentinel satellite image and SOI topo sheets of 58J/10, 58J/11, 58J/14, 58J/15 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

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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 Water

Areas where water was predominantly present throughout the year; may not cover areas with sporadic or ephemeral water; contains little to no sparse vegetation, no rock outcrop nor built up features like docks; examples: rivers, ponds, lakes, oceans, flooded salt plains.

3.2.7.2 Trees

Any significant clustering of tall (~15-m or higher) dense vegetation, typically with a closed or dense canopy; examples: wooded vegetation, clusters of dense tall vegetation within savannas, plantations, swamp or mangroves (dense/tall vegetation with ephemeral water or canopy too thick to detect water underneath).

3.2.7.3 Grass

Open areas covered in homogenous grasses with little to no taller vegetation; wild cereals and grasses with no obvious human plotting (i.e., not a plotted field); examples: natural meadows and fields with sparse to no tree cover, open savanna with few to no trees, parks/golf courses/lawns, pastures.

3.2.7.4 Flooded vegetation

Mix of small clusters of plants or single plants dispersed on a landscape that shows exposed soil or rock; scrub-filled clearings within dense forests that are clearly not taller than trees; examples: moderate to sparse cover of bushes, shrubs and tufts of grass, savannas with very sparse grasses, trees or other plants.

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3.2.7.5 Crops

Human planted/plotted cereals, grasses, and crops not at tree height; examples: corn, wheat, soy, fallow plots of structured land.

3.2.7.6 Scrub/Shrub

Mix of small clusters of plants or single plants dispersed on a landscape that shows exposed soil or rock; scrub-filled clearings within dense forests that are clearly not taller than trees; examples: moderate to sparse cover of bushes, shrubs and tufts of grass, savannas with very sparse grasses, trees or other plants

3.2.7.7 Built Area

Human made structures; major road and rail networks; large homogenous impervious surfaces including parking structures, office buildings and residential housing; examples: houses, dense villages / towns / cities, paved roads, asphalt.

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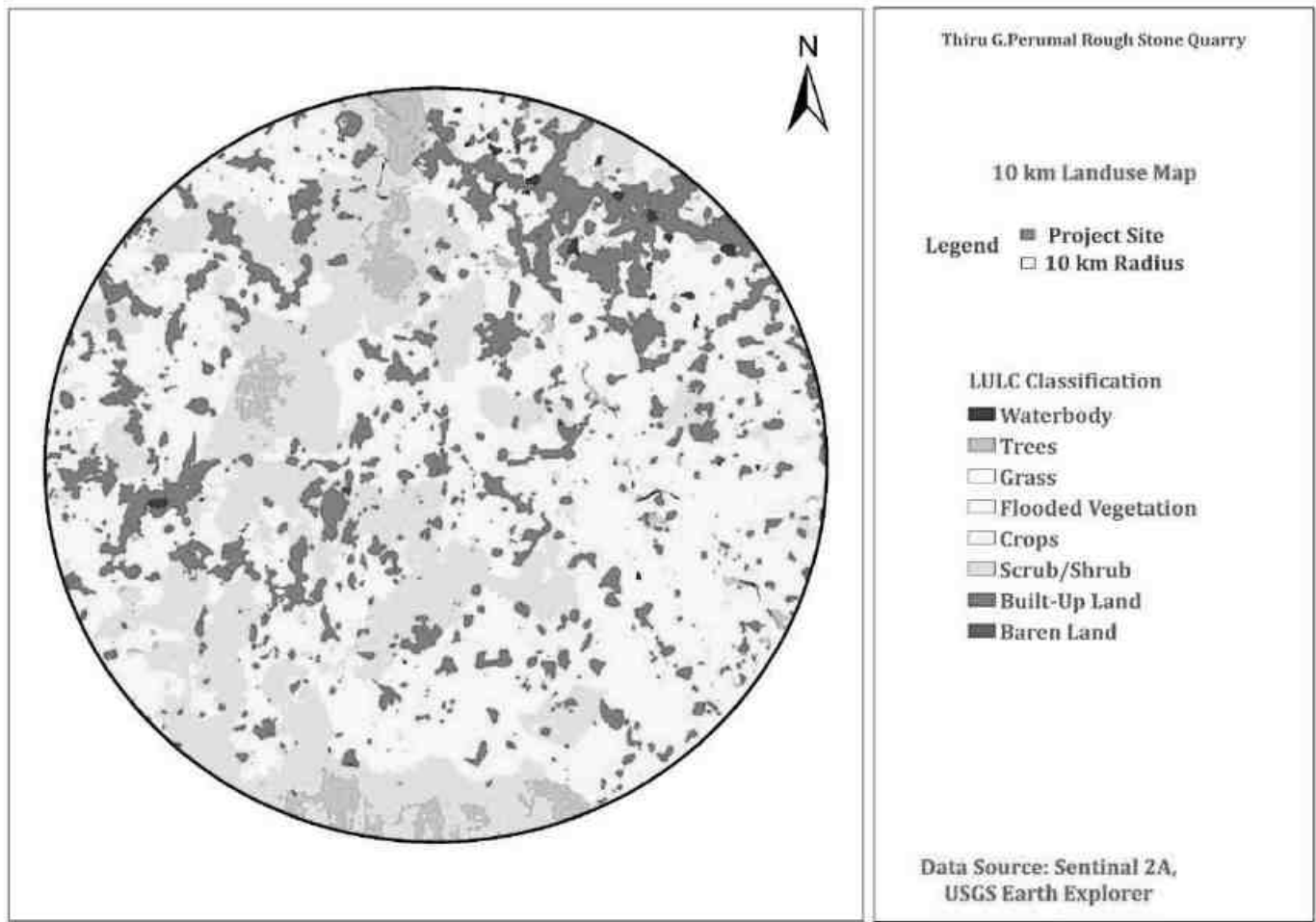


Figure 3.3 Land use classes around 10 km radius from the project site

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

Table 3-3 Land use pattern

Sl.No	Categories	Area in Sq.m
1.	Water Body	1.32
2.	Trees	12.42
3.	Grass	0.04
4.	Flooded Vegetation	0.01
5.	Crops	168.77
6.	Scrub/Shrub	81.92
7.	Built-up Area	51.06
8.	Barren Land	0.17

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3.3 WATER ENVIRONMENT

3.3.1 Contour & Drainage

The project site is 822 m AMSL.

3.3.2 Geomorphology

The prominent geomorphic units identified in the district through interpretation of satellite imagery are structural hills in the southwestern part of the district, denudational land forms like buried pediments in the plains and inselbergs and plateaus represented by conical hills aligned with major lineaments. Krishnagiri district forms part of the upland plateau region with many hill ranges and undulating plains. The western part of the district has hill ranges of Mysore plateau with a chain of undulating hills and deep valleys extending in NNE-SSW direction. The plains of the district have an average elevation of 488 m amsl. The plateau region along the western boundary and the northwestern part of the district has an average elevation of 914 m amsl. The Guthrayan Durg with an elevation of 1395 m amsl is the highest peak in the district.

Soils

Soils have been classified into Black soil, mixed soil, red loamy soil, gravelly and sandy soils. Red loamy and sandy soils are predominant in Hosur taluk. Vast stretches of loam soils and black soils occur in Krishnagiri district.

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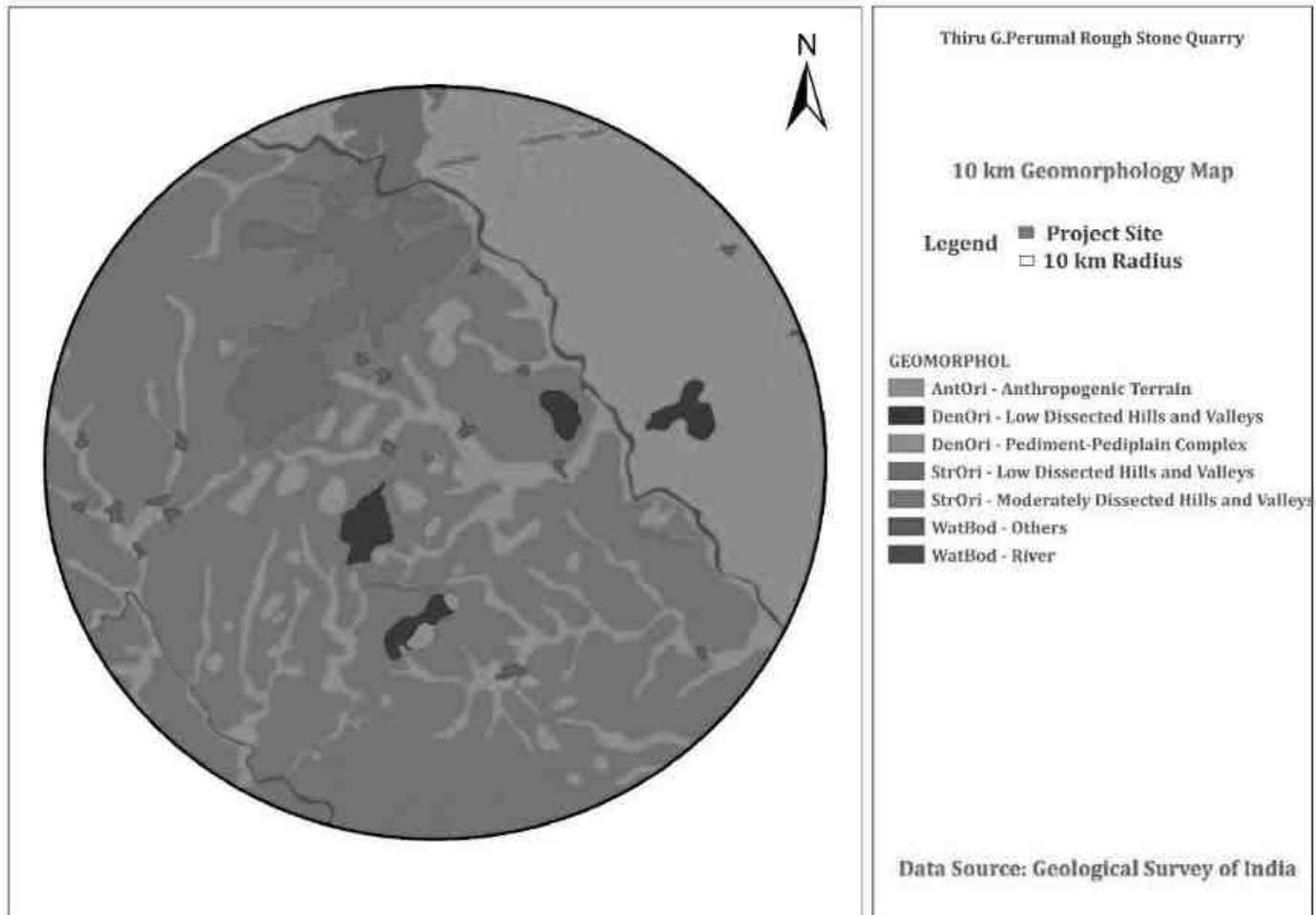


Figure 3.4 Geomorphology Map of 10km from the project site

3.3.3 Geology:

The geological formations of the district belong mainly to Archaean age along with rock of Proterozoic age. The former is represented 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 garnet ferrous quartzofeldspathic gneiss and horn blends 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

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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-west portion 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-horn blende 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.

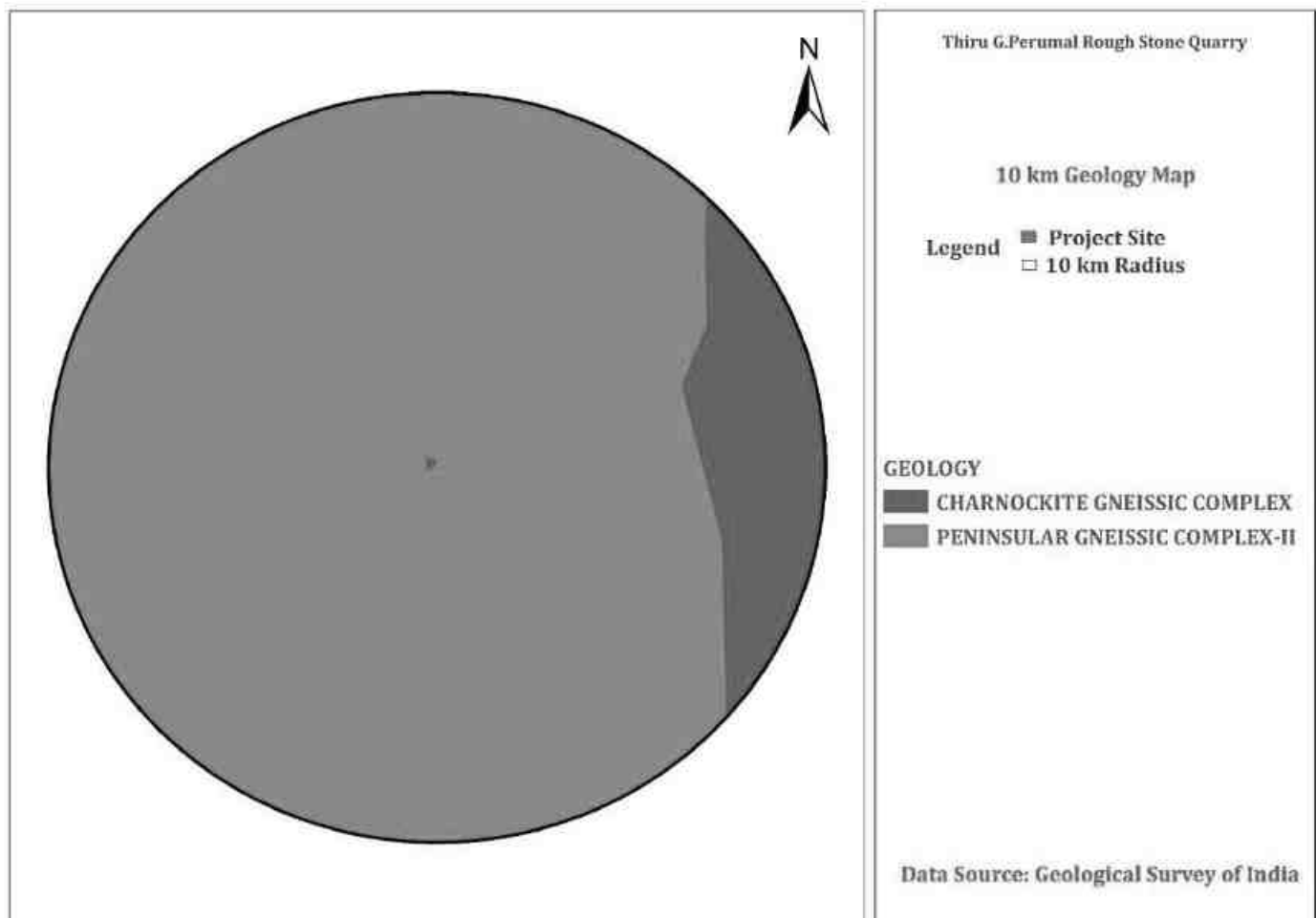


Figure 3.5 Geology Map of 10km from the project site

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3.3.4 Hydrogeology

Krishnagiri district is underlain by Archaean crystalline formations with Recent alluvial deposits of limited areal extent and thickness along the courses of major rivers (Plate-II). The occurrence and movement of ground water are controlled by various factors such as physiography, climate, geology and structural features. Weathered, and fractured crystalline rocks constitute the important aquifer systems in the district.

Ground water generally occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fractured zones at deeper levels. The thickness of weathered zones in the district ranges from less than a meter to more than 15 m. 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 in 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 (Plate-III) in the district. In major part of the district the DTW is more than 5mbgl. Whereas it ranged between 2 and 9.9 m bgl (Plate-IV) 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.

Aquifer Parameters:

The transmissivity values of fracture zones ranged from 1 to 188 m² /day with low to very low permeability values.

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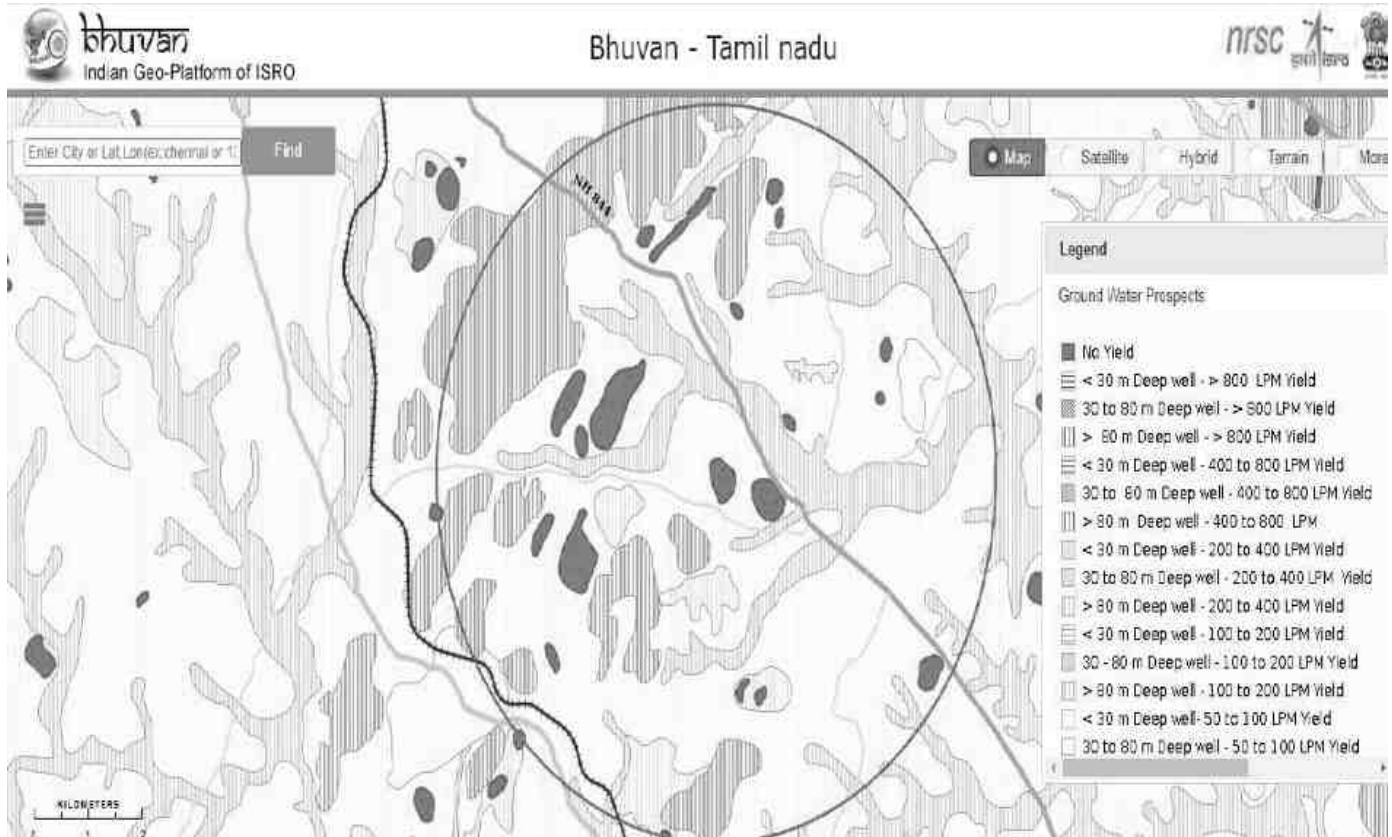


Figure 3.6 Ground water prospects within 5 km radius of the project site

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	November 2023 to January 2024		
Design Criteria	Based on the Environmental settings in the study area		
Monitoring Locations	Project site - GW1	---	
	Government High School, Devasanapalli - GW2	3.11 km, E	
	Government Polytechnic College, Kelamangalam - GW3	4.56 km, W	

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	St. Anthony's Church Nagamangalam, Ayaranapalli - GW4	4.63 km, SE
	Jama Masjid, Mosque, Thirumalaigowni kotta - GW5	5.40 km, NE
	Sri Nagamuneswara Temple, Onnagurukki - GW6	7.44 km SW
	Thimmarayaswamy Temple, Gudisaganapalli - GW7	7.84 km NW
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 seven 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 22 nd Edn.2012-2540-C
6	Total Suspended Solids	IS:3025(P-17)-1984 RA:2012
7	Total Hardness as CaCO ₃	APHA 22 nd Edn.2012-2340-C
8	Calcium as Ca	APHA 22 nd Edn2012.3500 Ca-B
9	Magnesium as Mg	APHA 22 nd Edn.2012-3500 Mg-B
10	Chloride as Cl	IS:3025(P -32)-1988 RA: 2014

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11	Sulphate as SO ₄	APHA 22 nd Edn.2012-4500 SO ₄ -E
12	Total Alkalinity as CaCO ₃	APHA 22 nd 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 22 nd 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

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Table 3-6 Ground water sampling results

S. no	Parameters	Test Method	Units	GW 1	GW 2	GW 3	GW 4	GW5	GW6	GW 7
1	pH (at 25°C)	IS:3025(P -11)1983 RA: 2012	-	7.81	7.83	7.56	7.55	7.93	7.38	7.54
2	Electrical Conductivity	IS:3025(P -14) 2013	µS/cm	740	1306	690	1310	1520	660	830
3	Colour	IS:3025 (P -4)1983 RA: 2012	Hazen Unit	4	4	4	3	4	3	3
4	Turbidity	IS:3025(P -10)1984 RA: 2012	NTU	BQL(LO Q:1)	BQL(LO Q:1)	BQL(LO Q:1)	BQL(LO Q:1)	BQL(LO Q:1)	BQL(LO Q:1)	BQL(LO Q:1)
5	Total Dissolved Solids	APHA 23 rd Edn.2017-2540-C	mg/L	472	755	436	735	975	392	456
6	Total Suspended Solids	IS:3025(P-17)-1984 RA:2012	mg/L	BQL(LO Q:2)	BQL(LO Q:2)	BQL(LO Q:2)	BQL(LO Q:2)	BQL(LO Q:2)	BQL(LO Q:2)	BQL(LO Q:2)
7	Total Hardness as CaCO ₃	APHA 23 rd Edn.2017-2340-C	mg/L	238	368	274	400	529	283	202
8	Calcium Hardness as CaCO ₃	APHA 23 rd Edn2017.3500 Ca-B	mg/L	174	210	238	255	408	174	133
9	Magnesium Hardness as CaCO ₃	APHA 23 rd Edn.2017-3500 Mg-B	mg/L	64.5	158	36.4	145	121	109	68.6
10	Calcium as Ca	APHA 23 rd Edn2017.3500 Ca-B	mg/L	69.6	84.2	95.5	102	164	69.6	53.4
11	Magnesium as Mg	APHA 23 rd Edn.2017-3500 Mg-B	mg/L	15.7	38.3	8.84	35.3	29.4	26.5	16.7
12	Chloride as Cl	IS:3025(P -32)-1988 RA: 2014	mg/L	93.1	177	48.2	125	208	50.1	38.5
13	Sulphate as SO ₄	APHA 23 rd Edn.2017-4500 SO ₄ -E	mg/L	45.2	85.3	15.6	137	148	16.4	38.4
14	Total Alkalinity as CaCO ₃	APHA 23 nd Edn.2017-2320-B	mg/L	204	283	317	279	290	248	386

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15	Iron as Fe	IS:3025(P - 53):2003 RA: 2014	mg/L	BQL(LO Q:0.1)	BQL(LO Q:0.1)	BQL(LO Q:0.1)	BQL(LO Q:0.1)	BQL(LO Q:0.1)	BQL(LO Q:0.1)	BQL(LO Q:0.1)
16	Silica as SiO ₂	IS:3025(P -35)1988 RA: 2014	mg/L	16.4	21.7	15.9	25.7	29.4	13.7	15.2
17	Fluoride as F	APHA 23 rd Edn.2012-4500-F-D	mg/L	0.394	0.65	0.314	0.366	0.42	0.502	0.31
18	Nitrate as NO ₃	IS:3025(P - 34):1988 RA: 2014	mg/L	17.3	9.33	15.4	20.3	15.5	14.6	10.3
19	Sodium as Na	IS:3025(P - 45):1993 RA: 2014	mg/L	75.8	148	45.1	105	195	47.8	37.5
20	Potassium	IS:3025(P - 45):1993 RA: 2014	mg/L	19.1	22.5	1.8	15.5	10	2.5	1.1

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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): 4 Hazen unit.

Acceptable and permissible limits: 5 Hazen units and 15 Hazen 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).

pH:

Value observed in the Project Site: 7.81

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 neutral in nature.

Turbidity:

Value observed in the Project Site: <1

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 slightly turbid.

Total Dissolved Solids:

Value observed in the Project Site: 472 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.

Chemical parameters of water:

The chemical parameters of the drinking water include,

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Calcium:

Value observed in the Project Site: 174 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: 64.5 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 less than the permissible limit. The increase in the level of magnesium will cause diarrhea and vomiting in children.

Chloride

Value observed in the project site: 93.1 mg/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 CaCO₃:

Value observed in the project site: 238 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.

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Hardness:

Value observed in the Project Site: 64.5 mg/L.

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

The value of Hardness in the project site is higher than acceptable limit but within the 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 Obeapalayam Lake and Ponnaiyar River. The results are summarized below.

Table 3-7 Surface Water Sample Results

S.no	Parameters	Test Method	Units	Obeapalayam Lake	Ponnaiyar River
1	pH (at 25°C)	IS:3025(P -11)1983 RA: 2012	-	6.47	7.59
2	Electrical Conductivity	IS:3025(P -14) 2013	µS/cm	250	1180
3	Colour	IS:3025 (P -4)1983 RA: 2012	Hazen Unit	40	20
4	Turbidity	IS:3025(P -10)1984 RA: 2012	NTU	12.5	5.9
5	Total Dissolved Solids	APHA 23 rd Edn.2017-2540-C	mg/L	145	699
6	Total Suspended Solids	IS:3025(P-17)-1984 RA:2012	mg/L	24.4	12.5
7	Total Hardness as CaCO ₃	APHA 23 rd Edn.2017-2340-C	mg/L	72.7	335
8	Calcium Hardness as CaCO ₃	APHA 23 rd Edn2017.3500 Ca-B	mg/L	50.5	222
9	Magnesium Hardness as CaCO ₃	APHA 23 rd Edn.2017-3500 Mg-B	mg/L	22.2	113
10	Calcium as Ca	APHA 23 rd Edn2017.3500 Ca-B	mg/L	20.2	89.1
11	Magnesium as Mg	APHA 23 rd Edn.2017-3500 Mg-B	mg/L	5.4	27.5
12	Chloride as Cl	IS:3025(P -32)-1988 RA: 2014	mg/L	27.1	196
13	Sulphate as SO ₄	APHA 23 rd Edn.2017-4500 SO ₄ -E	mg/L	12.5	67.5
14	Total Alkalinity as CaCO ₃	APHA 23 rd Edn.2017-2320-B	mg/L	72.7	157

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15	Iron as Fe	IS:3025(P -53):2003 RA: 2014	mg/L	1.03	0.43
16	Silica as SiO ₂	IS:3025(P -35)1988 RA: 2014	mg/L	9.52	21.3
17	Fluoride as F	APHA 23 rd Edn.2012-4500-F-D	mg/L	0.32	0.64
18	Nitrate as NO ₃	IS:3025(P -34):1988 RA: 2014	mg/L	5.21	25.4
19	Sodium as Na	IS:3025(P -45):1993 RA: 2014	mg/L	5.5	15.2
20	Potassium	IS:3025(P -45):1993 RA: 2014	mg/L	17.5	173
21	Total Kjeldahl Nitrogen as N	APHA 23 rd Edn.2012-4500	mg/L	12.8	37.8
22	Biochemical oxygen Demand @ 27c	IS:3025(P -45):1993 RA: 2014	mg/L	11.2	12.2
23	Chemical Oxygen Demand	IS:3025(P -45):1993 RA: 2014	mg/L	39.0	42.9
24	Dissolved Oxygen	IS:3025(P -45):1993 RA: 2014	mg/L	4.80	3.52

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 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.

3.3.7.1 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

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Eastern part of the district experiences hot climate and Western part has a contrasting pleasant cold climate. The district is hot and dry in summer i.e., from March to June. From July to November is rainy season and between December to February winter prevails with very cold and misty.

ii) Temperature

The maximum temperature is around 36°C and minimum temperature is 28°C.

iii) Rainfall

Krishnagiri receives rainfall from both the northeast and the southwest monsoons. Monsoon season is from the months of July to November. During this time, temperature is mild and pleasant. Heavy rainfall is expected in short intervals during this period. December to February are winter months.

This district gets maximum rainfall in November (274.7mm).

KRISHNAGIRI DISTRICT -NORMAL AND ACTUAL RAINFALL

Unit in mm.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	R/F	R/F	R/F	R/F	R/F	R/F	R/F	R/F	R/F	R/F	R/F	R/F
2017	5.7	0	48.7	37.9	198.6	19.1	24.6	189.7	291.7	219	54.5	56.2
2018	0	1.3	34.9	14.4	114.5	41.1	10.5	18.5	152.1	85.2	33.2	4.8
2019	13.2	1.2	4.5	47.2	96.5	33.6	34.6	94.7	138.6	177.7	48.7	39.5
2020	0.3	0	6.9	61.7	57.9	59	147.2	66.8	142.1	142	77	42.6
2021	40.1	5.8	0	46.6	75.7	32.4	137.7	70.2	134.9	140.4	282.6	19.1

Source: District survey report

Meteorological 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.

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The wind speed & wind direction data are taken, and wind rose is plotted for November 2023 to January 2024.

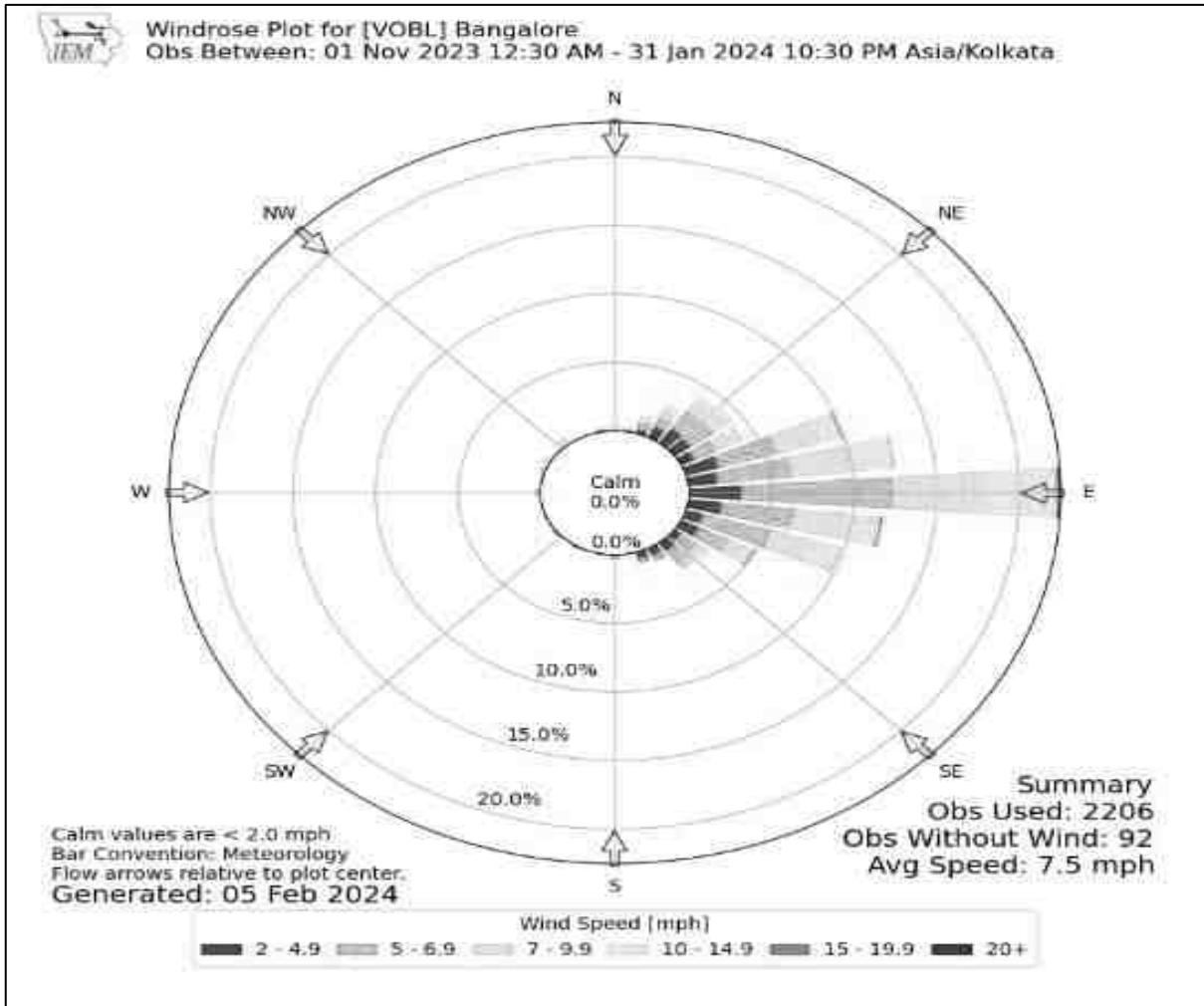


Figure 3.7 Wind Rose Diagram

3.3.8 Selection of Sampling Locations:

Six 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: <i>Ambient Air</i>	
Monitoring Period	November 2023 to January 2024

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Design Criteria	The monitoring stations are selected based on factors like topography/terrain, prevailing meteorological conditions like predominant wind direction (November 2023 to January 2024), 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	Location & Code	Distance (km)	Direction
	Project site	-	-
	Government High School, Devasanapalli	3.11 km, E	Upwind
	Government Polytechnic College, Kelamangalam	4.56 km, W	Downwind
	St. Anthony's Church Nagamangalam, Ayaranapalli	4.63 km, SE	Crosswind
	Jama Masjid, Mosque, Thirumalaigowni kotta	5.40 km, NE	Crosswind
	Sri Nagamuneswara Temple, Onnagurukki	7.44 km SW	Crosswind
	Thimmarayaswamy Temple, Gudisaganapalli	7.84 km NW	Crosswind
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 Monitoring	2 days in a week, 4 weeks in a month for 3 months in a season.		

3.4.1 Ambient Air Quality: Results & Discussion

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

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<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

Table 3-9 Ambient Air Quality

Code	Location	PM 10 ($\mu\text{g}/\text{m}^3$)			PM 2.5 ($\mu\text{g}/\text{m}^3$)			SO ₂ ($\mu\text{g}/\text{m}^3$)			NO _x ($\mu\text{g}/\text{m}^3$)		
		Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg
AAQ 1	Project site	39	53	45.1	15	22	18.8	6	10	8.2	12	21	16.4
AAQ 2	Government High School, Devasanapalli	54	64	58.5	21	32	26	8	17	11.7	14	29	20.6
AAQ 3	Government Polytechnic College, Kelamangalam	57	65	61.7	25	31	27.7	12	20	17.5	25	38	31
AAQ 4	St Anthony's Church Nagamangalam, Ayaranapalli	48	59	54.5	21	28	24.6	7	13	9.9	19	23	17.5
AAQ 5	Jama Masjid, Mosque, Thirumalaigowni kotta	44	56	50.5	18	26	23.3	7	13	9	13	25	17.8
AAQ 6	Sri Nagamuneswara Temple, Onnagurukki	54	66	59.8	24	34	28.6	10	17	12.8	19	33	24.2
AAQ 7	Thimmarayaswamy Temple, Gudisaganapalli	59	69	63.4	26	34	28.7	15	23	19.5	29	42	35.3
NAAQ Standards - Residential Area		100 ($\mu\text{g}/\text{m}^3$)			60($\mu\text{g}/\text{m}^3$)			80 ($\mu\text{g}/\text{m}^3$)			80 ($\mu\text{g}/\text{m}^3$)		

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3.4.2 Interpretation of ambient air quality:

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

Observation:

The Maximum value of PM10 (69($\mu\text{g}/\text{m}^3$), PM 2.5 (34 ($\mu\text{g}/\text{m}^3$), SO₂ (23($\mu\text{g}/\text{m}^3$), NO_x (42($\mu\text{g}/\text{m}^3$) is observed in different places.

Inference:

The monitoring results for PM10, PM2.5, SO₂, NO_x was found to be high in Thimmarayaswamy Temple, Gudisaganapalli which is due to the movement of vehicles.

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

3.5 NOISE ENVIRONMENT:

Table 3-10 Noise Analysis

Environmental Parameters: <i>Noise Analysis</i>								
Monitoring Period	November 2023 to January 2024							
Design Criteria	Based on the Sensitivity of the area							
Monitoring Locations	<table border="1"> <tr> <td>Project site- N1</td> </tr> <tr> <td>Government High School, Devasanapalli - N2</td> </tr> <tr> <td>Government Polytechnic College, Kelamangalam - N3</td> </tr> <tr> <td>St. Anthony's Church Nagamangalam, Ayaranapalli - N4</td> </tr> <tr> <td>Jama Masjid, Mosque, Thirumalaigowni kotta - N5</td> </tr> <tr> <td>Sri Nagamuneswara Temple, Onnagurukki -N6</td> </tr> <tr> <td>Thimmarayaswamy Temple, Gudisaganapalli -N7</td> </tr> </table>	Project site- N1	Government High School, Devasanapalli - N2	Government Polytechnic College, Kelamangalam - N3	St. Anthony's Church Nagamangalam, Ayaranapalli - N4	Jama Masjid, Mosque, Thirumalaigowni kotta - N5	Sri Nagamuneswara Temple, Onnagurukki -N6	Thimmarayaswamy Temple, Gudisaganapalli -N7
Project site- N1								
Government High School, Devasanapalli - N2								
Government Polytechnic College, Kelamangalam - N3								
St. Anthony's Church Nagamangalam, Ayaranapalli - N4								
Jama Masjid, Mosque, Thirumalaigowni kotta - N5								
Sri Nagamuneswara Temple, Onnagurukki -N6								
Thimmarayaswamy Temple, Gudisaganapalli -N7								
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 7 locations - Once in a season							

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Ambient Noise Levels are monitored in the chosen 7 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- N1	46	36	43
Government High School, Devasanapalli - N2	54	45	51
Government Polytechnic College, Kelamangalam - N3	59	50	55
St. Anthony's Church Nagamangalam, Ayaranapalli - N4	48	38	45
Jama Masjid, Mosque, Thirumalaigowni kotta - N5	51	41	47
Sri Nagamuneswara Temple, Onnagurukki -N6	58	49	53
Thimmarayaswamy Temple, Gudisaganapalli -N7	52	44	49

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- N1	35	30	32
Government High School, Devasanapalli - N2	43	36	39
Government Polytechnic College, Kelamangalam - N3	48	39	44
St. Anthony's Church Nagamangalam, Ayaranapalli - N4	38	30	34
Jama Masjid, Mosque, Thirumalaigowni kotta - N5	39	31	35
Sri Nagamuneswara Temple, Onnagurukki -N6	49	41	45
Thimmarayaswamy Temple, Gudisaganapalli -N7	43	35	39

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Observation:

The maximum Day noise and Night noise were found to be 59 dB(A) and 49 dB(A) in Government Polytechnic College, Kelamangalam and Sri Nagamuneswara Temple, Onnagurukki respectively. The minimum Day Noise and Night noise were 36 dB (A) and 30 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 5 km radius image shows that the soil is not affected by any kind of erosion.

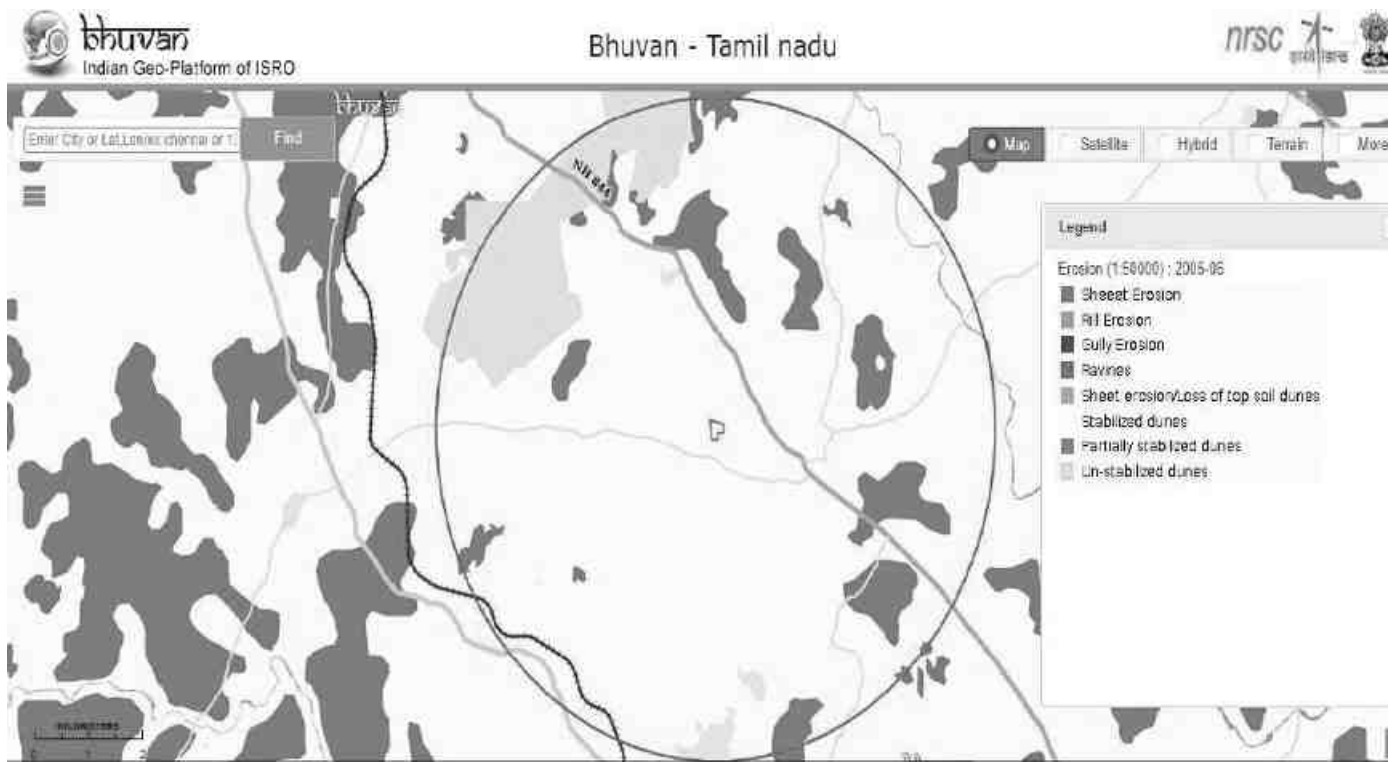


Figure 3.8 Soil Erosion pattern within 5 km radius of the project site

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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 project. The sampling locations have been identified with the following objectives:

- To determine the impact of 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: <i>Soil Quality Analysis</i>	
Monitoring Period	November 2023 to January 2024
Design Criteria	Based on the environmental settings of the study area
Monitoring Locations	Project site- SQ1
	Government High School, Devasanapalli - SQ2
	Government Polytechnic College, Kelamangalam - SQ3
	St Anthony's Church Nagamangalam, Ayaranapalli - SQ4
	Jama Masjid, Mosque, Thirumalaigowni kotta - SQ5
	Sri Nagamuneswara Temple, Onnagurukki -SQ6
	Thimmarayaswamy Temple, Gudisaganapalli -SQ7
Methodology	Composite soil samples using sampling augers and field capacity apparatus
Frequency of Monitoring	Soil samples were collected from 7 locations Once in a season

To assess the soil quality of the study area, 7 monitoring stations were selected and the results are summarized below.

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Table 3-14 Soil Quality Analysis

S.No	Parameters	Test Method	Units	SQ 1	SQ 2	SQ 3	SQ 4	SQ5	SQ6	SQ7
1	pH	IS:2720(P -26)1987	-	7.39	7.43	6.98	7.14	8.29	8.42	7.82
2	Electrical Conductivity	IS:14767: 2016	ms/cm	0.08	0.25	0.41	0.19	0.17	0.24	0.31
3	Water holding Capacity	ICARDA Page No:28	ml/L	3.11	4.8	5.0	4.57	4.94	4.4	4.74
4	Chloride	FAO 2007 Page No:48	mg/Kg	73.7	148	148	118	158	56.4	31.1
5	Calcium	FAO 2007 Page No:44	mg/Kg	51.2	116	74.6	85.9	95.4	71.5	53.2
6	Sodium	FAO 2007 Page No:44	mg/Kg	671	692	634	706	648	749	635
7	Potassium	FAO 2007 Page No:44	mg/Kg	603	609	636	614	696	627	558
8	Organic matter	IS:2720 (P-22) 1972, RA:2010	%	0.24	0.15	0.33	0.26	0.13	0.19	0.46
9	Magnesium	FAO 2007 - 44	mg/Kg	51.8	46.2	26.4	56.7	19.7	35.4	23.6
10	Sulphate	IS 2720 (part 27): 1977	mg/Kg	37.6	53.5	162	39.5	46.9	40.1	41.5
11	Cation Exchange Capacity	IS:2720(P -24):1976 RA: 2010	meq/100g	11.1	9.8	10.8	10.3	10.5	9.5	9.5
12	Carbonate	FAO 2007 - 46	mg/Kg	Nil	Nil	Nil	Nil	Nil	16.4	Nil
13	Bicarbonate	FAO 2007 - 46	mg/Kg	36.9	75.3	58.5	63.9	52.4	146	71.4
14	TKN	IS : 14684 -1999	%	0.06	0.18	0.19	0.22	0.23	0.1	0.21
15	Bulk density	FAO 2007 Page No:35	g/cm3	1.58	1.47	1.18	1.28	1.21	1.25	1.27
16	Phosphorous	FAO 2007 Page No:73	mg/Kg	39.6	31.5	8.44	45.1	53.1	18.6	15.7
17	Sand	FAO 2007 Page No:25	%	75.0	64.3	66.6	57.2	68.0	80.1	61.1
18	Clay	FAO 2007 Page No:25	%	12.0	21.4	6.22	21.4	6.0	13.3	5.6
19	Silt	FAO 2007 Page No:25	%	13.0	14.3	27.18	21.4	26.0	6.6	33.3
20	SAR	ETL/CHL/SOP/004	meq/Kg	15.8	13.8	16.1	14.5	15.8	18.1	18.2
21	Silicon	ICARDA Page No:160	%	0.098	0.099	0.097	0.089	0.085	0.092	0.098

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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 1.21 to 1.58 meq/100g which indicates favorable physical condition for plant growth. The water holding capacity was found in the range of 3.11 ml/l to 5.0 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 7.14 to 8.42, 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 7.14 to 8.42%, 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.

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- 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 seven 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 quadrates 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.

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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

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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	Cocos nucifera	Thennai	10	6	6	1.67	100.0	1.67	0.15	8.40	6.52	2.39	17.32	Not assessed
3	Azadirachta indica	Veppam	17	6	6	2.83	100.0	2.83	0.13	14.29	6.52	1.98	22.79	Not assessed
4	Tamarindus indica	Puli	10	6	6	1.67	100.0	1.66	0.20	8.40	6.52	3.09	18.02	Not assessed
5	Mangifera indica	Mamaram	7	6	6	1.17	100.0	1.16	0.07	5.88	6.52	1.11	13.52	Data insufficient
6	Morinda pubescens	Nuna	6	6	6	1.00	100.0	1	0.24	5.04	6.52	3.74	15.31	Not assessed
7	Couroupita guianensis	Nagalingam	5	3	6	0.83	50.00	1.67	0.14	4.20	3.26	2.18	9.64	Not assessed
8	Bombax ceiba	Sittan	4	4	6	0.67	66.67	1	0.08	3.36	4.35	1.27	8.98	Not assessed
9	Acacia nilotica	Karuvelai	4	4	6	0.67	66.67	1	0.28	3.36	4.35	4.45	12.16	Least Concern
10	Bambusa vulgaris	Moongil	4	4	6	0.67	66.67	1	0.50	3.36	4.35	7.92	15.63	Not assessed
11	Syzygium cumini	naval	5	1	6	0.83	16.67	5	0.11	4.20	1.09	1.79	7.07	Not assessed
12	Carica papaya	Papaya	3	3	6	0.50	50.00	1	0.09	2.52	3.26	1.43	7.21	Not assessed
13	Psidium guajava	Guava	3	3	6	0.50	50.00	1	0.23	2.52	3.26	3.61	9.39	Not assessed
14	Cassia siamea	ManjalKonrai	3	2	6	0.50	33.33	1.5	0.07	2.52	2.17	1.11	5.81	Least Concern

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15	Ficus religiosa	Arasa maram	3	3	6	0.50	50.00	1	0.09	2.52	3.26	1.35	7.13	Not assessed
16	Musa paradise	Vaazhai	3	3	6	0.50	50.00	1	0.08	2.52	3.26	1.19	6.97	Not assessed
17	Prosopis juliflora	Vaelikaruvai	3	3	6	0.50	50.00	1	0.21	2.52	3.26	3.34	9.13	Not assessed
18	Tectona grandis	Thekku	3	3	6	0.50	50.00	1	0.12	2.52	3.26	1.88	7.66	Not assessed
19	Thespesia populnea	Poovarasam	3	3	6	0.50	50.00	1	0.15	2.52	3.26	2.39	8.18	Not assessed
20	Causuarina equisetifolia	Savukku	2	2	6	0.33	33.33	1	0.21	1.68	2.17	3.34	7.20	Not assessed
21	Alstonia scholaris	Elilaipalai	2	2	6	0.33	33.33	1	0.27	1.68	2.17	4.31	8.16	Least Concern
22	Anacardium occidentale	Cashew	1	1	6	0.17	16.67	1	0.44	0.84	1.09	6.96	8.88	Not assessed
23	Artocarpus heterophyllus	Palaa	2	2	6	0.33	33.33	1	0.18	1.68	2.17	2.85	6.70	Not assessed
24	Aegle marmelos	Vilvam	1	1	6	0.17	16.67	1	0.16	0.84	1.09	2.50	4.43	Not assessed
25	Delonix elata	Perungondrai	1	1	6	0.17	16.67	1	0.17	0.84	1.09	2.62	4.54	Least Concern
26	Pithecellobium dulce	Kodukapuli	1	1	6	0.17	16.67	1	0.14	0.84	1.09	2.18	4.11	Not assessed
27	Citrus medica	Elumichai	2	2	6	0.33	33.33	1	0.23	1.68	2.17	3.61	7.46	Not assessed
Total			110	83					5.02					

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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	32	17	24	1.17	0.71	1.65	14.43	17.17	Not Assessed
2	Calotropis gigantea	Erukam	16	12	24	0.58	0.50	1.17	7.22	12.12	Not Assessed
3	Tabernaemontanadivaricata	Crepe Jasmine	4	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
4	Catharanthus roseus	Nithyakalyani	4	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
5	Datura metal	Ummattangani	7	4	24	0.21	0.17	1.25	2.58	4.04	Not Assessed
6	Robiniapseudoacacia	Black locust	15	5	24	0.71	0.21	3.4	8.76	5.05	Least Concern
7	Acalypha indica	Kuppaimeni	18	8	24	0.83	0.33	2.5	10.31	8.08	Not Assessed
8	Stachytarpheaurticifolia	Rat tail	13	9	24	0.63	0.38	1.67	7.73	9.09	Not Assessed
9	Woodfordiafruiticosa	Velakkai	4	3	24	0.13	0.13	1	1.55	3.03	Least Concern
10	Hibiscus rosa sinensis	Sembaruthi	3	2	24	0.13	0.08	1.5	1.55	2.02	Not Assessed
11	Lantana camara	Unnichedi	8	6	24	0.38	0.25	1.5	4.64	6.06	Not Assessed
12	Parthenium hysterophorous	Vishapoondu	45	13	24	2.08	0.54	3.85	25.77	13.13	Not Assessed
13	Euphorbia geniculata	Amman Pacharisi	5	3	24	0.13	0.13	1	1.55	3.03	Not Assessed

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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	Helicteresisora	Valampuri	4	2	30	0.07	0.07	1	0.79	2.15	Not assessed
2	Tridax procumbens	Vettukaayathalai	7	4	30	0.17	0.13	1.25	1.98	4.30	Not assessed
3	Heraculem spondylium	Hog Weed	19	10	30	0.67	0.33	2	7.94	10.75	Not assessed
4	Tridax procumbens	Cuminipachai	18	4	30	0.50	0.13	3.75	5.95	4.30	Not assessed
5	Senna occidentalis	Nattamsakarai	30	4	30	0.83	0.13	6.25	9.92	4.30	Not assessed
6	Plumbago zeylanica	Chittiramoolam	12	3	30	0.10	0.10	1	1.19	3.23	Not assessed
7	Scrophularia nodosa	Sarakkothini	18	7	30	0.50	0.23	2.14	5.95	7.53	Not assessed
8	Viburnum dentatum	Viburnum	7	5	30	0.17	0.17	1	1.98	5.38	Least concern
9	Cynodondactylon	Arugu	15	6	30	0.40	0.20	2	4.76	6.45	Not assessed
10	Euphorbia hirta	Amman Pacharisi	7	4	30	0.17	0.13	1.25	1.98	4.30	Not assessed
11	Sida cordifolia	Maanikham	50	4	30	1.50	0.13	11.25	17.86	4.30	Not assessed
12	Sida acuta	Malaidangi	12	3	30	0.33	0.10	3.33	3.97	3.23	Not assessed
13	Laportea canadensis	Peruganchori	28	20	30	1.00	0.67	1.5	11.90	21.51	Not assessed
14	Sporobolus fertilis	Giant Parramatta Grass	10	4	30	0.30	0.13	2.25	3.57	4.30	Not assessed
15	Tephrosia purpurea	Kavali	23	4	30	0.67	0.13	5	7.94	4.30	Not assessed

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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	$H = \sum [(p_i) * \ln(p_i)]$ Where p_i : Proportion of total sample represented by species i : number of individuals of species i / total number 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

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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	0.018182	- 4.00733	-0.07286
Cocos nucifera	Thennai	10	0.090909	-2.3979	-0.21799
Azadirachta indica	Veppam	17	0.154545	- 1.86727	-0.28858
Tamarindus indica	Puli	10	0.090909	-2.3979	-0.21799
Mangifera indica	Mamaram	7	0.063636	- 2.75457	-0.17529
Morinda pubescens	Nuna	6	0.054545	- 2.90872	-0.15866
Couroupita guianensis	Nagalingam	5	0.045455	- 3.09104	-0.1405
Bombax ceiba	Sittan	4	0.036364	- 3.31419	-0.12052
Acacia nilotica	Karuvelai	4	0.036364	- 3.31419	-0.12052
Bambusa vulgaris	Moongil	4	0.036364	- 3.31419	-0.12052
Syzygium cumini	naval	5	0.045455	- 3.09104	-0.1405
Carica papaya	Papaya	3	0.027273	- 3.60187	-0.09823
Psidium guajava	Guava	3	0.027273	- 3.60187	-0.09823
Cassia siamea	ManjalKonrai	3	0.027273	- 3.60187	-0.09823
Ficus religiosa	Arasa maram	3	0.027273	- 3.60187	-0.09823
Musa paradise	Vaazhai	3	0.027273	- 3.60187	-0.09823
Prosopis juliflora	Vaelikaruvai	3	0.027273	- 3.60187	-0.09823
Tectona grandis	Thekku	3	0.027273	- 3.60187	-0.09823
Thespesia populnea	Poovarasam	3	0.027273	- 3.60187	-0.09823

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Causuarina equisetifolia	Savukku	2	0.018182	- 4.00733	-0.07286
Alstonia scholaris	Elilaipalai	2	0.018182	- 4.00733	-0.07286
Anacardium occidentale	Cashew	1	0.009091	- 4.70048	-0.04273
Artocarpus heterophyllus	Palaa	2	0.018182	- 4.00733	-0.07286
Aegle marmelos	Vilvam	1	0.009091	- 4.70048	-0.04273
Delonix elata	Perungondrai	1	0.009091	- 4.70048	-0.04273
Pithecellobium dulce	Kodukapuli	1	0.009091	- 4.70048	-0.04273
Citrus medica	Elumichai	2	0.018182	- 4.00733	-0.07286
Total		110			-3.02215005

H (Shannon Diversity Index) =3.02

Shrubs

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Jatropagossypifolia	Kaatamanaku	32	0.183908	-1.69332	-0.31142
Calotropis gigantea	Erukam	16	0.091954	-2.38647	-0.21945
Tabernaemontanadivaricata	Crepe Jasmine	4	0.022989	-3.77276	-0.08673
Catharanthus roseus	Nithyakalyani	4	0.022989	-3.77276	-0.08673
Datura metal	Ummattangani	7	0.04023	-3.21315	-0.12926
Robiniapseudoacacia	Black locust	15	0.086207	-2.45101	-0.21129
Acalypha indica	Kuppaimeni	18	0.103448	-2.26868	-0.23469
Stachytarpheaurticifolia	Rat tail	13	0.074713	-2.59411	-0.19381
Woodfordiafruticosa	Velakkai	4	0.022989	-3.77276	-0.08673
Hibiscus rosa sinensis	Sembaruthi	3	0.017241	-4.06044	-0.07001
Lantana camara	Unnichi	8	0.045977	-3.07961	-0.14159
Parthenium hysterophorous	Vishapoond	45	0.258621	-1.35239	-0.34976
Euphorbia geniculata	Amman Pacharisi	5	0.028736	-3.54962	-0.102
Total		174			-2.2234

H (Shannon Diversity Index) =2.22

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Herbs

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Helicteresisora	Valampuri	4	0.015385	-4.17439	-0.06422
Tridax procumbens	Vettukaayathalai	7	0.026923	-3.61477	-0.09732
Heraculem spondylium	Hog Weed	19	0.073077	-2.61624	-0.19119
Tridax procumbens	Cuminipachai	18	0.069231	-2.67031	-0.18487
Senna occidentalis	Nattamsakarai	30	0.115385	-2.15948	-0.24917
Plumbago zeylanica	Chittiramoolam	12	0.046154	-3.07577	-0.14196
Scrophularia nodosa	Sarakkothini	18	0.069231	-2.67031	-0.18487
Viburnum dentatum	Viburnum	7	0.026923	-3.61477	-0.09732
Cynodondactylon	Arugu	15	0.057692	-2.85263	-0.16457
Euphorbia hirta	Amman Pacharisi	7	0.026923	-3.61477	-0.09732
Sida cordifolia	Maanikham	50	0.192308	-1.64866	-0.31705
Sida acuta	Malaidangi	12	0.046154	-3.07577	-0.14196
Laportea canadensis	Peruganchori	28	0.107692	-2.22848	-0.23999
Sporobolus fertilis	Giant Parramatta Grass	10	0.038462	-3.2581	-0.12531
Tephrosia purpurea	Kavali	23	0.088462	-2.42519	-0.21454
Total		260			-2.51

H (Shannon Diversity Index) =2.51

i. Species diversity calculation

Details	H	Hmax	Evenness	Species Richness (Margalef)
Trees	3.02	3.36	0.89	5.95
Shrubs	2.22	2.56	0.86	2.32
Herbs	2.51	2.70	0.92	2.51

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

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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. Species richness is high for herb community when compared with tree and shrubs.

3.7.6 Floral study in the Buffer Zone:

Economically important Flora of the study area

Agricultural crops: The important crops of this district are Paddy, Maize, Ragi, Banana, Sugarcane, Cotton, Tamarind, Coconut, Mango, Groundnut, Vegetables and Flowers 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), *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.

3.7.7 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.

Roadside 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.

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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 striped 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 3-20 List of fauna species

Scientific Name	Common Name	Schedule of wild life protection act	IUCN conservation status
Mammals			
Funambulus pennanti	Palm Squirrel	IV	Least Concern
Mus rattus	Indian rat	IV	Not listed
Bandicota bengalensis	Indian mole rat	IV	Least Concern

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Funambulus palmarum	Three stripped palm squirrel	IV	Least Concern
Herestes edwardsii	Common Mongoose	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 familiaris	Indian dog	Not listed	Not listed
Bos Indicus	Indian Cow	Not listed	Not listed
Bubalus bubalis	Buffalo	I	Not listed
Sus scrofa domesticus	Domestic pig	Not listed	Not listed
Birds			
Milvus migrans	Black kite	IV	Least concern
Saxicoloides fulicatus	Indian Robin	IV	Least concern
Pycnonotus cafer	Red vented Bulbul	IV	Least concern
Phragamaticola aedon	Thick billed warbler	IV	Least concern
Pericrocotus cinnamomeus	Small Minivet	IV	Least concern
Eudynamys scolopaceus	Koel	IV	Least concern
Psittacula krameni	Rose ringed parakeet	IV	Least concern
Dicrurus marcocercus	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 Cuckoo	IV	Least concern
Reptiles & Amphibians			
Chameleon zeylanicum	Chameleon	IV	Not listed
Calotes versicolor	Common garden lizard	II	Not listed
Bungarus caeruleus	Common krait	IV	Not listed

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Ophisops leschenaultia	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.

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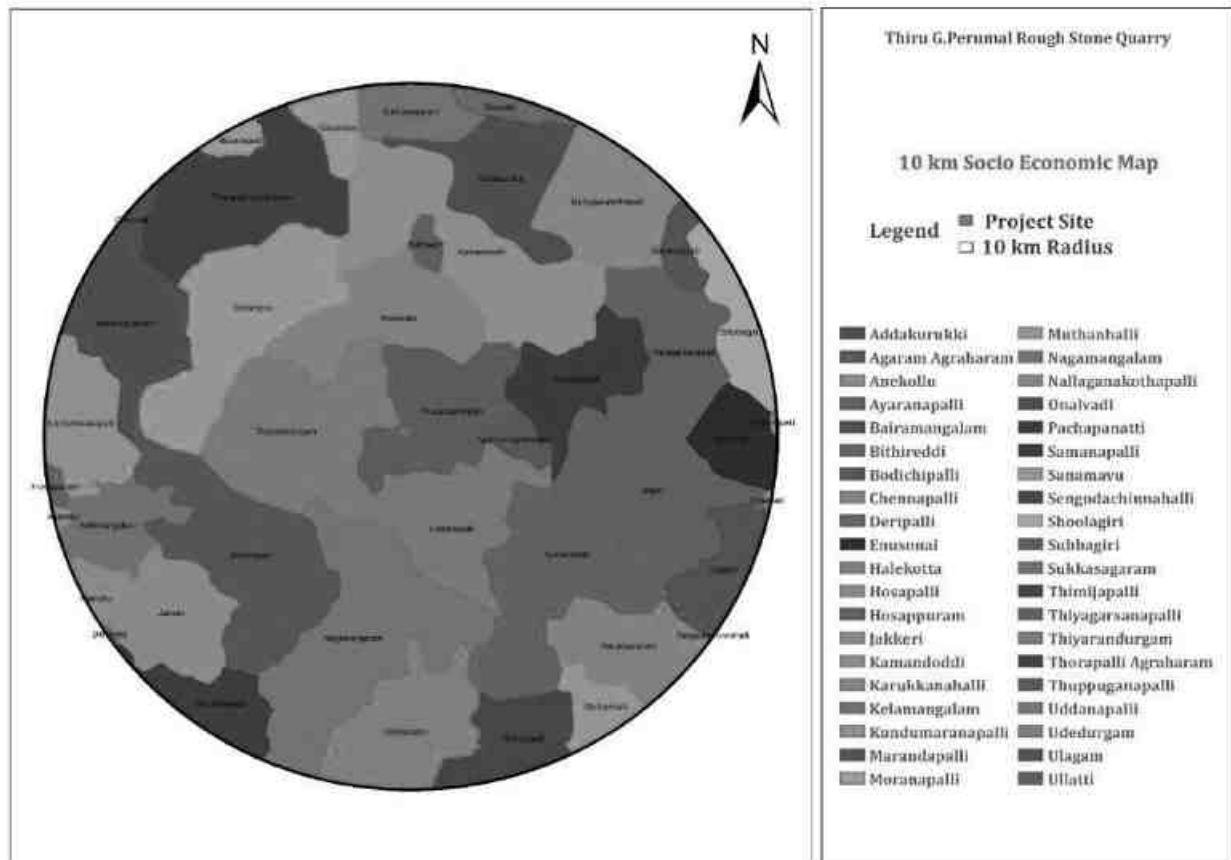


Figure 3.9 Socio Economic map surrounding the project site

The population, Household, Sex ratio, Literacy rate, SC, ST details for all the villages in the study area is listed below:

Table 3-21: Demography Survey Study

Source: Census of India, 2011

Villages	Household	Population	Sex Ratio		Literacy Rate		SC	ST
			Male	Female	Male	Female		
Addakuruki	108	444	223	221	132	90	130	0
Anekolu	152	894	443	451	202	161	1	0
Bodichipalli	678	3018	1569	1449	1058	736	178	5
Bairamangalam	460	2126	1109	1017	742	471	319	0

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Bothireddi	164	761	394	367	254	159	0	95
Deripalli	95	346	184	162	23	24	0	0
Enusonai	120	543	274	269	131	97	228	0
Hosapuram	58	239	123	116	75	50	1	0
Agaram Agraharam	87	447	229	218	128	89	95	0
Subbagiri	258	1096	540	556	349	288	370	0
Jakkeri	852	3681	1898	1783	1165	848	596	0
Pachapanetti	205	967	499	468	275	198	392	0
Kammandoddi	2174	9160	4855	4305	3403	2439	1503	13
Sanamavu	1093	4816	2532	2284	1547	1054	422	0
Ullagam	2101	9530	4788	4742	3480	2923	1487	0
Ullati	1607	6656	3411	3245	2475	1968	1360	0
Moranapalli	925	4248	2182	2066	1487	1062	659	183
Marandapalli	605	2764	1428	1336	960	635	509	11
Shoolagiri	2174	9160	4855	4305	3403	2439	1503	13
Samanapalli	1093	4816	2532	2284	1547	1054	422	0

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.

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Figure 3.10: Site Connectivity

Table 3-22: No. of Vehicles per Day

S. No	Vehicles Distribution	Number of Vehicles Distribution/Day	Passenger Car Unit (PCU)	Total Number of Vehicle in PCU
		SH 17	-	SH 17
1	Cars	840	1	840
2	Buses	303	3	909
3	Trucks	365	3	1095
4	Two wheelers	985	0.5	492.5
5	Three wheelers	385	1.5	577.5
Total		2878	-	3914

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Table 3-23: Existing Traffic Scenario and LOS

Road	V (Volume in PCU/hr)	C (Capacity in PCU/hr)	Existing V/C Ratio	LOS
SH 17	3914/24=163	413	0.4	B

Note: The existing level may be “Very Good” for SH 17.

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

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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 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

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4.2 LAND ENVIRONMENT:

Aspect	Impact	Mitigation Measures
<i>Mining of rough stone and Gravel</i>	<p>The 4.94.32 Ha mine is located in Thuppuganapalli Village having 7,37,960 m³ of Rough stone. The quarry operation is proposed to carry out with conventional open cast semi-mechanized mining with 7.0 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.</p> <p>The main impact of open cast mining on land-use is land degradation. The land is bound to be excavated for mining of Rough Stone Quarry.</p> <p>Impact on soil of the study area will be minimal as there are no wastewater generated, heavy metal infusion, stack emissions.</p> <p>Impact due to transformation of terrain characteristics over the large area results in soil degradation.</p>	<p>The project site is not prone to any kind of soil erosion (Source: Bhuvan).</p> <p>In addition, garland drainage of 1m x 1m will be provided to avoid storm water run-off.</p> <p>It is proposed to plant 2500 No's of local tree species (Neem, Vilvam Vaagai, Pungam, Magizha maram, Eachai, etc.,) along the roads, outer periphery of the mining area which enhances the binding property of the soil.</p> <p>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.</p> <p>The source of dust generation is majorly due to drilling, blasting, loading & unloading of the mined out mineral, the impact will be mitigated by water sprinkling regularly once in 3hrs.</p>

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	<p>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.</p>	<p>The mining activity is proposed to be carried out in hilly terrain.</p> <p>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.</p> <p>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.</p>
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4.3 WATER ENVIRONMENT:

Aspect	Impact	Mitigation Measures
<i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i>	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 49 m (1 m topsoil and 48 m rough stone) (including the existing depth) whereas the ground water table is at 90 m below the ground

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	<p>The ground water depletion may occur due to mining activity</p> <p>Chemicals consisting of nitrate used for blasting may pollute the surface run off.</p> <p>Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labours.</p>	<p>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.</p> <p>The ground water table is at a depth of 90 m 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.</p> <p>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.</p> <p>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.</p>
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4.4 AIR ENVIRONMENT:

Aspect	Impact	Mitigation Measures
<p><i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i></p>	<p><i>Impacts during Operation Phase</i></p> <p>During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated.</p> <p>The main source of pollutants arises due to drilling and blasting. 4 Nos of Tipper will be used for loading and unloading, 3 Nos of Excavator (1.2 m³ bucket capacity, and 5 Nos Jack Hammer 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.</p>	<p><i>Mitigation Measures during Operation Phase</i></p> <p>It is proposed to plant 2500 Nos of local species 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 (Neem, Magizham, Tamarind, Elandhai and Vilvam) in two tier to combat air pollution and with herbs (Nerium) in between the tree species.</p> <p>Planning transportation routes of the mined out mineral, so as to reach the nearest paved roads (an approach road) by shortest route connecting to SH 17.</p> <p>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.</p>

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	<p><u><i>Effect on Human</i></u></p> <ul style="list-style-type: none"> • 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. <p><u><i>Effect on Plants</i></u></p> <ul style="list-style-type: none"> • Stomatal index may be minimized due to dust deposit on leaf. 	<p>The trucks will be covered by tarpaulin.</p> <p>Overloading will be avoided.</p> <p>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.</p> <p>0.5 KLD of water will be proposed for sprinkling on unpaved roads to avoid dust generation during transportation.</p>
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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)

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4.4.1 Source Characterization

A detailed listing of all emission sources and their corresponding modelling input release parameters and emission rates is listed in 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 typically include dust collectors, hot water heaters, and emergency generator(s). Since at the present project the following sources are anticipated.

1. Hydraulic excavator – 0.90 Cum Bucket Capacity (with Rock Breaker Attachment)
2. Jack Hammer 32 mm 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 November 2023 to January 2024 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 replicate a 2 truck travel adjacent for a typical mining scenario.

The parameters considered for the hauling operation include the following,

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- 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 November 2023 to January 2024 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.

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Table 4-1 Emission Factors for uncontrolled mining

Activity	Emission Factor		References	
Topsoil handling	Scraper	0.029 Kg TSPM/ average time between spray application	USEPA (2008)	Jose I. Huertas & Dumar A. Camacho & Maria E. Huertas, Standardized emissions inventory methodology for open-pit mining areas, Environmental Science Pollution Research, 2012.
	Bulldozing	15.048 kg PM10/ Hr excavation	USEPA (2008)	
	Loading	2.3237E-04 kg PM10/ average time between spray application	USEPA (2006a)	
	Haulage	0.69718 kg PM10/VKT	USEPA (2006a) Cowherd (1988)	
Rough stone mining	Wet drilling	8.00E-5 lbs PM10/ Ton produce	EPA. August, 2004. Section 11.19.2, Crushed Stone Processing and Pulverized Mineral Processing. In: Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fifth Edition, AP-42. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina.	
	Loading	1.00E-4 lbs PM10/ Ton produce		

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4.5 **NOISE ENVIRONMENT:**

Aspect	Impact	Mitigation Measures
<i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i>	<p>Usage of Equipments (Excavator, Tipper, Jack Hammer), Machinery and trucks used for transportation will generate noise.</p> <p>Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure.</p> <p>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.</p>	<ul style="list-style-type: none"> • 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. <p>The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments.</p>

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		<ul style="list-style-type: none"> • It is proposed to plant 2500 Nos. of local species (Neem, Mandharai, Athi, Tamarind, Ashoka, Casuarinas and Villam) 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. SH 17 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.
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4.6 BIOLOGICAL ENVIRONMENT:

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

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		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.	safety distance will be provided all along the boundary of the mine lease area and safety. Around 0.76.94 Ha of land is utilized for greenbelt development (2500 Nos – 5 years). This will attract avifauna thus enhancing the existing ecological environment.

4.7 SOCIO ECONOMIC ENVIRONMENT:

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 project is a Government land and the land is vacant where there are no human settlement within 300m 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 Thiyanadurgam village which is 0.51 km SW of the project site

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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 movement of the vehicles may affect/injure the animals	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.
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 rough stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price.
Corporate Environmental Responsibility	The project will help in natural resource augmentation & Community resource development.	As a part of CER i.e, 5 Lakhs will be allocated for: Wildlife Protection Activities- Fund to the DFO, Krishnagiri for Cauvery North Wildlife Sanctuary.

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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 labour
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 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.

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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 mine plan and mine closure plan Mining Plan was approved by The Assistant Director , Geology & Mining, Krishnagiri District prior to submission of the Form-1 and PFR.

ToR issued by the SEIAA-TN vide Letter No. SEIAA-TN/F. No. 10312/SEAC/1(a)ToR-1647/2023 Dated: 22.12.2023. 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 project is the mining of Rough Stone 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/mechanized depending upon the geological and topographical setup of the mineral (ROM) to be won and the daily/annual targeted production.

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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 nearby village so they will either reach mine site by bicycle or by foot. Benefits: Cost of transportation of labors will be negligible
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 Thiyaranadurgam Village which is about \approx 0.51 km SW side of the project site.

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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	7 locations	24 hourly twice a week 4 hourly. Twice a week, One non monsoon season	Project Site, Government High School, Devasanapalli, Government Polytechnic College, Kelamangalam,

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NO _x		8 hourly, twice a week 24 hourly, twice a week	St. Anthony's Church Nagamangalam, Ayaranapalli, Jama Masjid, Mosque, Thirumalaigowni kotta, Sri Nagamuneswara Temple, Onnagurukki, Thimmarayaswamy Temple, Gudisaganapalli
Noise	7 locations	24 hourly Once in 7 locations	Project Site, Government High School, Devasanapalli, Government Polytechnic College, Kelamangalam, St. Anthony's Church Nagamangalam, Ayaranapalli, Jama Masjid, Mosque, Thirumalaigowni kotta, Sri Nagamuneswara Temple, Onnagurukki, Thimmarayaswamy Temple, Gudisaganapalli
Water (Ground water) • pH • Temperature • Turbidity • Magnesium Hardness	7 locations	Once in 7 locations	Project Site, Government High School, Devasanapalli, Government Polytechnic College, Kelamangalam, St. Anthony's Church Nagamangalam, Ayaranapalli,

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<ul style="list-style-type: none"> • Total Alkalinity • Chloride • Sulphate • Fluoride • Nitrate • Sodium • Potassium • Salinity • Total nitrogen • Total Coliforms • Fecal Coliforms 			Jama Masjid, Mosque, Thirumalaigowni kotta, Sri Nagamuneswara Temple, Onnagurukki, Thimmarayaswamy Temple, Gudisaganapalli
<p>Water (surface water)</p> <ul style="list-style-type: none"> • 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	Obeapalayam Lake and Ponnaiyar River

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Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	7 locations	Once in 7 locations	Project Site, Government High School, Devasanapalli, Government Polytechnic College, Kelamangalam, St. Anthony's Church Nagamangalam, Ayaranapalli, Jama Masjid, Mosque, Thirumalaigowni kotta, Sri Nagamuneswara Temple, Onnagurukki, Thimmarayaswamy Temple, Gudisaganapalli
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	

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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) Quarterly/half yearly	Half yearly	Project Site

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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 mining project falls under 1(a), Category B1 – Cluster Mining includes

Existing Quarries- Thiru. G. Perumal - 4.94.32 Ha and 3.00.0 Ha

Abandoned /Old Quarries – Thiru. G. Perumal - 5.00.0 Ha

Proposed Quarries – Nil

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.

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7.1.3 Identification of Hazard

7.1.3.1 Blasting Pattern:

The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

7.1.3.2 Drilling and Blasting:

Drilling and Blasting parameters are as follows:

1	Diameter of the hole	32-36 mm
2	Spacing	60 Cms
3	Depth	1 to 1.5 m
4	Charge / Hole	D.Cord with water or 70gms of gun powder or Gelatine.
5	Pattern of hole	Zig Zag
6	Inclination of hole	70 ⁰ from the horizontal.
7	Quantity of rock broken	0.45 MT x 2.6 = 1.17 MT
8	Control Blasting efficiency @90%	1.17 x 90% = 1.05MT / hole
9	Charge per hole	140 gms of 25mm dia cartridge
10	Quantity of rock broken per day	491.97 m ³

a. Types of explosives to be used:

Slurry Class 3 explosives, type of nitro compound are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling or Primary blasting is proposed. Detonators of Class 3 and Safety fuse of Class 6 are used.

b. Measures proposed to minimize ground vibration due to Blasting:

The quarry is situated more than 1.0 km from the nearby villages. Controlled blasting measures will be adopted for minimizing ground vibration and fly of rock. Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive

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mainly to give the shattering effect in rough stone for easy excavation and to control fly of rocks.

Diameter of Holes = 30-32mm
Depth = 1.2 to 1.5 m

Storage and safety measures to be taken while blasting: The proponent will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory Foreman/Permit Mines Manager.

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

- For Mining – Excavator of 1.2 Cum Bucket capacity , Jack Hammers (32-36 mm Dia) of 5 No. Loading Equipment – Excavator of 1.2 Cum Bucket Capacity
- Transportation (includes within the mine and mine to destination) – Tipper 3 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.

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7.1.4 General Precautionary measures for the Risk involved in the 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 (22 Nos.) and regular inspection for their use;
- In case of eventuality, first aid will be given by the senior safety officer 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 labors 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

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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 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.

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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)

7.2.1 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

7.2.2 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

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7.2.3 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 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 Mine lease area is a Government land. There is no displacement of the population within the project area and adjacent nearby area and hence Rehabilitation & Resettlement is not applicable.

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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 project will enhance the following physical infrastructure facilities in the adjoining areas:

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

Infrastructure: The excavated rough stone will be used for **Laying Roads, Building & Construction Projects, Bridges.**

Enhancement of Green Cover & Green Belt Development: As a part of reclamation plan, native tree species will be planted along the safety boundary 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 2500 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 mine, it will improve the livelihood of local people and also provide the indirect employment opportunities. The rough stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price.

As a part of CER, i.e., 5 Lakhs will be allocated. The detailed agenda, which is to be executed has been framed. The salient features of the programmes are as follow:

- Wildlife Protection Activities- Fund to the DFO, Krishnagiri for Cauvery North Wildlife Sanctuary

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8.3 PROJECT COST / INVESTMENT DETAILS

S. No.	Description	Cost (Rs.)
1	Fixed cost	4,67,40,000
2	Operational cost	1,30,00,000
	Total Cost	5,97,40,000

EMP Costing:

	Mitigation Measure	Provision for Implementation	Capital	Recurring
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	49432	49432
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water Sprinkling (thrice a day) Cost for recurring	200000	10000
	Air Quality will be regularly monitored as per norms within ML area & Ambient Area	Yearly Compliance as per CPCB norms	0	10000
	Muffle blasting - To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance	25000	2500
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000

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	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed	10000	0
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	98864
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	25000	10000
Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Ambient Noise will be regularly monitored as per norms within ML area	Yearly Compliance as per CPCB norms	0	10000
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Competent Person	0	0

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	Provision for Portable blaster shed	Installation of Portable blasting shelter	25000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	3689800
Water	Water management	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	49432	5000
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	2000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Implementation of EC, Mining Plan & DGMS Condition	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	7000	1000
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee)	88000	22000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	22000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	9886
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	5000	2000
	Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	988640	10000
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	247160	10000

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	vehicles /HEMMs. Flaggers will be deployed for traffic management			
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 st Class / 2 nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	40000
Green Belt Development	A total of 2500 trees will be planted for the proposed project (100 inside lease area and 1500 ,outside lease area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	200000	30000
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	450000	45000
			24,09,664	41,13,482
		Total	65,23,146	

Year 1	Year 2	Year 3	Year 4	Year 5
65,23,146	43,19,157	45,35,114	47,61,870	49,99,964

Total EMP Cost for 5 Years - Rs. 2,51,39,251/-

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9 ENVIRONMENTAL COST ANALYSIS

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

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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 with drilling & blasting as per mining plan approved by Department of Mining and Geology, Krishnagiri. Subsidence/slope failures are not envisaged because there are no loose strata overlying the deposit (mineral to be excavated). The bench height will be 5 m. The individual bench slope has been proposed to be kept at 60⁰ 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.,

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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. G. Perumal will work in association with M/s. Ecotech Labs Pvt Ltd.

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Table 10-1: Impacts and mitigation measures

S. No	Impacts on Environment	Activity /Aspect	Anticipated impacts	Mitigation measures
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.
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.
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.
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 runoff.
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

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				<ul style="list-style-type: none"> ✓ 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
6.	Building materials resource conservation	Building Material consumption	Use of farfetched construction materials than the locally available construction materials may lead to over exploitation of natural resources & increase in carbon footprint.	<ul style="list-style-type: none"> • Use of locally available construction materials.

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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

The Rough Stone Quarry site is a cluster of three mining projects. The individual mine lease area is 4.94.32 Ha of Rough Stone Quarry located at S S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District.

11.2 PROJECT OVERVIEW

Table 11-1: Project Overview

S. No.	Description	Details
1	Project Name	Thiru. G. Perumal, Rough Stone Quarry
2	Proponent	Thiru. G. Perumal
3	Mining Lease Area Extent	4.94.32 Ha (Government Land)
4	Location	S.F. S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu
5	Latitude	12° 36' 53.0353"N to 12° 36' 45.6499"N
6	Longitude	77° 55' 25.4549"E to 77° 55' 18.3602"E
7	Topography	Hilly terrain topography
8	Site Elevation above MSL	822 m from MSL
9	Topo sheet No.	57-H/14
10	Minerals of Mine	Rough Stone Quarry
11	Proposed production of Mine	Proposed Capacity of reserves for 5 Years ➤ Rough stone : 7,37,960 m ³
12	Ultimate depth of Mining	49 m (1 m topsoil and 48 m rough stone) (including the existing depth)
13	Method of Mining	Open cast semi-mechanized mining

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14	Water demand	2.0 KLD
15	Source of water	Water will be supplied through tankers supply
16	Man power	22 Nos.
17	Mining Plan Approval	Scheme of Mining Plan was approved by The Deputy Director, Department of Geology & Mining, Krishnagiri vide Roc. No. 214/2018/Mines dated 20.10.2023.
18	Precise area communication letter	Precise Area Communication Letter received from The District Collector, Department of Geology and Mining, Krishnagiri District vide Rc. No.214/2018/Mines dated 09.03.2018.
19	Production details	Geological reserves: 8,74,879 m ³ of Rough stone Proposed year wise reserves (5 years): 7,37,960 m ³ of Rough stone
20	Boundary Fencing	10 m safety distance all along the boundary for Govt. Lands. Fencing will be provided.
21	Disposal of overburden	The top soil generation from the lease area is estimated to be 6,831 m ³ for 5 years. The top soil formation will be removed and dumped in in Western Side boundary barrier of the lease area. This will be utilized for road low laying area and plantation purposes.
22	Ground water	The ground water table is reported as 90 m BGL in nearby open wells and bore wells of this area. Mining depth taken as 49 m (1 m topsoil and 48 m rough stone) (including the existing depth). Now, proposed quarry depth is above the water table. Hence, quarrying may not affect the ground water.
23	Habitations within 300m radius of the Project Site	There is no Habitation within 300m radius of the project site.
24	Drinking water	Water will be supplied through tankers from Thiyaranadurgam village which is 0.51 km SW of the project site.

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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 rough stone form the primary building material.

Rough stone 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.

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 overlain by soil / alluvium deposits with an average thickness of 1 to 5mts. Rough stone deposits suitable for the production of Jelly, Cut stones and Pillar Stones are available throughout the Krishnagiri District. Rough stones 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.

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	Proper mitigation measures like water sprinkling on haul roads will be adopted to control dust emissions.

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<i>Project Proponent</i>	<i>Thiru. G. Perumal</i>	
<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

	air in the and around the mine area. The increased emission may cause respiratory & Cardiovascular problems in human health	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 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.

<i>Project</i>	<i>Rough Stone Quarry- 4.94.32 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru. G. Perumal</i>	
<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

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 95 % 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.

<i>Project</i>	<i>Rough Stone Quarry- 4.94.32 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru. G. Perumal</i>	
<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

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.

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.

<i>Project</i>	<i>Rough Stone Quarry- 4.94.32 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru. G. Perumal</i>	
<i>Project Location</i>	<i>Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District</i>	

- Effective communication of organization's policy and objectives to employees and seeking feedbacks from all our employees and concerned stakeholders for continual improvement.

ANNEXURES

ANNEXURE-I

**STANDARD TOR CONDITIONS WITH
ADDITIONAL TOR POINTS**



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

STATE LEVEL ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY-TAMILNADU

3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet,
Chennai - 600 015.
Phone No. 044-24359973
Fax No. 044-24359975

TERMS OF REFERENCE (ToR)

Lr.No. SEIAA-TN/F.No.10312/SEAC/1(a)ToR- 1647/2023 Dated: 22.12.2023.

To

Thiru. G. Perumal
S/o. Gopal
A-14, Thally Hudco Thally Road,
Hosur Taluk, Krishnagiri – 635109.

Sir / Madam,

Sub: SEIAA, Tamil Nadu – Proposed Rough Stone quarry lease over an extent of 4.94.32 Ha at SF.Nos. 314 (Part -3) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu by Thiru. G. Perumal - under project category – “B1” and Schedule S.No.1 (a) “Mining of Minerals Projects” – **ToR issued along with Public Hearing** - preparation of EIA report – Regarding.

- Ref:**
1. Online proposal No.SIA/TN/MIN/430287/2023, Dated: 22.05.2023.
 2. Your application submitted for Terms of Reference dated: 12.08.2023.
 3. Minutes of the 427th SEAC meeting held on 07.12.2023.
 4. Minutes of the 684th SEIAA meeting held on 22.12.2023.

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

The proponent, Thiru. G. Perumal has submitted an application for Terms of Reference (ToR) on 12.08.2023, for the Proposed Rough Stone quarry lease over an extent of 4.94.32 Ha at SF.Nos. 314 (Part-3) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu.


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Discussion by SEAC and the Remarks:-

The proposal is placed for appraisal in the 427th SEAC meeting held on 07.12.2023. 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. G. Perumal has applied for Terms of Reference for the Proposed Rough Stone quarry lease over an extent of 4.94.32 Ha at SF.Nos. 314 (Part – 3) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu.
2. The project/activity is covered under Schedule 1(a) “Mining Projects” of the Schedule to the EIA Notification, 2006.
3. Earlier, the proposal was placed in the 409th SEAC meeting held on 21.09.2023. During the meeting the EIA coordinator informed that the project proponent was absent for the meeting. Hence the subject was not taken up for appraisal and committee decided that the project proponent shall furnish the reason for his absence.

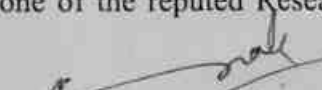
Now, the proposal was placed in the 427th SEAC meeting held on 07.12.2023. Based on the presentation made by the proponent SEAC recommended grant of **Terms of Reference (TOR) with Public Hearing**, subject to the following TORs, as per the **Annexure I** of this minute, in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC to be included in EIA/EMP Report:

1. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.
2. The proponent shall study about the school located within 500m from the cluster as well as from this individual mine and further PP shall furnish the details viz. Number of students studying in the school, school timings.
3. The proponent shall study the impact of carrying out blasting on the schools and structures located within 500m from the cluster by carrying out vibration study in the any of the operating mine in the same cluster by involving any reputed scientific / academic institutions such as CIMFR, Dhanbad; NIRM, Bangaluru; IIT(ISM), Dhanbad; Anna University, Chennai; NITK, Surathkal and IIT, Madras.


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ANNEXURE I

1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:
 - (i) Original pit dimension
 - (ii) Quantity achieved Vs EC Approved Quantity
 - (iii) Balance Quantity as per Mineable Reserve calculated.
 - (iv) Mined out Depth as on date Vs EC Permitted depth
 - (v) Details of illegal/illicit mining
 - (vi) Violation in the quarry during the past working.
 - (vii) Quantity of material mined out outside the mine lease area
 - (viii) Condition of Safety zone/benches
 - (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.
2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.
3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.
4. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.
5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.
7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research


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


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


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


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


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

Appendix -I
List of Native Trees Suggested for Planting

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


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

Discussion by SEIAA and the Remarks:-

The subject was placed in 684th Authority meeting held on 22.12.2023. The authority noted that the subject was appraised in 427th SEAC meeting held on 07.12.2023.

Based on the presentation and documents furnished by the project proponent, SEAC after detailed deliberations, decided to **recommend the proposal for the grant of Terms of Reference (ToR)**.

After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing** under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions in addition to the following conditions and the conditions mentioned in 'Annexure B' of this minute:

Annexure 'B'

Cluster Management Committee

1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.
2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,


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3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.
4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.
7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.
8. The committee shall furnish the Emergency Management plan within the cluster.
9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.
10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.

Impact study of mining

12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following
 - a) Soil health & soil biological, physical land chemical features.
 - b) Climate change leading to Droughts, Floods etc.
 - c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
 - d) Possibilities of water contamination and impact on aquatic ecosystem health.
 - e) Agriculture, Forestry & Traditional practices.
 - f) Hydrothermal/Geothermal effect due to destruction in the Environment.
 - g) Bio-geochemical processes and its foot prints including environmental stress.
 - h) Sediment geochemistry in the surface streams.


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Agriculture & Agro-Biodiversity

13. Impact on surrounding agricultural fields around the proposed mining Area.
14. Impact on soil flora & vegetation around the project site.
15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.
16. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.
17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
18. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.

Forests

19. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.

Water Environment

23. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.
24. Erosion Control measures.
25. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.


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26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.
28. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
30. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.

Energy

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

Climate Change

32. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.
33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.

Mine Closure Plan

34. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.

EMP

35. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.
36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.

Risk Assessment

37. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.


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Disaster Management Plan

38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.

Others

39. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.

40. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.

41. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.

A. STANDARD TERMS OF REFERENCE

- 1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- 2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- 4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).


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- 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.


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


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



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

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.


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4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of 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


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

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

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


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2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website <http://www.moef.nic.in/> may be referred.

- After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
- The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I) (part) dated 29th August, 2017.


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Copy to:

1. The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai - 600 032.
4. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan, CGO Complex, New Delhi 110003
5. The District Collector, Krishnagiri District.
6. The Assistant Director, Department of Geology & Mining, Krishnagiri District.
7. Stock File.

TOR Reply of Rough stone Quarry Over an Extent of 4.94.32 Ha

COMPLIANCE OF TOR CONDITIONS

Point wise compliance of ToR points issued by SEIAA, TN vide letter No. SEIAA-TN/F. No. 10312/SEAC/1(a)ToR-1647/2023 Dated: 22.12.2023 for Mining of Minor Minerals in the Mine of 'Rough stone Quarry Over an Extent of 4.94.32 Ha at S.F.No. 314 (Part III) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamilnadu State'.

ToR Ref.	Description	Response	Page Ref. in EIA Report
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.	<p>Precise Area Communication Letter received from The District Collector, Department of Geology and Mining, Krishnagiri District vide Rc. No.214/2018/Mines dated 09.03.2018</p> <p>The Scheme of Mining Plan was approved by The Deputy Director, Department of Geology & Mining, Krishnagiri vide Roc. No. 214/2018/Mines dated 20.10.2023.</p> <p>The Production of Rough Stone & Gravel for five years is proposed in the EIA/EMP in chapter no-2.</p>	<p>Chapter-2</p> <p>Table No.2.2</p> <p>Page No.33</p>
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 4.94.32 hectare in Thuppuganapalli Village for Rough stone quarrying was approved by Deputy Director, Department of Geology & Mining, Krishnagiri vide Roc. No. 214/2018/Mines dated 20.10.2023.	Annexure-III

TOR Reply of Rough stone Quarry Over an Extent of 4.94.32 Ha

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 Scheme of Mining Plan was approved by The Deputy Director, Department of Geology & Mining, Krishnagiri vide Roc. No. 214/2018/Mines dated 20.10.2023.	Annexure-III
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 corners of proposed mining lease area have been incorporated in mining plan and Chapter 2 of EIA/ EMP Report.	Chapter-2, Figure no. 2.2 Page. no. 35
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, Figure no. 2.4 Page. no. 37

TOR Reply of Rough stone Quarry Over an Extent of 4.94.32 Ha

6.	<p>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</p>	<p>Details about the land proposed for mining activities should be given Chapter 2.</p>	<p>Chapter-2 Page 31</p>
7	<p>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?</p> <p>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 /</p>	<p>Noted.</p>	

TOR Reply of Rough stone Quarry Over an Extent of 4.94.32 Ha

	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.	It is an open cast mining project. Blasting details are incorporated in Chapter 2.	Chapter-2, Page no. 31
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 Figure no. 2.5 Page no. 38
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	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-3 of EIA/ EMP Report.	Chapter 3

TOR Reply of Rough stone Quarry Over an Extent of 4.94.32 Ha

	<p>indicated.</p> <p>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.</p>	<p>Cauvery North Wildlife Sanctuary- 8.40 km S of the project site.</p> <p>There is no national park, migratory routes of fauna in the study area.</p>	<p>Chapter 2, Table no. 2.4 Page no. 39</p>
11	<p>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.</p>	<p>The top soil generation from the lease area is estimated to be 6,831 m³ for 5 years. The topsoil formation will be removed and dumped in in Western Side boundary barrier of the lease area. This will be utilized for road low laying area and plantation purposes.</p>	<p>Chapter-2, Page no. 31</p>
12	<p>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.</p> <p>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</p>	<p>Complied.</p> <p>The mine lease area is not falling under forest land.</p>	

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	<p>which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.</p>		
13	<p>Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.</p>	<p>The mine lease area is not falling under forest land.</p>	
14	<p>Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006</p>	<p>Not Applicable.</p> <p>There is no involvement of forest land in the project area.</p>	
15	<p>The vegetation in the RF / PF areas in the study area, with necessary details, should be</p>	<p>Details of flora have been discussed in Chapter-3 of the EIA/EMP Report.</p>	<p>Chapter-3 Page No. 53</p>

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16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly detailed mitigative measures required, should be worked out with cost implications and submitted.	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 10km 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 State Wildlife Department/Chief	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.	Chapter 2, Table no. 2.4 Page no. 39

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18	<p>A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, 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.</p>	<p>Details biological study (flora & fauna) within 10 km radius of the project site have been incorporated in Chapter-3 of EIA/EMP Report.</p> <p>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.</p>	<p style="text-align: right;">Chapter – 3 Page No. 53</p>
19	<p>Proximity to Areas declared as ‘Critically Polluted’ or the Project areas likely to come under the ‘Aravali Range’, (attracting court restrictions for mining operations), should also be</p>	<p>The proposed mining lease area is not falling under critically polluted area.</p>	

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	<p>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.</p>		
20	<p>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)</p>	<p>There is no Coastal Zone within 15km radius of the project site.</p>	
21	<p>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</p>	<p>There is no Rehabilitation and resettlement is involved. Land classified as Government land</p>	

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	<p>& 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.</p>		
22	<p>One season (non-monsoon) and (Summer 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</p>	<p>Baseline data collected from November 2023 to January 2024) has been incorporated in EIA/EMP report.</p> <p>The key plan of monitoring station has been discussed in Chapter-4. Locations of the monitoring stations have been selected keeping in view the pre-dominant downwind direction and</p>	Chapter 3

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	<p>presented date-wise in the EIA and EMP Report.</p> <p>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 500m of the mine lease in the pre- dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.</p>	<p>location of the sensitive receptors and also that they represent whole of the study area.</p>	
23	<p>Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be</p>	<p>Air quality modelling & Impact of Air quality will be furnished in Final EIA report</p> <p>Transportation of mineral during operation of mines will be done by road & SH 17 through dumpers and the impact of movement of vehicles are incorporated in EIA/EMP report.</p>	<p>Chapter-4</p> <p>Chapter 3</p> <p>Page No.103</p>

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	<p>provided.</p> <p>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.</p>		
24	<p>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.</p>	<p>Total water requirement: 2.0 KLD Dust Suppression: 0.5 KLD Domestic Purpose: 1.0 KLD Plantation :0.5 KLD Domestic Water will be sourced from nearby Thiyaranadurgam Village (0.51 km SW of the project site)</p>	<p>Chapter-2 Table 2.14 Page no.50</p>
25	<p>Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.</p>	<p>Not Applicable Water will be taken from nearby villages</p>	
26	<p>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.</p>	<p>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.</p>	

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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 Page No.106
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: 49 m (1 m topsoil and 48 m rough stone) (including existing depth). The ground water table is reported as 90 m 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 Table 2.2 Page no. 33
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	There is no any stream crossing in the proposed quarry	Executive Summary

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	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.	Highest elevation: 840 AMSL Depth: 49 m (1 m topsoil and 48 m rough stone) (including existing depth).	Chapter-2 Table no. 2.2 Page no. 33
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	Green Belt Development plan is proved given in Chapter 2.	Chapter-2

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	the species which are tolerant 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	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 mining activity has been incorporated in EIA/EMP report.	Chapter-3 Page No.109
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

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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 Mining Plan followed by Scheme of mining.	Mining Plan and Plates as Annexure V and VI
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-10 of EIA/EMP.	Chapter-10 Page No. 140
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-10 Page No. 140
37	Measures of socio-economic significance and influence to the local community proposed to be provided by the Project	Suitable measures has been discussed in Chapter 4	Chapter-4 Page No. 106

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	Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.		
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 EIA/EMP Report.	Chapter-10 Page No. 140
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 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.	

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41	The cost of the project (capital cost and recurring cost) as well as the cost towards implementation of EMP should clearly be spelt out.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">S. No</th> <th style="text-align: center;">Description</th> <th style="text-align: center;">Cost</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Fixed Asset Cost</td> <td style="text-align: right;">4,67,40,000</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Operational Cost</td> <td style="text-align: right;">1,30,00,000</td> </tr> <tr> <td></td> <td>Total</td> <td style="text-align: right;">5,97,40,000</td> </tr> </tbody> </table> <p style="text-align: center;">EMP Cost: 2,51,39,251/- for 5 Years</p>	S. No	Description	Cost	1	Fixed Asset Cost	4,67,40,000	2	Operational Cost	1,30,00,000		Total	5,97,40,000	Chapter-8 Page No. 135
S. No	Description	Cost													
1	Fixed Asset Cost	4,67,40,000													
2	Operational Cost	1,30,00,000													
	Total	5,97,40,000													
42	Disaster Management Plan shall be prepared and included in the EIA/EMP Report.	Disaster Management and Risk Assessment has been incorporated in Chapter-7	Chapter-7 Page No. 131												
43	Benefits of the project if the project is implemented should be spelt out. The benefits of the project shall clearly indicate environmental, social economic, employment potential etc.	Benefits of the project has incorporated	Chapter-8 Page No. 134												
44	Besides the above, the below mentioned general points are also to be followed:														
(a)	Executive Summary of the EIA/EMP report	Executive Summary of EIA Report is given from page No.10-24													
(b)	All documents to be properly referenced with index and continuous page numbering.	Complied													
(c)	Where data are presented in the report especially in tables, the period in which the data were collected and the sources	Complied													

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	should be indicated.		
(d)	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the project.	Complied	
(e)	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	There are no changes in prepared EIA as	

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<p>)</p>	<p>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</p>	<p>per submitted Form-1 & PFR</p>	
<p>(i)</p>	<p>As per the circular no. J- 11011/618/2010-IA. II(I) dated 30.5.2012, 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.</p>	<p>Will be complied after grant environment clearance from SEIAA, Tamilnadu</p>	
<p>(j)</p>	<p>The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii)</p>	<p>All Sectional Plates of Quarry is enclosed in Mining Plan.</p>	

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	geological maps and sections (iii) sections of mine pit and external dumps, if any clearly showing the features of the adjoining area.		
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Additional TOR by SEAC

S.No.	Condition	Compliance
1.	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m. (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship. industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building. number of residents, their profession and income, etc.	Thiyaranadurgam Village is at a distance of 0.51 km SW of the project site. About 20 structures are within the 500 m radius of the project site.
2.	The proponent shall study about the school located within 500 m from the cluster as well as from this individual mine and further PP shall furnish the details viz. Number of students studying in the school, school timings.	None within 500 m of the project site.
3.	The proponent shall study the impact of carrying out blasting on the schools located within 500 m from the cluster by carrying out vibration study in the any of the operating mine in the same cluster by involving any reputed scientific / academic institutions such as CIMFR Dhanbad, NIRM Bangaluru, IIT(ISM) Dhanbad, Anna University Chennai, NITK Surathkal and IIT Madras.	The detailed vibration study will be conducted by the reputed reputed scientific / academic institution and the same will be submitted along with the Final EIA Report.

ANNEXURE 1

1.	In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following: (i) Original Pit Dimension	The proponent had obtained Environmental Clearance from DEIAA vide Lr. No. 03/DEIAA-KGI/EC No.60/2018 dated 27.08.2018 for a
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	<p>(ii) Quantity achieved vs EC Approved Quantity</p> <p>(iii) Balance Quantity as per Mineable Reserve calculated</p> <p>(iv) Mines out depth as on date vs EC permitted depth</p> <p>(v) Details of illegal/illicit mining</p> <p>(vi) Violation in the quarry during the past working</p> <p>(vii) Quantity of material mines out outside the mine lease area</p> <p>(viii) Condition of safety zone/benches</p> <p>(ix) Revised/modified mining plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50 m.</p>	<p>period of 5 Years.</p> <p>The Quarry Pit Dimension details obtained from The Deputy Director, Dept. of Geology and Mining, Krishnagiri vide Roc. No. 2018/Mines dated 17.10.2023.</p> <p>The details of the approved and permit issued quantity obtained from The Deputy Director, Dept. of Geology and Mining, Krishnagiri vide Roc. No. 2018/Mines dated 17.10.2023.</p> <p>The proposed bench height is 5.0 m and bench width is 5.0 m</p>
2.	<p>Details of habitations around the proposed mining area and latest VAO certificate regarding the locations of habitations within 300 m radius from the periphery of the site.</p>	<p>The VAO certificate regarding the locations of habitations within 500 m radius from the periphery of the site has been obtained.</p>
3.	<p>The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m. (iii) 200 m and (iv) 300 m (v) 500m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship. industries, factories, sheds, etc with indicating the owner of the building, nature of construction, age of the building. number of residents, their profession and income, etc.</p>	<p>Thiyaranadurgam Village is at a distance of 0.51 km SW of the project site.</p> <p>About 20 structures are within the 500 m radius of the project site.</p>

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4.	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within I km of the proposed quarry.	The hydro-geological study will be conducted and the report of the same will be submitted with Final EIA report.
5.	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report	The biodiversity has been studied and discussed in chapter 3 of the Draft EIA Report.
6.	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	The letter from DFO stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the project site will be furnished in the Final EIA Report.
7.	In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved mining plan, the project proponent (PP) shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRIW Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The Pp shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	The detailed vibration study will be conducted by the reputed reputed scientific / academic institution and the same will be submitted along with the Final EIA Report.

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8.	However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	The Proposed project is an existing quarry which was operational after receiving Environmental Clearance from DEIAA vide Lr. No. 03/DEIAA-KGI/EC No.60/2018 dated 27.08.2018 for a period of 5 Years.
9.	The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, IVI class mines manager appointed by the proponent.	The PP will furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate. mine foreman, II/I Class mines manager appointed by the proponent and the same will be submitted along with the Final EIA Report.
10.	The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.	The blasting will be carrying out only by controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.
11.	The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.	The proponent had obtained Environmental Clearance from DEIAA vide Lr. No. 03/DEIAA-KGI/EC No.60/2018 dated 27.08.2018 for a period of 5 Years. The Quarry Pit Dimension details obtained from The Deputy Director,

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		<p>Dept. of Geology and Mining, Krishnagiri vide Roc. No. 2018/Mines dated 17.10.2023.</p> <p>The details of the approved and permit issued quantity obtained from The Deputy Director, Dept. of Geology and Mining, Krishnagiri vide Roc. No. 2018/Mines dated 17.10.2023.</p>
12.	<p>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</p>	<p>The proponent had obtained Environmental Clearance from DEIAA vide Lr. No. 03/DEIAA-KGI/EC No.60/2018 dated 27.08.2018 for a period of 5 Years.</p> <p>The Quarry Pit Dimension details obtained from The Deputy Director, Dept. of Geology and Mining, Krishnagiri vide Roc. No. 2018/Mines dated 17.10.2023.</p> <p>The details of the approved and permit issued quantity obtained from The Deputy Director, Dept. of Geology and Mining, Krishnagiri vide Roc. No. 2018/Mines dated 17.10.2023.</p>
13.	<p>What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines</p>	<p>The proponent had obtained Environmental Clearance from DEIAA vide Lr. No. 03/DEIAA-KGI/EC No.60/2018 dated 27.08.2018 for a period of 5 Years (2018-2023).</p> <p>As per OM (F.No. IA3-22/11/2023-IA.III (E-208230)) of MoEF&CC dated</p>

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		28.04.2023, the PP have suspended all the quarrying activities including excavation, transportation and dispatch of mineral/waste.
14.	<p>Quantity of minerals mined out.</p> <ul style="list-style-type: none"> • Highest production achieved in any one year • Detail of approved depth of mining. • Actual depth of the mining achieved earlier. • Name of the person already mined in that leases area. • If EC and CTO already obtained, the copy of the same shall be submitted. • Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 	<p>The proponent had obtained Environmental Clearance from DEIAA vide Lr. No. 03/DEIAA-KGI/EC No.60/2018 dated 27.08.2018 for a period of 5 Years.</p> <p>The Quarry Pit Dimension details obtained from The Deputy Director, Dept. of Geology and Mining, Krishnagiri vide Roc. No. 2018/Mines dated 17.10.2023.</p> <p>The details of the approved and permit issued quantity obtained from The Deputy Director, Dept. of Geology and Mining, Krishnagiri vide Roc. No. 2018/Mines dated 17.10.2023.</p>
15.	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Toposheet and geology of mining lease area is given in sections 2.3 & 2.5 of chapter 2 of EIA report.
16.	The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	The Drone Video Survey covering the cluster area, greenbelt and fencing photos will be incorporated and

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		submitted along with Final EIA report.
17.	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan	The photographs will be incorporated the Final EIA report.
18.	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment, and the remedial measures for the same	Details are provided in section 2.6 of chapter 2 of the Draft EIA report
19.	The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of the Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.	The Organization chart has been discussed in of Chapter 2 of the Draft EIA Report.
20.	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds, etc. within I km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to	The hydro-geological study will be conducted and the report of the same will be submitted with Final EIA report.

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	<p>assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided</p>	
21.	<p>The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.</p>	<p>Baseline data is presented in Chapter 3 of the Draft EIA Report.</p>
22.	<p>The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.</p>	<p>Impact assessment study is conducted and provided in Chapter 4 of the Draft EIA Report.</p>
23.	<p>Rainwater harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted</p>	<p>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.</p>
24.	<p>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</p>	<p>Details are given in Chapter 3 of the Draft EIA Report</p>

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	preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.	
25.	Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided	Details are provided in section 2.7.2 of Chapter 2 of the Draft EIA report
26.	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.	None
27.	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided	At the 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.
28.	Impact on local transport infrastructure due to the Project should be indicated.	Traffic Impact Assessment is provided in section 3.9 of Chapter 3 of the Draft EIA Report.
29.	A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	Detail of trees in core and buffer zones is provided in section 3.7 of Chapter 3 of the Draft EIA Report.

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30.	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Approved mining plan including mine closure plan as Plate No. VIII.
31.	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible	Detail of flora & fauna in core and buffer zones is provided in section 3.7 of Chapter 3 of Draft EIA Report.
32.	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	Green belt plantation plan is provided in section 2.14 of Chapter 2 of Draft EIA Report. Approved mining plan including green belt development plan as Plate No. V.
33.	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner	Green belt plantation plan is provided in section 2.14 of Chapter 2 of Draft EIA Report. Approved mining plan including green belt development plan as Plate No. V.

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34.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period	Disaster management Plan is provided as section 7.2 of Chapter 7 of Draft EIA Report.
35.	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Risk Assessment and management Plan is provided as section 7.2 of Chapter 7 of Draft EIA Report.
36.	Occupational Health impacts of the Project should be anticipated, and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health impacts are discussed in section 4.8 of Chapter 4 of Draft EIA Report.
37.	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Impact on socio-economic environment is discussed in section 4.7 of Chapter 4 of Draft EIA Report.
38.	The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Socio-economic study has been conducted and is provided in section 3.8 of Chapter 3 of Draft EIA Report.

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39.	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No litigation is pending against the project
40.	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.	Project benefits are detailed in Chapter 8 of Draft EIA Report.
41.	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB. 47. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	As per OM (F.No. IA3-22/11/2023-IA.III (E-208230)) of MoEF&CC dated 28.04.2023, the PP have suspended all the quarrying activities including excavation, transportation and dispatch of mineral/waste.
42.	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	Noted and Agreed to comply.
43.	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.	Noted

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Additional TOR by SEIAA

1.	Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	Agreed to comply. Cluster Management Committee, will include all the proponents in the cluster as members including the existing as well as proposed quarry.
2.	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	Agreed to comply.
3.	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	Agreed to comply.
4.	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	Agreed to comply.
5.	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan	Risk management plan is discussed in Chapter-7 of the Draft EIA Report.
6.	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the	Agreed to comply.

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	committee in implementing the environmental policy devised shall be given in detail.	
7.	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	Agreed to comply.
8.	The committee shall furnish the Emergency Management plan within the cluster.	Emergency management plan is discussed in Chapter-7 of the Draft EIA Report.
9.	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Health of workers and staff is discussed in Chapter-9 of the Draft EIA Report.
10.	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety	Agreed to comply.
11.	The committee shall furnish the fire safety- and evacuation plan in the case of fire accidents.	Agreed to comply.

Impact Study of Mining

12.	<p>Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following.</p> <ul style="list-style-type: none"> a) Soil health & bio-diversity b) Climate change leading to Droughts, Floods etc., c) Pollution leading to release Greenhouse gases (GHG), rise in Temperature & 	<p>The biodiversity has been studied and discussed in chapter 3 of the Draft EIA Report.</p> <p>The soil erosion map 5km surrounding the project site has been given in chapter 3 of the Draft EIA Report.</p> <p>The detailed study will be carried out and will be incorporated in the Final EIA Report.</p>
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	<p>Livelihood of the local people.</p> <p>d) Possibilities of water containment and impact on aquatic ecosystem health.</p> <p>e) Agriculture, Forestry & Traditional practices.</p> <p>f) Hydrothermal/Geothermal effects due to destruction in the Environment.</p> <p>g) Bio-geochemical processes and its foot prints including environmental stress</p> <p>h) Sediment geochemistry in the surface streams</p>	
Agriculture & Agro- Biodiversity		
13.	Impact on surrounding agricultural fields around the proposed mining Area.	Impact on surrounding agricultural fields around the proposed mining Area is discussed in Chapter 4 of the Draft EIA Report.
14.	Impact on soil flora & vegetation around the project site	Impact on soil flora & vegetation around the project site discussed in Chapter-4 of the Draft EIA Report.
15.	Details of type of vegetation no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	Type of vegetation no.of trees & shrubs is discussed in Chapter-3 of the Draft EIA Report.
16.	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	The biodiversity has been studied and discussed in chapter 3 of the Draft EIA Report.
17.	Action should specifically suggest for sustainable	Noted.

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	management of the area and restoration of ecosystem for flow of goods and services.	Agree to comply.
18.	The PP shall study and furnish the impact on plantations in adjoining Patta lands, Horticulture, Agriculture and livestock.	There is no plantation surrounding 500m from project site. Hence there won't be any impact in adjoining patta lands, Horticulture, Agriculture and livestock.
Forests		
19.	The PP shall detailed study on impact of mining on Reserve forests free ranging wildlife.	There is no Reserve Forest within 1 km radius of the Project Site. Hence our project will not cause any damage to reserve forest. Also, the DFO indicating the nearest reserve forest will be obtained from the concerned authority and the same will be submitted along with Final EIA Report.
20.	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	The biological environment impacts, and its mitigation measures has been given in Chapter 4 of the Draft EIA Report.
21.	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	There is no existing trees in the project site and surrounding the project site. Only thorny shrubs were present.
22.	The EIA should study impact on protected areas, Reserve forests, National parks, Corridors and Wildlife pathways, near project site.	There is no Reserve Forest within 1 km radius of the Project Site. Hence our project will not cause any damage to reserve forest. Also, the DFO indicating the nearest reserve forest will be obtained from the concerned

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		authority and the same will be submitted along with Final EIA Report There is no protected areas, National Parks, Corridors and Wildlife pathways near project site.
Water Environment		
23.	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc., within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data and documentation in this regard may be provided, covering the entire mine lease period.	The hydro-geological study will be conducted and submitted in Final EIA report.
24.	Erosion Control measures	Agreed to comply.
25.	Detailed study shall be carried out regard to impact of mining around the proposed mine lease area on the nearby villages, Water-bodies/Rivers, & any ecological fragile areas.	The detailed study will be carried out and will be furnished in the Final EIA Report.
26.	The project proponent shall study impact on fish habitats and the food WEB/food chain in the water body and reservoir.	There is no water bodies within 1km radius. Hence there won't be much impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
27.	The PP shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.	Noted and agreed to comply.
28.	The PP shall study and furnish the impact on	Noted.

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	aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site and archaeological sites possible landform changes visual and aesthetic impacts	Agreed to comply.
29.	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The soil erosion map 5km surrounding the project site has been given in chapter 3. The soil samples have been collected surrounding the project site and physical, chemical components and microbial components study has been carried out and the results are tabulated in chapter 3
30.	The Environmental Impact Assessment should study on wetlands, water bodies, river streams, lakes and farmer sites.	The water environment impacts and its mitigation measures has been given in Chapter 4
Energy		
31.	The measures taken to control Noise, Air, water. Dust control and steps adopted to efficiently utilise the Energy shall be furnished.	Noted. Agreed to comply.
Climate Change		
32.	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks, and temperature reduction including control of other emission and climate mitigation activities.	Noted and will be complied
33.	The Environmental Impact Assessment should	Noted and will be complied in Final

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	study impact on climate change, temperature rise, pollution and above soil carbon stock.	EIA report.
Mine Closure Plan		
34.	Detailed mine closure plan covering the entire mine lease period as per precise area communication order issued.	Mine closure plan has been attached as Plate No. VIII of the Mining plan.
EMP		
35.	Detailed Environment Management plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Environment Management Plan has been described in detail in Chapter-10 of the Draft EIA/EMP Report.
36.	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	The EMP details has been given in Chapter 8
Risk Assessment		
37.	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of mining.	A Risk Assessment and management Plan is prepared and included in the Draft EIA/EMP Report.
Disaster Management Plan		
38.	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazard & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Disaster Management and Risk Assessment has been incorporated in Chapter-7

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Others		
39.	The project proponent shall furnish VAO Certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures. railway lines, roads. water bodies such as streams, odai, vaari, canal, channel. river, lake pond, tank etc	The VAO certificate regarding the locations of habitations within 500 m radius from the periphery of the site has been obtained.
40.	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted and public hearing details will be included along with final EIA report.
41.	The Project Proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impact of plastic & microplastic on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	There will not be any plastic and microplastic pollution due to mining activity. Also, we ensure that we won't use any single use plastics in the project site.

ANNEXURE-II
PRECISE AREA COMMUNICATION LETTER

ANNEXTURE - I

ந.க.எண்.214/2018/கனிமம்

மாவட்ட ஆட்சியர் அலுவலகம்,
(புவியியல் மற்றும் சுரங்கத்துறை),
கிருஷ்ணகிரி மாவட்டம்,
கிருஷ்ணகிரி.
நாள்: 03.02.2018

07 MAY 2018

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - சிறுகனிமம் - சாதாரண கற்கள் கிருஷ்ணகிரி மாவட்டம் - குளகிரி வட்டம் - துப்புகானப்பள்ளி கிராமம் அரசு புல எண் 314 (பகுதி)ல் 4.94.32 ஹெக்டேர் பரப்பளவில் அரசு நிலத்தில் அமைந்துள்ள சாதாரண கற்குவாரிக்கு டெண்டருடன் இணைந்த ஏல முறையில் குத்தகை வழங்க டெண்டர்/பொது ஏலம் நடத்தப்பட்டது - பொது ஏலத்தில் அதிக தொகை கோரிய திரு. G.பெருமாள் த/பெ.கோபால், A14 தனி அட்கோ, தனி ரோடு, ஓசூர் 635 109, கிருஷ்ணகிரி மாவட்டம் என்பவருக்கு சாதாரண கற்குவாரி குத்தகை வழங்குதல் தொடர்பாக அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம், தமிழ்நாடு மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் தடையின்மைச் சான்று மற்றும் தமிழ்நாடு மாசு கட்டுப்பாட்டு வாரிய இசைவு ஆகியவற்றை பெற்று வழங்க கோருதல் - தொடர்பாக.

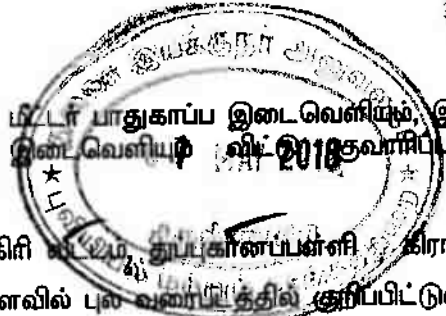
பார்வை:

1. கிருஷ்ணகிரி மாவட்ட அரசிதழ் சிறப்பு வெளியீடு எண்.01நாள்: 19.01.2018.
4. 03.02.2018 அன்று தினமணி நாளிதழில் வெளியிடப்பட்ட பத்திரிக்கை செய்தி.
2. திரு. G.பெருமாள் த/பெ.கோபால், A14 தனி அட்கோ, தனி ரோடு, ஓசூர் 635 109, கிருஷ்ணகிரி மாவட்டம் என்பவரது டெண்டர் விண்ணப்பம் நாள்: 07.02.2018.

கிருஷ்ணகிரி மாவட்டம், குளகிரி வட்டம், துப்புகானப்பள்ளி கிராமம் அரசு புல எண் 314 (பகுதி)ல் 4.94.32 ஹெக்டேர் பரப்பளவில் அமைந்துள்ள சாதாரண கற்குவாரிக்கு ஆண்டுகளுக்கு குவாரி குத்தகை வழங்குவது தொடர்பாக 07.02.2018 அன்று நடைபெற்ற பொது ஏலத்தில் திரு. G.பெருமாள் த/பெ.கோபால், A14 தனி அட்கோ, தனி ரோடு, ஓசூர் 635 109, கிருஷ்ணகிரி மாவட்டம் என்பவர் அரசு நிர்ணயம் செய்த குறைந்தபட்ச குத்தகை தொகையை விட அதிக தொகையான ரூ.4,62,00,000/- (ரூபாய் நான்கு கோடியே அறுபத்தி இரண்டு லட்சம் மட்டும்)ஐ பொது ஏலத்தில் கோரியதால் அவருக்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959ன் வதி 8(6)(b)-ன்படி அவருக்கு கீழ்க்கண்ட நிபந்தனைகளுடன் குவாரி குத்தகை வழங்க உத்தேசிக்கப்பட்டுள்ளது.

(i) குவாரி குத்தகை வழங்க உத்தேசிக்கப்பட்டுள்ள குவாரிக்கு அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளியும், அரசு நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும் விட்டு குவாரிப்பணி செய்யவேண்டும்.

(ii) அருகிலுள்ள கிராம சாலைகளுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும், இதர நெடுஞ்சாலைகளுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளியும் விதி 2018 குவாரிப்பணி செய்யவேண்டும்.



2. எனவே, கிருஷ்ணகிரி மாவட்டம், சூளகிரி வட்டம், துப்புகிண்பள்ளி கிராமம் புல எண் 314 (பகுதி) 4.94.32 ஹெக்டேர் பரப்பளவில் புல வரைபடத்தில் குறிப்பிட்டுள்ள பகுதியில் குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றும் நாளிலிருந்து பத்து ஆண்டுகளுக்கு சாதாரண கற்கள் வெட்டியெடுக்க குவாரி குத்தகை வழங்குதல் தொடர்பாக தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959ன் விதி 41 மற்றும் 42 ஆகியவற்றில் கண்டுள்ள காலவரையறைக்குள் அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம், தமிழ்நாடு மாநில சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையத்தின் இசைவு மற்றும் தமிழ்நாடு மாசுகட்டுப்பாட்டு வாரிய இசைவு ஆகியவற்றை சமர்ப்பிக்கவேண்டும் என திரு. G. பெருமாள் த/பெ.கோபால் என்பவருக்கு தெரிவிக்கப்படுகிறது.

3. உரிய காலத்தில் மேற்கண்ட ஆவணங்களை சமர்ப்பிக்க தவறினால் விதிகளின்படி உரிய நடவடிக்கை எடுக்கப்படும் எனவும், தெரிவிக்கப்படுகிறது.

4. மேற்கூறிய ஆவணங்களை சமர்ப்பித்த பின்பு குவாரி குத்தகை வழங்கப்பட்டு குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றிய பின்பே மேற்கண்ட புலத்தில் குவாரிப்பணிகளை தொடங்கவேண்டும். தவறினால் தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் 1959ன் விதி 36 (அ)ன்படி உரிய நடவடிக்கை எடுக்கப்படும் எனவும் தெரிவிக்கப்படுகிறது.

இணைப்பு : புல வரைபடம்.

மாவட்ட ஆட்சியர்,
கிருஷ்ணகிரி.

பெறுதல் :

திரு. G. பெருமாள் த/பெ.கோபால்,
A14 தனி அட்கோ, தனி ரோடு, ஓசூர் 635 109,
கிருஷ்ணகிரி மாவட்டம்

பதிவஞ்சலில் ஒப்புதல்
அட்டையுடன்

- நகல் : 1) தலைவர், கிருஷ்ணகிரி மாவட்ட சுற்றுச்சூழல் பாதிப்பு மதிப்பீட்டு ஆணையம், மாவட்ட ஆட்சியர் அலுவலகம், கிருஷ்ணகிரி.
2) ஆணையர், புவியியல் மற்றும் சுரங்கத்துறை, திரு.வி.க. தொழிற்போட்டை, கிண்டி, சென்னை - 32.

S. DHANASEKAR, M.Sc. (Geol)

RQP/MAS/225/2011/A

G. Perumal

ANNEXURE-III
MINING PLAN APPROVED LETTER

From

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

To

Thiru.G.Perumal,
S/o Gopal A-14,
Thally Hudco, Thally road,
Hosur Taluk - 635 109,
Krishnagiri Dist.

Roc.No. 214/2018/Mines Dated: 20.10.2023.

Sir,

Sub: Mines and Minerals - Minor Mineral - Rough Stone -
Krishnagiri District - Thuppuganapalli village -
Government Poramboke land in S.F.No.314 (Part-3)
over an extent 4.94.32 Hect - Rough Stone quarry
lease granted to Thiru.G.Perumal - Scheme of Mining
submitted for the 2nd five year period 2024-2025 to
2028-2029 (06.12.2024 to 05.12.2029) - Approved -
Reg.

- Ref:**
1. The District Collector, Krishnagiri
Proc.Rc.No.214/2018/Mines dated: 06.12.2019.
 2. Mining Plan approved by the Deputy Director of
Geology and Mining, Krishnagiri vide letter Rc.No.
214/2018/Mines dated: 07.05.2018.
 3. 1st Scheme of mining for the next five year period
from 2024-2025 to 2028-2029 submitted by the
lessee at District office on 27.09.2023.
 4. Joint Inspection reported by the Assistant Geologist
(Mines) and Sub Inspector of Surveyor (Mines),
dated : 04.10.2023.

Kind attention is invited to the references cited.

2) Thiru.G.Perumal, Krishnagiri has been granted Rough Stone
quarrying lease over an extent of 4.94.32 hecets of Government
Poramboke land in S.F.No. 314 (Part-3) of Thuppuganapalli Village,
Shoolagiri Taluk, Krishnagiri District for a period of 10 years under
TCA vide District Collector, Krishnagiri Proc. Rc.No. 214/2018 /Mines
dated: 06.12.2019, under the provisions of Rule 8 of Tamil Nadu
Minor Mineral Concession Rule 1959. The lease deed was executed on
06.12.2019 and the lease period is valid upto 05.12.2029.

3) The Mining plan for Rough Stone in Thuppuganapalli Village, Shoolagiri Taluk was approved by the Deputy Director of Geology and Mining, Krishnagiri vide letter Rc.No214/2018/Mines dated: 07.05.2018.

4) In this regard, the lessee has submitted the scheme of mining for the next five years period from 2024-2025 to 2028-2029.

5) As per the Scheme of Mining plan submitted for approval, it is mentioned that the total available geological reserves are calculated as 874879 Cbm with 100% recovery and after providing spaces for necessary benches the mineable reserves are calculated as 737960 Cbm @ 100% recovery upto a maximum of depth of 49.0 m.

6) As per the Scheme of Mining the year wise production for the proposed five years are as follows.

Year	Recoverable reserves @ (m³)	Top Soil
06.12.2024-05.12.2025	82085	6700
06.12.2025-05.12.2026	127580	131
06.12.2026-05.12.2027	145025	-
06.12.2027-05.12.2028	144640	-
06.12.2028-05.12.2029	238630	-
Total	737960	6831

7) The lessee had obtained transport permits for a quantity of 3,49,800 cbm rough stone upto 05.09.2023 as against the proposed production of 25,89,553 Cbm (for the Mining plan period from 2019-2020 to 2023-24)

8) The lessee has obtained Environment Clearance from DEIAA vide Lr.No.03/DEIAA-KGI/EC.No. 60/2018 dated: 27.08.2018 for a quantity of 2589553 Cbm of rough stone for the first five years.

9) During inspection conducted by Assistant Geologist (Mines) and Sub Inspector of Survey (Mines) Krishnagiri, it has found that the lessee has not maintained safety distance on southern side of the lease granted area. For the quarry operation carried in the safety zone they have obtained (111) relaxation and also for using heavy machineries they have obtained permission in DGMS vide No. 51250195 (SZ), Bengaluru Region/Perm/2023/256372 dated 21.08.2023. Besides this, the lessee has compiled terms and conditions stipulated in the proceedings and lease deed conditions. Further, there is no archeological monuments within 300 mts. radius and no wild life sanctuaries within 1.0 K.m. radius.


10) The draft Scheme of Mining submitted by Thiru.G.Perumal has been scrutinized as per the guide lines/ Instructions issued by the Commissioner of Geology and Mining, Chennai-32 vide letter Rc.No.3868/LC/2012 dated 19.11.2022. The Scheme of mining is prepared in accordance with the guidelines/ instructions issued.

11) Hence, in accordance with the TNMMCR 1959 and instructions issued by the Commissioner of Geology and Mining, Chennai, the said scheme of mining for the next five year 2024-2025 to 2028-2029 (06.12.2024 to 05.12.2029) submitted by the lessee Thiru.G.Perumal in respect of the area granted to quarry rough stone in Poramboke land S.F.No. 314 (Part-3) over an extent of 4.94.32 Hects is hereby approved in exercise of the powers conferred under Rule 41 (9) (iii) of TNMMCR 1959 subject to the following conditions.

- i. That the 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. This approval of the Scheme of mining does not in any way imply the approval of the Government in terms of any other provisions of Mines and Minerals Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act 1957, or any other connected Laws industry

- Forest (Conservation) Act 1980, Forest Conservation Rules 1981 Environment protection Act 1980, Indian Explosive Act 1884 (Central Act IV of 1884) and the rules made there under, Mineral Conservation and Development Rules 1988 and The Tamil Nadu Minor Mineral Concession rules, 1959.
- iii. This 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 and Regulation) Act, 1957, MMDR amendment Act, 2015 made there under shall be complied with.
 - vi. This approval of Scheme of Mining is restricted to the mining lease area only. The mining lease area is as shown on the statutory plan under TNMMCR Rules, 1959.
 - vii. The lessee should obtain environmental clearance from the appropriate authority.
 - viii. The earlier instances of irregular/illegal quarrying, if any shall not be regularized through the approval of this document.
 - ix. The lessee shall remit the penalty/ cost of mineral/ other dues if any as arrived by the District Collector/ Deputy Director of Geology and Mining, Krishnagiri District.
 - x. Non adherence to any condition set-out above, the approval shall be deemed to have been withdrawn with immediate effect.

Encl: 1.Scheme of Mining 3 Copies.


Deputy Director,
Dept of Geology and Mining,
Krishnagiri.

Copy to :-

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


BFS
20/10/23

ANNEXURE-IV
500M RADIUS LETTER

From

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

To

Thiru.G.Perumal, S/o Gopal,
A-14,Thally Hudco, Thally road,
Hosur Taluk – 635 109,
Krishnagiri Dist.

Roc.No.214/2018/Mines Dated: .10.2023

Sir,

Sub: Mines and Minerals – Rough stone - Krishnagiri District - Shoolagiri Taluk – Thuppuganapalli village – Government land in S.F.No.314 (Part-3) over an extent 4.94.32 Hects – Tender Cum Auction conducted – Thiru.G.Perumal declared as highest tenderer – Approved Mining Plan and Environmenty Clearance obtained – Lease granted – Other quarry situated in 500 mtrs radial distance – Details furnished - reg.

- Ref:**
1. The District Collector, Krishnagiri Proc.Rc.No.214/2018/Mines dated: 06.12.2019.
 2. Mining Plan approved by the Deputy Director of Geology and Mining, Krishnagiri vide letter Rc.No. 214/2018/Mines dated: 07.05.2018.
 3. Thiru.G.Perumal letter dated: 04.08.2023.

Kind attention is invited to the references cited above.

2) Thiru.G.Perumal, Krishnagiri has been granted Rough Stone quarrying lease over an extent of 4.94.32 hecets of Government land S.F.No. 314 (Part-3) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District for a period of 10 years vide The District Collector, Krishnagiri Proc. Rc.No. 214/2018 /Mines dated: 06.12.2018, under the provisions of Rule 8 of Tamil Nadu Minor Mineral Concession Rule 1959. The lease deed was executed on 06.12.2019 and the lease period is valid upto 05.12.2029.

3) The Mining plan for Rough Stone in Thuppuganapalli Village, Shoolagiri Taluk was approved by the Deputy Director of Geology and Mining, Krishnagiri vide letter Rc.No214/2018/Mines dated: 07.05.2018.

4) In this connection, the lessee Thiru.G.Perumal, has requested vide letter dated: 04.08.2023 to issue the details of other quarries situated within 500 mts radial distance from the subject quarry is furnished as follows.

I. Details of Existing quarries.

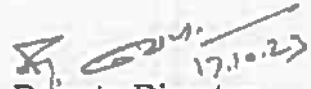
Sl No	Name of the lessee	ROC .NO. dated	Village & Taluk	S.F No.	Extent in Het	Lease period.
1.	Thiru.G.Perumal, S/o Gopal, A-14,Thally Hudco, Thally road, Hosur Taluk - 635 109, Krishnagiri Dist.	Rc.No.214/2018 /Mines dated: 6.12.2018.	Thuppugana palli Village, Shoolagiri Taluk	314 (Part - 3)	4.94.32	06.12.2019 to 05.12.2029
2.	Thiru.G.Perumal, S/o Gopal, A-14,Thally Hudco, Thally road, Hosur Taluk - 635 109, Krishnagiri Dist.	Rc.No.97/2016 /Mines dated: 04.08.2016.	Thuppugana palli Village, Shoolagiri Taluk	314 (Part - 1)	3.00.0	10.08.2016 to 09.08.2026

II. Details of abandoned/Old quarries.

Sl. No.	Name of the lessee	ROC dated .NO.	Village & Taluk	S.F No.	Extent in Het	Lease period.
1.	Thiru.G.Perumal, S/o Gopal, A-14,Thally Hudco, Thally road, Hosur Taluk - 635 109, Krishnagiri Dist.	Rc.No.703/2005 /Mines-2 dated: 12.08.2015.	Thuppuganapalli Village, Shoolagiri Taluk	314 (Part - 2)	5.00.0	12.09.2005 to 11.09.2015

III. Details of other Proposed/applied quarries

Sl. No.	Name of the lessee	ROC.NO. dated	Village & Taluk	S.F No.	Extent in Het	Lease period.
1	----- Nil -----					


Deputy Director,
Dept of Geology and Mining,
Krishnagiri.

Copy to :-

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

ANNEXURE-V
MINING PLAN REPORT & PLATES

SCHEME OF MINING

WITH

PROGRESSIVE MINE CLOSURE PLAN

FOR

ROUGH STONE QUARRY

(Prepared Under Rule 12 of MMCDR 1988 (as amended upto 02.08.2011)
& as per the amendments Under Rule 41 & 42 of TNMMCR, 1959)



PERIOD OF SCHEME OF MINING WITH PMCP: 2024-2025 to 2028-2029

EXTENT : 4.94.32 HA.
S.F.No. : 314 (PART-3)
VILLAGE : THUPPUGANAPALLI
TALUK : SHOOLAGIRI
DISTRICT : KRISHNAGIRI
STATE : TAMIL NADU

LESSEE
THIRU. G. PERUMAL,
S/o. GOPAL,
A-14, THALLY HUDCO
THALLY ROAD,
HOSURT TALUK,
KRISHNAGIRI DISTRICT- 635 109.

PREPARED BY:
S. DHANASEKAR, M.SC.,
QUALIFIED PERSON,
NO. 5/30-7 B, AVVAI NAGAR,
PONKUMAR MINES ROAD,
JAGIR AMMAPALAYAM,
SALEM DISTRICT - 636 302.

E-mail: geodhana@yahoo.co.in
CELL: 98948 28970 & 73733-74702.

G. Perumal,
S/o. Gopal,
A-14, Thally Hudco,
Thally Road,
Hosur Taluk,
Krishnagiri District -635 109.



CONSENT LETTER FROM LESSEE

I hereby give my consent for preparing the Scheme of Mining with Progressive Mine Closure Plan in respect of Rough Stone Quarry over an extent of 4.94.32 Ha. in S.F. No.314 (Par3) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu State has been prepared by Shri. S. DHANASEKAR, M.Sc., Qualified Person.

I request the Department of Geology and Mining, Krishnagiri to make further correspondence regarding modification of the Scheme of Mining with Progressive Mine Closure Plan with the said Qualified Person in his following Address:

S.DHANASEKAR, M.Sc.,
Qualified Person

No.5/30-7B, Avvai Nagar,
Ponkumar Mines Road,
Jagir Ammapalayam,
Salem District-636 302.

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 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.

Place: Krishnagiri
Date:

G. Perumal
(G. Perumal)
Signature of the Lessee

G. Perumal,
S/o. Gopal,
A-14, Thally Hudco,
Thally Road,
Hosur Taluk,
Krishnagiri District - 635 109.



DECLARATION OF THE MINE OWNER

I hereby declare that the Scheme of Mining with Progressive Mine Closure Plan in respect of Rough Stone Quarry over an extent of 4.94.32 Ha. in S.F. No.314 (Part-3) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu State has been prepared in full consultation with us by **Shri S. DHANASEKAR, M.Sc.,** Qualified Person. I have understood its contents and agree to implement the same in accordance with Laws applicable to mines.

G. Perumal
(G.Perumal)
Signature of the Lessee

Place: Krishnagiri

Date:

S.Dhanasekar.M.Sc.,(Geol),
Qualified Person,

No.5/30-7B, Avva Nagar,
Ponkumar Mines Road,
Jagir Ammapalayam
Salem- 636 302



CERTIFICATE

This is to certify that, the provisions of Minor Minerals Conservation and Development Rules, 2010 (MMCDR) have been observed in the Scheme of Mining with Progressive Mine Closure Plan for Thuppuganapalli Rough Stone Quarry over an extent of 4.94.32 Ha. in S.F. No.314 (Part-3) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu State prepared for Thiru. G.Perumal S/o. Gopal, A-14, Thally Hudco, Thally Road, Hosur Taluk, Krishnagiri District - 635 109.

Whenever specific permissions, approvals, exemptions or relaxations are required, the lessee will approach the concerned authorities of Commissioner of Geology and Mining, Government of Tamil Nadu, Guindy, Chennai- 600 032, Tamil Nadu 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 Qualified Person.
S. DHANASEKAR, M.Sc., (Geo)
Qualified Person

Place: SALEM

Date:

S.Dhanasekar.M.Sc.,(Geol),
Qualified Person,

No.5/30-7B, Avvai Nayanar Street,
Ponkumar Mines Road,
Jagir Ammapalayam,
Salem- 636 303




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 Ittikal Agaram Rough Stone Quarry over an extent of 3.25.0 Ha. in S.F. No.161 (Part) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu State prepared for Thiru. G. Perumal S/o. Gopal, A-14, Thally HUDCO, Thally Road, Hosur Taluk, Krishnagiri District - 635 109.

Whenever specific permissions, approvals, exemptions or relaxations are required, the lessee will approach the concerned authorities of the Director General of Mines Safety (DGMS), 5/46, 2nd Street, Lapis Lagoon, AA Block, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu-600 040, for such permissions, exemptions, relaxations and approvals.

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 Qualified Person.
S. DHANASEKAR, M.Sc., (Geo)
Qualified Person

Place: SALEM

Date:



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**SCHEME OF MINING
WITH
PROGRESSIVE MINE CLOSURE PLAN
FOR
THUPPUGANAPALLI ROUGH STONE QUARRY**



(Prepared Under Rule 12 of MMCDR, 1988(as amended upto 02.08.2011) & as per the
amendments Under Rule 41 & 42 of TNMMCR, 1959)

1.0 General:

The Scheme of Mining along with Progressive Mine Closure Plan has been prepared in respect of Rough Stone Quarry in Government Land over an extent of 4.94.32 Ha. in S.F. No.314 (Part-3) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamil Nadu State prepared for Thiru. G.Perumal S/o. Gopal, A-14, Thally Hudco, Thally Road, Hosur, Krishnagiri -635 109.

The fresh Mining Plan was approved by Deputy Director, Geology and Mining, Krishnagiri vide letter Roc No. 214/2018/Mines dated: 07.05.2018 for a period of Five years from 2019-2020 to 2023-2024. Please refer Annexure-IX. Copy of Approved Mining plan Letter.

Accordingly, the Lessee had obtained Environmental Clearance from DEIAA-KGI vide order Lr. No.03/DEIAA-KGI/Ec.No.60/2018 dated 27.08.2018. Please refer Annexure- III.

The lease deed executed on 06.12.2019. Mining operation commenced on 15.06.2020. The lease will expire on 05.12.2029.

Consent to operate was granted under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) vide Proceedings No.F.1863HSR/RS/DEE/TNPCB/HSR/A/2020 dated 26.03.2020. & Consent to operate was granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) vide Proceedings No.F.1863HSR/RS/DEE/TNPCB/HSR/W/2020 dated 26.03.2020.

This Scheme of Mining for the period 2024-2025 to 2028-2029 is now being prepared and submitted under Rule 12 of MMCDR, 1988(as amended upto 02.08.2011) and 41 & 42 of TNMMCR, 1959 for approval.

The mining operations were done by opencast semi-mechanized methods with jackhammer drilling and blasting, hydraulic excavators were used for loading the Rough stone from pithead to the needy crushers. Recently the Directorate General of Mines Safety vide letter No.51250195/SZ/Bengaluru Region/Perm/2023/256372 dated 21.08.2023 permitted the lessee to work with Heavy Earth Moving Machinery (HEMM) with Deep Hole Drilling (100mm) & Blasting with in the lease hold area. The Common Boundary with survey No.314 (Part-1) with an extent of 3.0.0 Ha. is also approved with certain conditions. Please refer Annexure- X.



S. DHANASEKAR, M.Sc., (Gen)

Qualified Person (G. Perumal)

1.1. Review of Mining Plan:

a) Name of lessee : Thiru. G. Perumal
Address : S/o.Gopal,
A-14, Thally Hudco,
Thally Road,
Hosur Taluk,
Krishnagiri District-635 109.
District : Krishnagiri
State : Tamil Nadu
Pin code : 635 109.



b) Status of lessee

The lessee is an 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:

Rough Stone occurs in the lease area and the Lessee intends to quarry the same.

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

Rough Stone occurs in the lease area and the Lessee intends to quarry the same.

f) Name and Address of the Qualified Person:

Name : SHRI S. DHANASEKAR, M.Sc.,
Address : Qualified Person
No.5/30 7B, Avvai Nagar,
Ponkumar Mines Road
Jagir Ammapalayam,
Salem - 636 302.
Cell No. : 98946-28970 & 73733-74702.
Email : geodhana@yahoo.co.in

2.0 LOCATION AND ACCESSIBILITY

a) Lease Details (Existing Quarry)

Name of the Quarry : Thuppuganapalli Rough Stone Quarry
Latitude of boundary point : 12° 36' 53.0353" N to 12° 36' 45.6499" N
Longitude of boundary point : 77° 55' 25.4549" E to 77° 55' 18.3602" E
Date of grant of lease : 06.12.2019
Period/Expiry Date : 05.12.2029.

Name of leaseholder : Thiru.G.Perumal
 Postal Address : S/o.Gopal,
 A-14, Thally Hudco,
 Thally Road,
 Hosur Taluk,
 Krishnagiri District-635 109.
 Tamil Nadu.



b) Details of lease area with location map (Quarry)

Table-1

Forest (specify)	Area (Ha.) -NIL-	i) Waste land	Nil
		ii) Grazing land	Nil
		iii) Agriculture land	Nil
		iv) Others, Government Land (specify)	4.94.32 Ha.

Total lease area : 4.94.32 Ha
 State : Tamil Nadu
 District : Krishnagiri
 Taluk : Shoolagiri
 Village : Thuppuganapalli
 Whether the area is recorded : This is Government Land and is not covered
 to be in forest in Forest area of any kind.

Please refer Location Plan and Mine lease plan – Plate No. I & II.

c) 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 Krishnagiri is at a distance about 42.5 Km. from quarry site. The area is at a distance of about 3.0 kms from Uddanapalli Village. Hosur - Royakottai (Main Road) is at a distance of about 1.0 kms Eastern side of the lease area.

Nearest Railhead is Kelamangalam Railway Station that is located about 10.0 kms from the Quarry. Post office & Police Station are available in uddanapalli at a distance of about 3.0Kms. Air Port is available in Bangalore, about 94.0 kms. from the Quarry. Nearest Port is Chennai about 303.0 kms. from the area.

G Perumal

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

Table No:2

Toposheet No	:	No. 57 – H/14
Latitude	:	12° 36' 53.0353" N to 12° 36' 45.6499" N
Longitude	:	77° 55' 25.4549" E to 77° 55' 18.3602" E
North East	:	12° 36' 53.0353" N 77° 55' 25.4549"E
South East	:	12° 36' 48.9992" N 77° 55' 21.7755"E
North West	:	12° 36' 55.2922" N 77° 55' 16.8167"E
South West	:	12° 36' 45.6499" N 77° 55' 18.3602"E



e) 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 shown on the Toposheet Plan (Key Plan) which is enclosed as 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. : Topo Sheet No.57 H/14
Latitude : 12° 36' 53.0353" N to 12° 36' 45.6499" N
Longitude : 77° 55' 25.4549" E to 77° 55' 18.3602" E

f) Land use pattern:

Dry Mineral bearing land.

g) Location of the Area:

3.0 DETAILS OF APPROVED MINING PLAN/SCHEME OF MINING:

The area for quarrying lease of Thuppuganapalli Rough Stone Quarry is located in S.F.No. 314 (Part-3) Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District Tamil Nadu State over an extent of 4.94.32.Ha.

3.1 Date and reference of earlier approved MP:

The fresh Mining Plan was approved by Deputy Director, Department of Geology and Mining, Krishnagiri vide letter Roc No. 214/2018/Mines dated 07.05.2018 for a period of Five years 2019-2020 to 2023-2024. Please refer Annexure-IX. Copy of Approved Mining plan Letter.

G. Parimal

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

-Nil-

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

i) Exploration:

In the previous approved Mining Plan, it was mentioned that no exploration was carried out. Massive rough stone exposures were clearly visible in the lease area.

Present Mine working had reached a depth of about 16.0m.

There are four working pits available in this area, the dimensions of which are given below:

Table No.3

Pit Nos	Area In Sqm	Depth in (m)
Pit-I	240	3
Pit-II	295	5
Pit-III	312	9
Pit-IV	21415	16

The area is very small. The attitude of the deposits like width and length are clearly known. Depth persistence of Rough Stone in this area is already proved upto 16.0m.

ii) Mine Development:

The Mine workings have reached a depth of nearly 16.0m. Development of the pits has been done only in the areas where the Rough Stone could be easily mined.

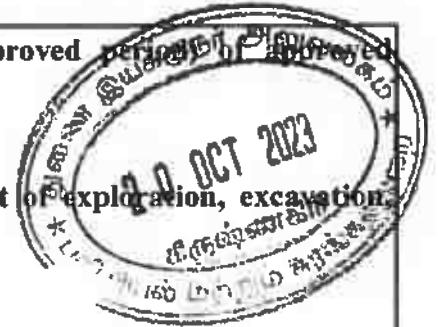
iii) Exploitation:

The Quarry workings have reached a depth of nearly 16.0m.

There are four working pits, the dimensions of which are given below:

Table No.4

Pit Nos	Area In Sqm	Depth in (m)
Pit-I	240	3
Pit-II	295	5
Pit-III	312	9
Pit-IV	21415	16



The Planned and Actual Production for last approved Mining Plan period figures are given as follows:

Table No.5

YEAR	PLANNED(Cu.m) ROUGH STONE	ACTUAL(Cu.m) ROUGH STONE
06.12.2019 - 05.12.2020	502243	36000
06.12.2020 - 05.12.2021	541052	70800
06.12.2021 - 05.12.2022	569968	129600
06.12.2022 - 05.12.2023 (Up to - 05.09.2023)	564858	113400
06.12.2023 - 05.12.2024	411432	-
TOTAL	2589553	349800



iv) Waste Management:

In the Previous approved Mining Plan Period, there is no generation of waste as there is 100% recovery.

v) Reserves and Resources estimated in the earlier approved mining plan period (2019- 2020 to 2023-2024) with grade:

Geological Reserve (insitu) under Proved category : 9147717cu.m
 Mineable Reserve : 4992352 cu.m
 Year wise Production : 2589553 cu.m

While calculating Mineable Reserve, the boundary barrier and bench width, height and slope are taken into account. Hence, the Mineable Reserve will be always less than the insitu reserve.

vi) Depletion of Reserve:

The actual production of Rough Stone for the last five years (2019-2020 to 2023-2024) is about 349800cu.m of saleable Rough Stone.

vii) Afforestation and Reclamation:

Presently, lessee had planted some trees in the lease area in scattered manner. Since, the Quarry is active. Mining should be carried out in such a manner that after certain period, some part is available for reclamation.

viii) Control of Dust, Noise & Ground Vibrations:

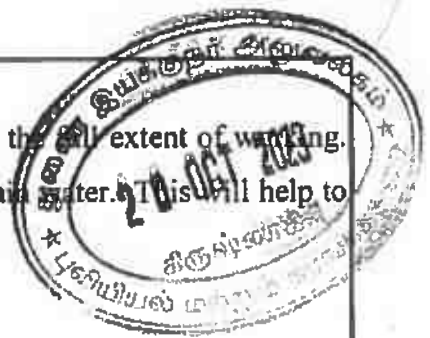
Quarrying of Rough Stone had been carried out by drilling and control blasting by using low power explosives, and hence, noise will be very minimum.

The dust control was taken care by water sprinkling on the haul roads. The amount of ground vibration is very less since only control blasting by using low power explosives is used.

G. Parimal

Reclamation & Rehabilitation:

Reclamation of mined out area does not arise and has not reached the full extent of working. 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.



PART - 'A'

1.0 GEOLOGY AND EXPLORATION

A) Briefly Describe the Topography, Drainage Pattern, Vegetation, Climate, Rainfall Data of the Area Applied/Mining Lease Area:

a) Topography:

The Mining Lease area is approximately at 12° 36' 53.0353" N to 12° 36' 45.6499" N latitude and 77° 55' 25.4549" E to 77° 55' 18.3602" E longitude and is represented by Topo Sheet No.57 H/14 of Survey of India.

The lease area is a Hilly terrain and sloping towards NorthEastern side. The general trend of formation is NW – SE and dip towards NE-60°. The altitude of the area is about 822m MSL.

Vegetation:

It is a dry Mineral bearing. It is a dry place with a Top Soil cover of about 1.0m.

Water table and Drainage Pattern:

Water table is touched at a depth of 86m in rainy season, ie. during North-East monsoon and at 90m in summer months. The water table fluctuation is verified by observing the water levels in the above seasons in the nearby wells.

Climatic Conditions:

The area receives rainfall of about 800mm to 900mm per annum and the rainy season is mainly from October-January during Northeast Monsoon. The summer is hot with maximum temperature of 38°C and winter encounters a minimum temperature of 18°C.

Rainfall Data:

The area receives scanty rainfall and the annual rainfall of the area varies between 800mm to 900mm.

G. Parimal



b) Geology of the Area:

The lease area is Hilly terrain and sloping towards NorthEastern side. The area has been quarrying operation earlier. Rough stone exposures are clearly visible in existing pit within the lease area. Top Soil are noticed at the average thickness of 1m. The slope is gentle towards North Eastern side. The altitude of the area is above 822m from MSL.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of charnockite lies over with rich accumulation of recent quaternary formation. On regional scale the charnockite body trends NW – SE with dipping towards NE-60°.

The general geological sequences of the rocks in this area are given below

AGE	FORMATION
Recent	Quaternary Recent (Top Soil)
Archaean	Charnockite (Granitoid Gneiss)
	Peninsular Gneiss Complex II.

c) Details of Exploration already carried out:

The area was thoroughly explored by the Qualified Person and his geological team. Massive rough stone exposures are clearly visible from the existing pit within the lease area.

In this area, the mine working has reached a depth of about 16.0m.

There are four working pits available in this area, the dimensions of which are given below:

Table No.6

Existing Pit Details		
Pit Nos	Area In Sqm	Depth in (m)
Pit-I	240	3
Pit-II	295	5
Pit-III	312	9
Pit-IV	21415	16

The area is very small. The attitude of the deposits like width and length are clearly known. Depth persistence of Rough Stone in this area is already proved upto 16.0m.

d) The Physical Character of the Rough Stone:

Rough stone texture is medium to coarse grained and is composed of recrystallized minerals, hence it is a metamorphic rock. The grains are subhedral, inequigranular, with a granoblastic texture. The grains are crystalline ie. Complete crystallization has occurred. Cleavage is absent. The color is dark olive green. The details collected during the field survey and found to be sufficient for the preparation of the Scheme of Mining with PMCP.

G. Parimal

e) Number of boreholes indicating type (Core/RC/DTH), diameter, spacing, inclination, Collar level, depth etc... with standard bore hole logs duly marking on

Nil



f) RESERVES :

a. Method of Estimation of Reserves:

The Geological and Recoverable reserves are estimated by cross sectional method up to a depth of 49.0m (1.0m Top Soil+ 48.0m Rough Stone). Plans and Sections have been drawn with a scale of 1:1000 respectively.

Selecting a method of reserve estimation depends upon the geology of the mineral deposit, exploration method, purpose of computation and the required degree of accuracy and also on the contemplated mining system.

The ideal method should be simple, rapid, reliable, consistent with the character of the mineral body and available data and suitable for rapid checking. The method adopted for calculation of reserves in this area is by computing the volume by cross sectional method upto a particular level. The volume is calculated by multiplying the cross-sectional area with the length of the sectional influences.

The details of estimation of Geological Reserves and Mineable Reserves with reference to the Geological Plan & Cross section and Conceptual Plan & Section as shown in (Plate No.III &III-A and VII & VII-A) respectively.

b. GEOLOGICAL RESERVES:

The Geological reserve of Rough Stone and Top Soil is calculated upto a depth of 49.0m (1.0m Top Soil + 48.0m Rough Stone). Total Geological reserve is estimated at 874879 Cu.m by area cross sectional method.

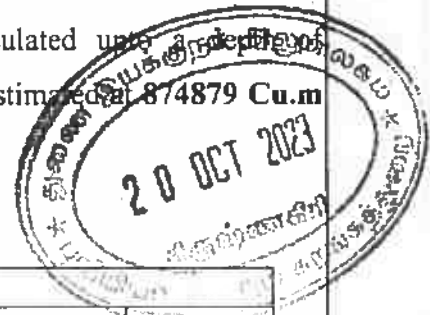


Table No.7

GEOLOGICAL RESERVES							
Section	Bench	L (m)	W (m)	D (m)	Volume in (m3)	Geological Reserves in m3 (100%)	Top Soil in m3
XY-AB	I	120	77	1			9240
	II	34	35	5	5950	5950	
	III	60	45	5	13500	13500	
	IV	69	50	5	17250	17250	
	V	76	55	5	20900	20900	
	VI	83	59	5	24485	24485	
	VII	239	101	5	120695	120695	
	VIII	273	105	5	143325	143325	
	IX	277	110	5	152350	152350	
	X	277	114	5	157890	157890	
	XI	277	114	3	94734	94734	
Total=					751079	751079	9240
X1Y1-AB	I	1	131	1			131
	II	81	17	5	6885	6885	
	III	93	35	5	16275	16275	
	IV	104	52	5	27040	27040	
	V	116	70	5	40600	40600	
	VI	125	88	3	33000	33000	
Total=					123800	123800	131
Grand Total=					874879	874879	9371

Top Soil = 9371 cu.m
 Total Geological Reserves in ROM = 874879 cu.m
 Recoverable Reserves @ 100% = 874879 cu.m

G. Parimal

C. MINEABLE RESERVES:

The Mineable reserves are calculated by deducting 10.0m Safety distance & Bench Loss. The Mineable Reserve is calculated upto a depth of 49.0m (1.0m Top Soil+ 48.0m Rough Stone)

Table No.8

MINEABLE RESERVES							
Section	Bench	L (m)	W (m)	D (m)	Volume in (m3)	Mineable Reserves in m3 (100%)	Top Soil in m3
XY-AB	I	100	67	1			6700
	II	34	35	5	5950	5950	
	III	60	45	5	13500	13500	
	IV	69	50	5	17250	17250	
	V	76	55	5	20900	20900	
	VI	83	59	5	24485	24485	
	VII	239	101	5	120695	120695	
	VIII	250	103	5	128750	128750	
	IX	240	98	5	117600	117600	
	X	230	93	5	106950	106950	
	XI	220	88	3	58080	58080	
Total=					614160	614160	6700
XIYI-AB	I	1	131	1			131
	II	81	17	5	6885	6885	
	III	93	35	5	16275	16275	
	IV	104	52	5	27040	27040	
	V	116	70	5	40600	40600	
	VI	125	88	3	33000	33000	
Total=					123800	123800	131
Grand Total=					737960	737960	6831

Top Soil = 6831 cu.m

Total Mineable Reserves in ROM = 737960 cu.m

Recoverable Reserves 100% = 737960 cu.m

The geological reserves computed based on the geological cross sections up to the economically workable depth of 49m (1.0m Top Soil + 48.0m Rough Stone) works out to 874879cu.m (100% recovery) (Table-7) and mineable reserves have been computed as 737960cu.m (Table-8) at the rate of 100% recovery upto a depth of 49.0m (1.0m Top Soil+ 48.0m Rough Stone). (Refer plate No.VII & VII-A). The above projections are for the Next Five years plan period.

Mineable reserves have been computed as 737960 cu.m at the rate of 100% recovery up to a depth of 49m (1.0m Top Soil + 48.0m Rough Stone). The Mineable reserves are calculated by deducting 10.0m Safety distance & Bench Loss.

G. Parimal

2.0 MINING

A. Open Cast Mining

a) Briefly describe the existing as well as proposed method for excavation with all design parameters indicating on plans / sections:-

Existing method:

The mining operations are done by opencast semi-mechanized methods with jack-hammer drilling and blasting, hydraulic excavators are used for loading the Rough stone from pithead to the needy crushers.

There are four existing working pits, the dimensions of which are given below :

Table No.9

Existing Pit Details		
Pit Nos	Area In Sqm	Depth in (m)
Pit-I	240	3
Pit-II	295	5
Pit-III	312	9
Pit-IV	21415	16

Proposed method:

The quarry is proposed to carry out mining operation with mechanized opencast method. Recently the Directorate General of Mines Safety vide letter No.51250195/SZ/Bengaluru Region/Perm/2023/256372 dated 21.08.2023 permitted the lessee to work with Heavy Earth Moving Machinery (HEMM) with Deep Hole Drilling (100mm) & Blasting with in the lease hold area. The Common Boundary with survey No.314 (Part-1) with an extent of 3.00.0 Ha. is also approved with certain conditions.

The quarry operation involves HEMM with Deep Hole drilling, blasting, excavation, loading and transportation of Rough Stone.

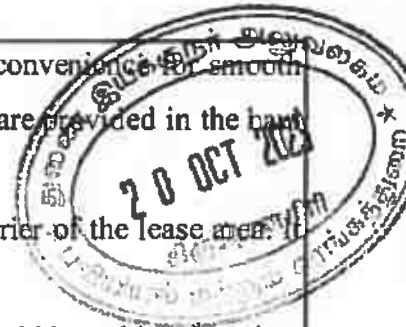
The operation will be confined to general shift only ie. from 8.00 AM to 4.00 PM with one hour lunch interval between 12.00 PM to 1.00 PM.

In Top Soil, a bench will be 1.0m height and width with 45° slope.

The Rough Stone, totally Nine benches will be of 5.0m height and 5.0m width and one bench will be of 3m height for next Five years only. Please refer Plate No. IV & IV-A. The advancement of the pit will be from boundary towards middle side of the lease area for the next Five years. Please refer Plate No.IV.

A bund will be constructed around the pit to prevent accident call and inrush of rainwater. Proper footpaths are provided between benches for easy accessibility for workers.

Haul roads, to conform to statutory standards are made according to convenience for smooth transport of Rough stone and waste. Wherever necessary, crossing platforms are provided in the haul roads at suitable point for safe crossing as tractors, tippers, trucks etc.



The Top Soil formation will be dumped at western side boundary barrier of the lease area. It will be utilized for afforestation & road low lying purpose.

Average annual production is about 147592 cum of Rough Stone with 300 working days in a year. Considering the nature of the deposit and the anticipated daily production level, mechanized mining is proposed.

A boundary barrier of 10.0m width are maintained as per statute. Rough Stone locked up in this barrier will be excavated as per permission from DGMS under Regulation 111 of Mines and Mineral Regulation, 1961. The sequence of working for the next Five years is indicated in Plate No. IV and the rate of production is given in Table No.11.

b) Indicate Year-Wise Tentative Excavation in Cu.m indicating Production & development, ROM, pit wise as in table below.

i) Planned Development for next Five years is given below :

Top Soil of the lease area is 6831m³. The Top Soil formation will be dumped at western side of lease area. It will be utilized for afforestation & road low lying purpose.

ii) Planned Production for next Five years is given below :

The proposed rate of production of Rough Stone is about 737960 cu.m for Five Years at the rate of 100% recovery up to 49m depth (1m Top Soil+ 48m Rough Stone).

Table No.10

Year	ROM Cu.m	Production 100% (cu.m)
06.12.2024 - 05.12.2025	82085	82085
06.012.2025 - 05.12.2026	127580	127580
06.12.2026 - 05.12.2027	145025	145025
06.12.2027 - 05.12.2028	144640	144640
06.12.2028 - 05.12.2029	238630	238630
TOTAL	737960	737960

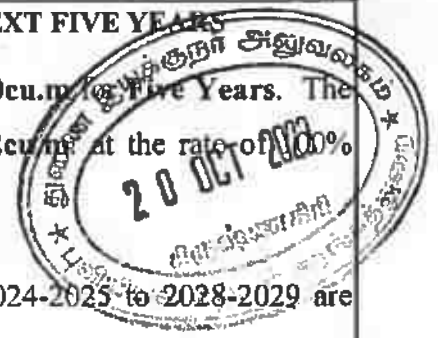
From Total ROM the Rough Stone deposits are categorized with the following percentage.
Rough stone: 100% .

The average production of Rough Stone per year will be about 147592cu.m. Please refer Table No.11 and Plate No.IV.

G. Parimal

iii) YEARWISE DEVELOPMENT & PRODUCTION SCHEDULE FOR NEXT FIVE YEARS

The proposed rate of production of Rough Stone is about 737960cu.m for Five Years. The average proposed rate of production of Rough Stone is about 147592cu.m at the rate of 100% recovery up to a 49m depth (1m Top Soil+ 48m Rough Stone).



The proposed Production & development for next Five years 2024-2025 to 2028-2029 are given below :

Table – 11

YEARWISE DEVELOPMENT AND PRODUCTION								
Year	Section	Bench	L (m)	W (m)	D (m)	Volume in (m3)	Recoverable Reserves in m3 (100%)	Top Soil in m3
06.12.2024 - 05.12.2025	XY-AB	I	100	67	1			6700
		II	34	35	5	5950	5950	
		III	60	45	5	13500	13500	
		IV	69	50	5	17250	17250	
		V	76	55	5	20900	20900	
		VI	83	59	5	24485	24485	
Total=						82085	82085	6700
06.12.2025- 05.12.2026	XY-AB	VII	239	101	5	120695	120695	
	X1Y1-AB	I	1	131	1			131
		II	81	17	5	6885	6885	
Total=						127580	127580	131
06.12.2026- 05.12.2027	XY-AB	VIII	250	103	5	128750	128750	
	X1Y1-AB	III	93	35	5	16275	16275	
Total=						145025	145025	
06.12.2027- 05.12.2028	XY-AB	IX	240	98	5	117600	117600	
	X1Y1-AB	IV	104	52	5	27040	27040	
Total=						144640	144640	
06.12.2028 - 05.12.2029	XY-AB	X	230	93	5	106950	106950	
		XI	220	88	3	58080	58080	
	X1Y1-AB	V	116	70	5	40600	40600	
		VI	125	88	3	33000	33000	
Total=						238630	238630	
GRAND Total =						737960	737960	6831

Top Soil = 6831 cu.m
 Total Reserves = 737960 cu.m
 Recoverable Reserves @ 100% = 737960 cu.m

ROM: The material excavated from mineralized zone and includes mineral reject and useable mineral component.

OB: Means overburden capping waste.

G. Parimal

iv) Estimated Life of the quarry

Mineable ROM	= 737960 cu.m
Mineable Reserves @ 100%	= 737960 cu.m
Average production (Rough Stone) per year @ 100%	= 147592 cu.m
Estimated Life of the Quarry = $737960 / 147592$	= 5.0 years

Life = 5 years

The average proposed rate of production of Rough Stone is about 147592 cu.m per year.

v) Proposed Rate of Production When The Quarry Is Fully Developed

The proposed rate of production when the quarry is fully developed is 737960m³ for next Five years and 147592m³ per annum. (Table-11) The production schedule for the subsequent five year is drawn mainly in consideration of reserves position, market demand and the cost of production.

vi) Mineable Reserves and Anticipated Life of Mine

The Rough Stone is Massive in nature. The depth persistence of the Rough Stone will be beyond the economically workable depth. An optimum depth of 49.0m (1.0m Top Soil+ 48.0m Rough Stone) for entire lease period has been established as economically viable depth. Eventually this depth is the optimum depth for safe and scientific quarrying.

The mineable reserves are calculated by excluding the mining loss due to formation of benches, ultimate depth of mine, the mineral reserve held up within the safety distances all along the boundary of quarry lease applied area.

The mineable reserves for this Rough stone is thus arrived as 737960cu.m (Table-8) for an assumed depth of 49m from top surface (1.0m Top Soil + 48.0m Rough Stone). The details of estimation of five years development & production plan (plate no. IV) is furnished in Table-11. The average rate of production of Rough Stone from this quarry is 147592cu.m per year and mineable recoverable reserves 737960cu.m.

Based on the above, and taking into consideration of the available Mineable Reserves, the life of mine will be about 5 years, if the quarry is being worked continuously with prevailing market conditions and according to this Scheme of mining period.

c). Composite development plans showing pit layouts, dumps, stacks of mineral reject, if any, etc. and year wise sections in case of 'B' category mines:

A composite development year wise Plan and Sections are shown in Plate Nos. IV & IV-A. The details are furnished in Table-11. The average annual production of Rough Stone per year will be about 147592 cu.m.



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20 OCT 2023

d). Describe briefly giving salient features of the proposed method of working Indicating

Category of mine:

The quarry is proposed to carry out mining operation with Mechanized open cast method. The quarry operation involves Heavy Earth Moving Machinery (HEMM) with Deep Hole Drilling (100mm) & Blasting, excavation, loading and transportation of Rough Stone. The removal of blasted Rough Stone material is loaded into 10 MT capacity trucks with the help of hydraulic excavators.

Extent of Mechanization:

The mine will be worked by mechanized method with HEMM with Deep Hole Drilling (100mm) & Blasting. However for drilling and hauling, jack hammers, hydraulic excavators and tippers will be used respectively.

Drilling Machines :

Drilling of shot holes will be carried out using compressor and jack hammer. Depth of holes shall be 1 to 2m bench height and spacing shall be 0.75m and burden shall be 0.60m from the preface.

Details of drilling equipments are given below.

Table No.12

Type	Nos	Dia of hole	Size / Capacity	Make	Motive power	H.P.
Jack Hammer	5	25.5 mm	Hand held	Atlas copco 2Nos	Diesel	60

Loading Equipment:

Loading of rough stone shall be carried out by 10 tonne capacity tippers by Hydraulic Excavator from the working place periodically. Details of loading equipment are given as under.

Table No.13

Type	Nos	Bucket Capacity (MT)	Make	Motive power	H.P.
Hydraulic excavator	3	1.2 M ³	L&T or Ex200	Diesel	120

Transportation:

Transport of raw materials and waste shall be done by Tipper of 10 M.T. capacity.

Table No.14

Type	Nos	Size / Capacity	Make	Motive power	H.P.
Tipper	4	10 M.T	Ashok Leyland	Diesel	110

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Miscellaneous :

There is no other miscellaneous operation worth mentioning except drilling by Jack hammer working of Rough stone deposit by opencast semi-mechanized methods, transport of Rough stone by tippers and trucks and pumping out seepage water during rainy season.



Afforestation :

The safety distance along the boundary has been identified to be utilized for afforestation purpose. Yearly 80 Neem Panai, Illuppai & Pungai trees will be planted in this lease area. These trees will be planted along the boundary line, (Please refer Plate No.V for Mine layout, Land use and Afforestation Plan).

The soil will be spread over the same and vegetative cover with suitable species will be provided. The extent of area to be afforested in next Five years is 0.76.94 Ha. interval between trees – 5m, survival rate – 60%. A retaining wall will be constructed around the pit.

The Afforestation programme for the next Five years are described as follows :

Table No. 15

Year	Name of the species	No. of species	Interval	Area in Ha.	Survival rate
2024-2025	Neem, Panai, Illuppai & Pungai	80	5m	0.15.39	70%
2025-2026	Neem, Panai, Illuppai & Pungai	80	5m	0.15.39	70%
2026-2027	Neem, Panai, Illuppai & Pungai	80	5m	0.15.39	70%
2027-2028	Neem, Panai, Illuppai & Pungai	80	5m	0.15.39	70%
2028-2029	Neem, Panai, Illuppai & Pungai	80	5m	0.15.39	70%
TOTAL		400		0.76.94	

e). Describe briefly the layout of mine workings, pit road layout, the layout of faces and sites for disposal of Topsoil/waste along with ground preparation prior to disposal of waste, reject etc. A reference to the plans and sections may be given. UPL or ultimate size of the pit is to be shown for identification of the suitable dumping site:

The quarry is proposed to carry out mining operation with mechanized opencast method. Recently the Directorate General of Mines Safety vide letter No.51250195/SZ/Bengaluru Region/Perm/2023/256372 dated 21.08.2023 permitted the lessee to work with Heavy Earth Moving Machinery (HEMM) with Deep Hole Drilling (100mm) & Blasting with in the lease hold area. The Common Boundary with survey No.314 (Part-1) with an extent of 3.00.0 Ha. is also approved with certain conditions.

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The quarry operation involves Heavy Earth Moving Machinery (HEMM) with Deep Hole Drilling (100mm) & Blasting, excavation, loading and transportation of Rough Stone.



The operation will be confined to general shift only i.e. from 8.00 AM to 4.00 PM with one hour lunch interval between 12.00 PM to 1.00 PM.

The Rough Stone, totally Nine benches will be 5.0m height & 5.0m width and one bench will be 3.0m height for next Five years only. Please refer Plate No. IV & IV-A. The advancement of the pit will be from boundary towards middle side of the lease area for the next Five years. Please refer Plate No. IV.

A bund will be constructed around the pit to prevent accident call and inrush of rainwater. Proper footpaths are provided between benches for easy accessibility for workers.

Haul roads, to conform to statutory standards are made according to convenience for smooth transport of Rough Stone and waste. Wherever necessary, crossing platforms provided in the haul roads at suitable point for safe crossing as tractors, tippers, trucks etc.,

The Top Soil formation will be dumped in western side boundary barrier of the lease area. It will be utilized for afforestation & road low lying purpose.

Average annual production is about 147592 cum of Rough Stone with 300 working days in a year. Considering the nature of the deposit and the anticipated daily production level, mechanized mining is proposed.

A boundary barrier of 10.0m width will be maintained as per statute. Rough Stone locked up in this barrier will be excavated as per permission from DGMS under Regulation 111 of Mines and Mineral Regulation, 1961. The sequence of working for the next Five years is indicated in Plate No. IV and the rate of production is given in Table No.11.

f) Conceptual Mine planning upto the end of lease period taking into consideration the present available reserves and resources describing the excavation, recovery of ROM, Disposal of waste, backfilling of voids, reclamation and rehabilitation showing on a plan with few relevant sections:

Conceptual Mining Plan :

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

While making the Conceptual Mining Plan and deciding the ultimate pit limits the following factors are considered.

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i) Pit dimension :

a. Table No:16

	PIT
Length(m)	226.0
Width (m) Avg	192.0
Depth (m)	49.0

01. Boundary Barriers

In this case a barrier of 10.0m is left along the lease boundary.

02. Depth of Mining :

The depth of mining is about 49.0m (1.0m Top Soil+ 48.0m Rough Stone).

03. No. of benches :

The no. of benches will be eleven including the Top Soil bench.

04. Size and slope of benches :

In Top Soil, the bench height will be 1.0m with 45° slope.

In Rough Stone, the bench 5.0m height and width 5.0m for next Five years.

05. Nature of Top Soil:

The nature of the soil in this area is gravelly soil. The top most gravelly soil, this layer which is thickness of about 1.0m from general ground level.

06. The size of the lease hold :

The lease area has an extent of 4.94.32Ha.

07. Nature of ore body :

In the area Rough Stone is of massive Deposit and without much of geological disturbances.

i) The ultimate pit limits will be :

Ultimate pit limits have been marked in the Conceptual Mining Plan.

Table No. 17

	PIT
Length(m)	226.0
Width (m) Avg	192.0
Depth (m)	49.0

G. Permal

01. Area already worked out – Plate No.III : 2.22.62 Ha.
 02. The outline of the area to be worked out in the next Five years : 4.15.38 Ha.
 Plate No. IV.
 03. Year wise area to be planted for next Five years –Plate No.IV. : 0.76.94 Ha.
 04. Extent of areas occupied by roads, site services, : 0.02.0 Ha.
 etc., - Plate No.V.



Table No. 18

Sl. No.	Description	Present Area (Ha.)	Area in use during the quarrying period (Ha.)
01.	Area under Quarrying	2.22.62	4.15.38
02.	Infrastructure	Nil	0.01.0
03.	Roads	0.01.0	0.01.0
04.	Green Belt & Dump	Nil	0.76.94
05.	Unutilized Area	2.70.70	Nil
	TOTAL	4.94.32	4.94.32

Ultimate pit boundaries:

Ultimate pit limits have been marked in the Conceptual Plan in Plate No.VII.

ii) Waste dumps :

There is no waste generation as there is 100% recovery.

Blasting Pattern:

The massive formation shall be broken into pieces of portable size by drilling and Proposed Control Blasting using jack hammers and deep hole drilling & blasting. Power factor of explosives for breaking such hard rock shall be in the order of 6 to 7 tonnes per K.g of explosives.

Proposed Control Blasting parameters are as follows.

Table No.19

Diameter of the hole	: 32-36 mm
Spacing	: 60 Cms
Depth	: 1 to 1.5m
Charge / Hole	: D.Cord with water or 70 gms of gun powder or Gelatine.
Pattern of hole	: Zig Zag
Inclination of hole	: 70 ⁰ from the horizontal.
Quantity of rock broken	: 0.45 MT x 2.6 = 1.17 MT
Control Blasting efficiency @ 90%	: 1.17 x 90% = 1.05MT / hole
Charge per hole	: 140 gms of 25mm dia cartridge
Quantity of rock broken per day	: 491.97M ³ .

b) During dry season, Nitrate mixture as base charge and any conventional type of explosives as booster charge will be used:

In rainy season, it is preferable to use only conventional type of explosives. Since it is a small mine and the working of the mine is also seasonal, drilling will be done by contractors and supply of explosives will be done by authorized dealer. However, blasting will be done by a qualified mate or Blaster.

c) Secondary Blasting:

Secondary blasting is not needed, since the primary blasting itself will take care of the required fragmentation of waste rock and mineral body.

d) Storage of Explosives:

The explosive shall be supplied by the authorized contractor at the blasting site at the time of blasting. The explosive shall be directly used so no storage of explosive is proposed.

e) Safety Precautions:

1. During handling all care shall be taken that no inflammable elements should be there.
2. Only safety explosive container with explosive license shall be used for safe and secure transportation of explosive.
3. Efficient Siren will be blown prior to the blasting & after clearance of blasting.

f) Underground Mines :

Not applicable.

3.0 MINE DRAINAGE

The area is a flat terrain. Rain water finds its natural coarse. The water table is touched at a depth of 90m in summer and at 82m in NE monsoon. The water table fluctuation is verified by observing the water levels in the above seasons in the nearby wells.

During the mining of eighteenth benches, it may be necessary to pump out water. A 5 HP pump can easily deal rain water and seepage water and keep the mine dry. The pumped out water will be left out far away from the Northwestern boundary.

a. Depth of Mining:

The working in Rough Stone will reach a depth of 49.0m (1.0m Top Soil + 48.0m Rough Stone) in the next Five years.

b. Quantity and quality of water likely to be encountered:

In the next Five years, the water table will not pose any problem. However, to deal with storm water and seepage water, a diesel pump of 5 HP capacities is proposed.

In future, proper dewatering pumping arrangements to be made from pit bottom to nearby agricultural lands.



c. Describe regional and local drainage pattern. Also indicate annual rain fall, catchments area, and likely quantity of rain water to flow through the lease area, arrangement for treating solid wash off etc.

Ground water is the main source in this area, apart from rain in the monsoon period. The water table is at a depth of 90m in summer and at 82m in rainy season. The ground water will be collected in the sump for the deposition of solid particles. Once the suspended particles are deposited it will be pumped out for domestic purpose, dust suppression system, gardening and Afforestation purpose. The excess water only will be pumped out to the ponds/closer water bodies-pond after the deposition of solid particles. There are no toxic elements found in the sump water.

To cope up with storm water and seepage water, an energy efficient electrical pump of 5 H.P capacity will be installed and the discharge will be left-out in the nallah/pond. Garland drains will be made all along the periphery of dumpsites to prevent the water carrying the wash-offs from the dumps. The water collected in the garland drains will flow towards a settling tank formed near by the dumpsite.

The water will be allowed to settle the wash offs from the dumps in the settling tank and pure and clear water will be utilized for Afforestation purposes and for haul roads arrest the dust generation.

4.0. STACKING OF MINERAL REJECT /SUB GRADE MATERIAL AND DISPOSAL OF WASTE

a) Indicate briefly the nature and quantity of Topsoil, Topsoil/waste and Mineral Reject to be disposed off.

Topsoil:

The Topsoil is gravelly soil. It occurs to a depth of 1.0m. The generation of Top Soil for next Five years is about 6831 M³. The Top Soil formation will be dumped in western side boundary barrier of the lease area. It will be utilized for afforestation & road low lying purpose.

Top Soil Dump Details
=6831 Cbm (2986 Sqm X 2.28m (H)

Side burden:

There is no sideburden in this lease area.

Sub-grade Mineral:

There is no Sub-grade Mineral produced in the next Five years.

Mineral reject:

There is no waste generation as there is 100% recovery.

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b) The proposed dumping ground within the lease area be proved for presence or absence of mineral and be outside the UPL unless simultaneous backfilling proposed for bare temporary dumping for a short period is proposed in mineralized area with technical constraints & justification.

Construction of garland drain in around the pit and settling tank will be provided to guard against the heavy rainwater.

Periodically sprinkling/spraying water on roads leading from working face to dump, so that areas are always kept wet to prevent emission of air borne dust. Retaining wall will be constructed around the pit.

c) Attach a note indicating the manner of disposal of waste, configuration and sequence of year wise buildup of dumps along with the proposals for protective measures.

Construction of garland drain in and around the pit. Settling tank will be provided to guard against the heavy rainwater.

Periodically sprinkling/spraying water on roads, so these areas are always kept wet to prevent emission of air borne dust.

Retaining wall and garland drain will be constructed around the pit. Afforestation programme will be carried out.

5.0 USE OF MINERAL AND MINERAL REJECT:

a) Describe briefly the requirement of end-use industry specifically in terms of

The entire mined out mineral is been utilized by the nearby Crusher unit in Krishnagiri.

b) Give brief requirement of intermediate industries involved in up gradation of Mineral before its end-use:

There is no intermediate industries involved for up gradation of Mineral.

c) Give detail requirements for other industries, captive consumption, export, Associated industrial use etc:

Not Applicable.

d). Physical specifications:

Rough stone texture is medium to coarse grained and is composed of recrystallized minerals, hence it is a metamorphic rock. The grains are subhedral, inequigranular, with a granoblastic texture. The grains are crystalline ie. Complete crystallization has occurred. Cleavage is absent. The color is dark olive green.

Supply of buyers :

Used in nearby Crusher units at Krishnagiri.

e) Give details of processes adopted to upgrade the ROM to suit the user Requirements:

Not applicable.



6.0 PROCESSING OF ROM AND MINERAL REJECT :

a) If processing / beneficiation of the ROM or Mineral Reject is planned to be conducted, briefly describe nature of processing / beneficiation. This may indicate size and grade of feed material and concentrate (finished marketable product), recovery etc:

The minerals produced from the mines need only specific sorting & grading for Size, Grade & Recovery factor. No mineral beneficiation processing is involved. Besides there is no other processing or beneficiation is required for upgrading.

Mineral Beneficiation of Mineral :

Not applicable, no beneficiation is being carried out at the mine. Since the entire mineral was supplied in raw form.

Beneficiation Test Done On Sub-Grade Mineral:

Not applicable, since no sub-grade mineral is anticipated.

b) Give a material balance chart with a flow sheet or schematic diagram of the Processing procedure indicating feed, product, recovery, and its grade at each stage of processing:

Not applicable.

c) Explain the disposal method for tailings or reject from the processing plant:

Not applicable.

d) Quantity and quality of tailings /reject proposed to be disposed, size and capacity of tailing pond, toxic effect of such tailings, if any, with process adopted to neutralize any such effect before their disposal and dealing of excess water from the tailings dam:

Not applicable.

e) Specify quantity and type of chemicals if any to be used in the processing plant:

Not applicable.

f) Specify quantity and type of chemicals to be stored on site / plant:

Not applicable.

g) Indicate quantity (cum per day) of water required for mining and processing and sources of supply of water, disposal of water and extent of recycling:

Water balance chart may be given.

Not applicable.



7.0. OTHERS:

a. Site Services :

The proposed site services are:

Drinking water, rest shed, store room, public convenience etc., mines office and blaster shelter etc., please refer Plate Nos.IV, V, VII and VIII.

Employment Potential:

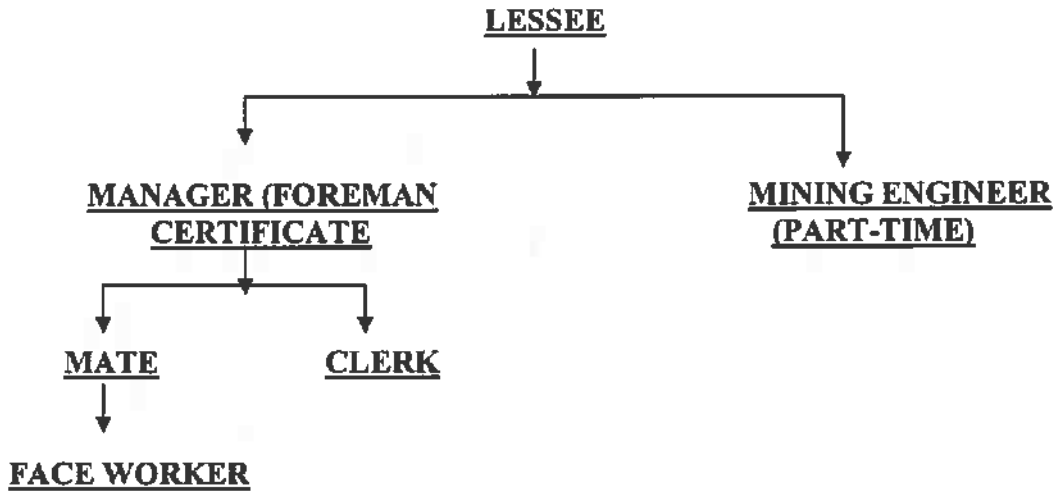
i)Skilled Labour:

Foreman/ Part time Mining Engineer	:	1
HEMM Operator	:	2
Excavator operator	:	2
Co- operator	:	2
Jack hammer operator	:	6
Blaster/mate	:	1

ii)Semi-skilled:	:	3
watchman	:	1

iii)Unskilled helper Muzdoor	:	4
Total	:	22 Nos.

The proposed organization chart :



The drilling will be done by contractors. The mine will work in a single shift from 8.00 AM to 4.00 PM with one hour lunch interval between 12.00 Noon and 1.00 PM.

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8.0 PROGRESSIVE MINE CLOSURE PLAN

INTRODUCTION

Name of the Mine : Thuppuganapalli Rough Stone Quarry
Lessee : Thiru. G.Perumal,
Address : Thiru. G.Perumal,
S/o. Gopal,
A-14, Thally HUDCO,
Thally Road, Hosur Taluk,
Krishnagiri District- 635 109.
Tamil Nadu.



Location :

Extent : 4.94.32 Ha.
S.F.No : 314 (Part-3)
Village : Thuppuganapalli
Taluk : Shoolagiri
District : Krishnagiri

Type of Lease Area : Government Land- Non-Forest area
Present land use pattern : Quarrying of Rough Stone
Method of Mining : Semi-mechanized
Mineral processing operation : Nil

8.1 Environment Base line information: Attach a note on the status of baseline

Information with regard to the following:

Existing land use pattern:

Table No:20

Sl. No.	Description	Present Area (Ha.)	Area in use during the quarrying period (Ha.)
01.	Area under Quarrying	2.22.62	4.15.38
02.	Infrastructure	Nil	0.01.00
03.	Roads	0.01.00	0.01.00
04.	Green Belt & Dump	Nil	0.76.94
06.	Unutilized Area	2.70.70	Nil
	TOTAL	4.94.32	4.94.32

Water Regime

Ground water is touched at a depth of 90m in summer and at 82m in the monsoon season. The average rainfall is 800-900mm. There is no lake, reservoir or river near the area. The people 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.



Air-Quality:

The air quality will be affected during the quarrying period due to blasting and jack hammer drilling, which will be within permissible limits. Since this is an open area, the impact on air quality will be to the minimum. The mine roads will be sprinkled with water before starting the transportation of rough stone and wastes to minimize air pollution.

Noise Level:

Quarrying of Rough Stone had been carried out by drilling and control blasting by using low power explosives, and hence, noise will be very minimum.

Flora and Fauna

Since the lease area is a stony waste, it does not contain much vegetation. There is no report of existence of wild animals in this region.

Climate Conditions

The area receives rainfall of about 800mm to 900mm per annum and the rainy season is mainly from October-January during North East Monsoon. The summer is hot with maximum temperature of 38°C and winter encounters a minimum temperature of 18°C.

Human Settlement

The hamlets near the area are: Table No:21

Name of Hamlet	Population	Direction from the area	Distance
Kummepalli	210	N	2.4 kms.
T.Kurubarapalli	250	E	3.0 kms.
Armadpuram	230	W	2.5 kms.
Irudhalam	200	S	3.0 kms.

Public building, Places of worship and Monuments

There is no public building, places of worship or archaeological or national monuments near the area. There is no wild life or bird sanctuary or no reserve or any protected social forest closer to the area.

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8.2 Impact Assessment: Attach an Environmental Impact Assessment Statement Describing the impact of mining and beneficiation on environment on the following:

a) 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. Before closure of the mine, a parapet wall will be constructed to prevent inadvertent entry of cattle and human beings. 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.

Afforestation will be attempted in the boundary barrier.

Air-Quality:

The air quality will be affected during the quarrying period due to blasting and jack hammer drilling, which will be within permissible limits. Since this is an open area, the impact on air quality will be to the minimum. The mine roads will be sprinkled with water before starting the transportation of rough stone 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 rain water flow through the seasonal water course as usual.

Noise Level:

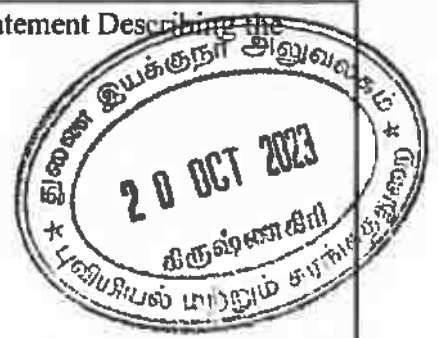
Quarrying of Rough Stone had been carried out by drilling and control blasting by using low power explosives, and hence, noise will be very minimum.

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 equipment will be intermittent.

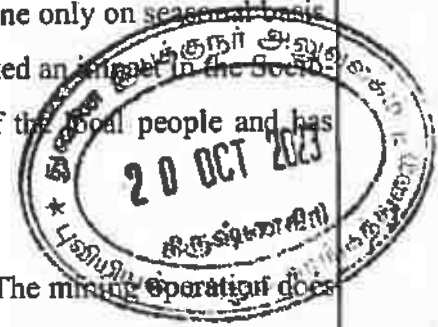
Water Regime:

Mining operation will not produce any toxic effluent in the form of solid, liquid or gas and will not have any impact on quality of water and also 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. 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 improve the standard of living.



Historical Monuments:

There is no historical or Archaeological monument near the area. The mining operation does not have any impact on these aspects.

8.3 PROGRESSIVE RECLAMATION PLAN:

Since, it is an existing mine, the only proposal now is to plant 80 Neem, Panai, Illuppai & Pungai trees every year in the boundary barrier. A retaining wall will be constructed around the pit. Please refer Plate No.V. The Afforestation programme for the next Five years are described as follows :

Table No. 22

Year	Name of the species	No. Of species	Interval	Area in Ha.	Survival rate
2024-2025	Neem, Panai, Illuppai & Pungai	80	5m	0.15.39	70%
2025-2026	Neem, Panai, Illuppai & Pungai	80	5m	0.15.39	70%
2026-2027	Neem, Panai, Illuppai & Pungai	80	5m	0.15.39	70%
2027-2028	Neem, Panai, Illuppai & Pungai	80	5m	0.15.39	70%
2028-2029	Neem, Panai, Illuppai & Pungai	80	5m	0.15.39	70%
TOTAL		400		0.76.94	

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.

8.3.1. MINED OUT LAND:

It is an existing mining lease. There is no proposal for back filling and reclamation at this stage.

- 01. The area covered by pits : 2.22.62 Ha.
- 02. The area covered by Afforestation : 0.76.94 Ha.
- 03. The area covered by roads, infrastructure : 0.02.0 Ha.
- 04. Unutilized area : Nil

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8.3.2. Topsoil management:

The Topsoil is gravelly soil. It will be utilized for afforestation & road laying purpose.



8.3.3. Tailing Dam Management

Does not arise.

8.3.4 Acid mine drainage, if any and its mitigative measures.

Not applicable.

8.3.5 Safety And Security

All the quarry workers will be provided with safety equipments like helmets, Mine Goggles, Ear plugs, Ear muffs, Dust mask, reflector jackets and Safety Shoes as personal protective device as per the specification approved by Director of mines safety. Periodically medical checkup will be conducted for all workers for any mine health related problems. Proper training and induction will be given by qualified and experienced safety officer to all employed about the safe and systematic Rough stone quarrying operations. The drillers and workers will be sent for vocational training periodically to carry out the quarrying operations scientifically to safe guard the men machinery and mineral and to create awareness of conventional opencast quarrying operations.

Parapet wall or bund have been constructed on all sides of the openings. Proper pumping arrangements during rainy season. Trees planted all along the mining lease boundary.

8.4 Disaster Management And Risk Assessment

The nearby hamlet is Shoolagiri which is at a distance of 14.0 kms where facilities like government Centre etc., are available. Mode of transport available is Jeep. All the employee will be shifted to the nearest hamlet Shoolagiri. Mobile phone will be provided to the Mines Manager. The Manager/Supervisor will be provided with a mobile phone. The Mining area is very small. There is no chance for risk for any disaster. However, the details of contact person are given :

Contact person : Thiru. G.Perumal,
Postal Address : S/o. Gopal,
A-14, Thally Hudco,
Thally Road, Hosur Taluk,
Krishnagiri District-635 109.
Tamil Nadu.

G Perumal

8.5 Care and maintenance during temporary discontinuance:

In case, of any temporary closure or discontinuance of mining operations, the following steps are proposed.

- Watchman will be posted round the clock to prevent any unauthorized or inadvertent entry of general public.
- Works on stabilization of dumps to provide vegetal cover will be taken up.
- Construction of garland drains in the pit and retaining walls around the dumps will be attempted.



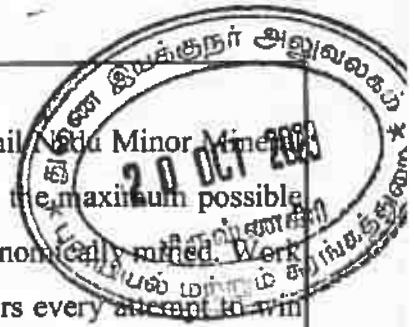
8.6 .Project Cost:

Table No.23

<u>A. Fixed Asset Cost:</u>	
1. Land Cost	: Rs.4,62,00,000/- (Tender Amount for Government Poramboke Land)
2. Labour Shed	: Rs. 2,80,000/-
3. Sanitary Facility	: Rs. 1,10,000/-
4. Fencing cost	: Rs. 1,50,000/-
Total=	Rs. 4,67,40,000/-
<u>B. Operational Cost:</u>	
<u>Machinery cost</u>	: Rs.1,30,00,000/-
<u>C. EMP Cost:</u>	
Drinking water facility	: Rs. 1,50,000/-
Safety kits	: Rs. 90,000/-
Water sprinkling	: Rs. 60,000/-
Afforestation	: Rs. 30,000/-
Water quality test	: Rs. 30,000/-
Air quality test	: Rs. 30,000/-
Noise/vibration test	: Rs. 30,000/-
Total=	Rs. 4,20,000/-
Total Project Cost(A+B+C)	: Rs. 6,01,60,000/-

9.0 Any Other Information:

The Scheme of Mining proposed has fully covered the aspects of Tamil Nadu Minor Mineral Concession Rules with a plan to extend the proposed working of the mine to the maximum possible depth of the deposit. To avoid wastage, the deposit has to be carefully and economically mined. Work persons have to be educated about the value of mineral. The Lessee endeavors every attempt to win mineral economically without wastage and to improve the environment and ecology.



S. Dhanasekar
S. DHANASEKAR, M.Sc., (Geo)
Qualified Person

This Mining Plan is approved based on guidelines / instruction issued and in corporation of the particulars specified in the letter Roc. No. 214/2023 Dated 20.10.2023 of the Deputy Director of Geology and Mining, Krishnagiri and subject to further fulfillment of the conditions laid down under Tamil Nadu Minor Mineral Concession Rules, 1959 and Minor Mineral Conservation and Development Rule 2010.

S. Dhanasekar
DEPUTY DIRECTOR
Geology and Mining,
Collectorate, Krishnagiri.

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2010/23

This Mining Plan is approved subject to the conditions / Stipulation indicated in the Mining Plan Approval
Letter Roc. No. 214/2023 Dated 20.10.2023

PROCEEDINGS OF THE DISTRICT COLLECTOR, KRISHNAGIRI**Present: Dr. S. Prabhakar, I.A.S.***

Roc.214/2018/Mines

Dated 05.12.2019

- Sub: Mines and Minerals - Minor Mineral - Rough Stone - Krishnagiri District - Shoolagiri Taluk - Thuppuganapalli Village- Govt. Land in S.F. No. 314 (part-3) - Over an extent of 4.94.32 Hects. - Precise area for the grant of Quarry lease for rough stone issued to Thiru G. Perumal, S/o Gopal, A-14, Thally Hudco, Thally Road, Hosur 635 109. Krishnagiri District under Tender-cum-Auction - DEIAA clearance obtained - order issued - reg.
- Ref: 1. Krishnagiri District Gazette Extra Ordinary No.01 dated 19.01.2018.
2. Thiru G. Perumal, S/o Gopal, A-14, Thally Hudco, Thally Road, Hosur 635 109. tender application dated 07.02.2018.
3. The District Collector, Krishnagiri Memorandum in Roc.No.214/2018/Mines/ dated 09.03.2018
4. Mining plan approved by the Deputy Director of Geology and Mining, Krishnagiri in Roc. No. 214/ 2018 / Mines dated 07.05.2018
5. The District Level Environmental Impact Assessment Authority Tamil Nadu Letter No.03/DEIAA-KGI/EC.No. 60/2018 dated 22.08.2018 .
6. The Deputy Director of Town and County Planning Dharmapuri letter No. 2320/2018 Thama dated 26.09.2018.

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ORDER:

Thiru G. Perumal, S/o Gopal, A-14, Thally Hudco, Thally Road, Hosur 635 109. had participated in the tender-cum-auction for the grant of quarry lease for rough stone over an extent of 4.94.32 Hects in Government land S.F.No. 314 (part-3) Thuppuganapalli Village of Shoolagiri Taluk, Krishnagiri District on 07.02.2018 and he had been declared as the highest bidder and precise area had been given for the grant of rough stone quarry lease in the said area for a period of Ten years from the date of execution of lease deed and he had been directed to submit the approved mining plan, Environmental Clearance from the DEIAA of Krishnagiri and consent of the Tamil Nadu Pollution Control Board vide in the Memorandum 3rd cited.

The applicant had submitted the approved mining plan approved by the Deputy Director of Geology and Mining vide in the reference 4th cited, the Environment clearance given by the District Level Environment Impact Assessment Authority Tamil Nadu in the reference 5th cited. Further the applicant had submitted the Deputy Director of Town and country planning Dharmapuri region Dharmapuri letter 6th cited in which it is stated that the lease applied area is situated "Non Planning

Area" and also stated that there is no provision to classify the said lands as industrial use.

In view of the above a quarry lease for rough stone is hereby granted to Thiru G. Perumal, S/o Gopal, A-14, Thally Hudco, Thally Road, Hosur 635 109. over an extent of 4.94.32 Hects in Government land S.F.No. 314 (part-3) of Thuppuganapalli village of Shoolagiri Taluk Taluk Krishnagiri District under the provisions of Rule 8 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959 for a period of Ten years from the date of execution of lease deed subject to the following conditions.

I) The grantee should remit a sum of Rs. 92,40,000/- towards security deposit, Rs. 7,415/- towards area assessment in the relevant head of accounts and submit non judicial stamp papers for the value of Rs. 36,10,500/- and to execute the lease deed with District Collector in the prescribed time limit.

II. a) The grantee should sent the notice for operating the quarry to Director of Mines safety, Bangalore.

b) Quarrying operation should carried out only after appointing Mines Manager, Mines Mate and Foremen.

c) At any cost the blasting activity should be carried out under the Supervision of Mines Manger / Mines mate

d) If any accident occur in the quarry area the lessees should give intimation to the Director of Mines safety Bangalore and District Collector, Krishnagiri at once and lessee is solely responsible for any violation.

III) The grantee should get the consent for operation from the Tamil Nadu Pollution Control Board before the commencement of quarrying operation.

III.1 A) சிறப்பு நிபந்தனைகள்:

- i. குவாரி குத்தகை வழங்க உத்தேசிக்கப்பட்டுள்ள குவாரிக்கு அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளியும், அரசு நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும் விட்டு குவாரிப்பணி செய்யவேண்டும்.
- அருகிலுள்ள கிராம சாலைகளுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும், இதர நெடுஞ்சாலைகளுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளியும் விட்டு குவாரிப்பணி செய்யவேண்டும்.

III) B) சாதாரண கற்குவாரி பணி செய்வதற்கான நிபந்தனைகள்:

- (1) குத்தகை காலம், குத்தகை ஒப்பந்தப்பத்திரம் நிறைவேற்றும் நாளிலிருந்து பத்து ஆண்டுகளாகும்.
- (2) குவாரி குத்தகை வழங்கப்பட்ட இடத்தில் குவாரி செய்யும் வேலிக்கல்/ குண்டுக்கல்/ கட்டுக்கல்/ சக்கை மற்றும் ஜல்லி ஆகியவற்றை மேற்படி இடத்திலிருந்து வெளியில் எடுத்துச் செல்வதற்கு முன்பு அவை ஒவ்வொன்றிற்கும் அவற்றிற்குரிய வத்தத்தில் சீனியரேஜ் தீர்வை செலுத்தி இவ்வலுவலகத்தில் பர்மிட் மற்றும் நடைச்சீட்டு பெற்ற பின்புதான் மேற்படி கனிமங்களை குவாரியிலிருந்து வெளியில் எடுத்துச் செல்ல வேண்டும். 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், இணைப்பு II-ல் அவ்வப்போது அரசால் நிர்ணயிக்கப்படும் வத்தத்தில்



- பரப்பு தீர்வை செலுத்த வேண்டும். மேற்கண்ட தொகையைத் தவிர அரசால் நிர்ணயிக்கப்படும் இதர தொகைகளையும் குத்தகைதாரர் செலுத்த வேண்டும்.
- (3) குத்தகை இடத்திற்கு அருகிலுள்ள குடியிருப்புகள், கட்டடங்கள், தோட்டங்கள், களங்கள், மரங்கள், சாலைகள், வளர்ச்சிப்பாதைகள், நடைபாதைகள் மற்றும் இது போன்ற சொத்துக்களுக்கு பாதுகாமில்வாமல் குவாரி செய்ய வேண்டும்.
- (4) குத்தகை வழங்கப்பட்ட இடத்திற்கு அருகாமையில் உள்ள பட்டாதாரர்கள் மற்றும் பொது மக்களுக்கு பாதுகாமில்வாமல் குவாரி செய்ய வேண்டும்.
- (5) அ) குத்தகை வழங்கப்பட்ட இடத்திற்கு அருகிலுள்ள ரயில்பாதைகள், சாலைகள், மின்சாரம் மற்றும் தொலைபேசி கம்பிகளுக்கு 50 மீட்டரும், குடியிருப்பு பகுதியிலிருந்து 300 மீட்டரும், நடைபாதைகள், கிராம சாலைகளுக்கு 10 மீட்டரும் பாதுகாப்பு இடைவெளி விட்டு குவாரி செய்ய வேண்டும்.
ஆ) அருகிலுள்ள அரசு நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணி செய்ய வேண்டும்.
இ) அருகிலுள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணி செய்ய வேண்டும்.
- (6) மாவட்ட ஆட்சித்தலைவர் (அல்லது) அரசால் அதிகாரம் வழங்கப்பட்ட அலுவலரை குத்தகை வழங்கப்பட்ட இடத்தைப் பார்வையிடவும், குவாரி பதிவேடுகள், ஆவணங்கள் மற்றும் கணக்கை சரிபார்க்கவும் அனுமதிக்க வேண்டும். இது சம்பந்தமாக அவர்கள் கோரும் அனைத்து விவரங்களையும் வழங்க வேண்டும்.
- (7) கற்றுப்புற சூழ்நிலை பாதுகாப்பு, கனிம பாதுகாப்பு, தொழிலாளர் பாதுகாப்பு முதலியவற்றைக் கருத்தில் கொண்டு விஞ்ஞான அடிப்படையில் திறமையுடன் முறையாகக் குவாரி செய்ய வேண்டும்.
- (8) மாவட்ட ஆட்சித்தலைவர் மற்றும் ஆணையர், புலியியல் மற்றும் காங்கத்துறை, ஆகியோரால் அதிகாரம் வழங்கப்பட்ட அலுவலரை மேலே பத்தி (5)-ல் குறிப்பிட்டுள்ள நிபந்தனைகள் தொடர்பாகவும், மேற்கண்ட அலுவலர்களின் ஆணையை நிறைவேற்றவும் குத்தகை வழங்கப்பட்ட இடத்தைப் பார்வையிட அனுமதிக்க வேண்டும்.
- (9) குத்தகைதாரரின் செலவில் குத்தகை ஒப்பந்தப்பத்திரம் நிறைவேற்றி அதனை பதிவு செய்வதற்கு முன்பு குத்தகை இடத்தில் குவாரி மற்றும் இது சம்பந்தப்பட்ட வேலைகளைத் தொடங்கக்கூடாது.
- (10) குத்தகை வழங்கப்பட்டுள்ள இடத்திற்குள் எல்லையிலிருந்து 7.5 மீட்டர் தூரத்திற்குள் குவாரி செய்யக் கூடாது.
- (11) பொது சாலைகளிலிருந்து குத்தகை வழங்கப்பட்ட இடத்திற்குச் செல்ல பாதை வசதி குத்தகைதாரர் சொந்த பொறுப்பில் செய்து கொள்ள வேண்டும்.
- (12) குத்தகை ஒப்பந்தப்பத்திரத்துடன் இணைத்துள்ள வரைபடத்தில் காட்டியுள்ள குத்தகை இடத்தைச் சுற்றிலும் எல்லைக்கற்கள் நட்டு அவற்றைச் சரியானபடி பராமரிக்க வேண்டும்.
- (13) 1959 ஆம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் இணைப்பு XII மற்றும் XII-ல் உள்ள படிவங்களில் முறையே இசைவாணைச்சீட்டு மற்றும் நடைச்சீட்டிணைத் தயார் செய்து அவற்றில் மாவட்ட ஆட்சித்தலைவரால் அதிகாரம் வழங்கப்பட்ட அலுவலரின் கையொப்ப முத்திரை மற்றும் அலுவலக முத்திரைகள் பெற்று குவாரியிலிருந்து குண்டுக்கல், சுட்டுக்கல், சக்கை மற்றும் ஜல்லி ஆகியவற்றை வெளியில் எடுத்துச் செல்லும் ஒவ்வொரு வாகனத்திற்கும் ஒவ்வொரு நடைக்கும் வழங்கப்படவேண்டும். குண்டுக்கல், சுட்டுக்கல், சக்கைக்கல், ஜல்லி ஆகியவற்றை ஏற்றிச் செல்லும் ஒவ்வொரு வாகனமும் அதனைச் சோதனைச் செய்வதற்கு அதிகாரம் பெற்ற அலுவலர் சோதனைச் செய்யும்போது நடைச்சீட்டிணைக் காண்பிக்க வேண்டும். இசைவாணைச்சீட்டு மற்றும் நடைச்சீட்டின் நகல்களை குவாரியில் வைத்திருக்க வேண்டும். முறையான இசைவாணைச்சீட்டு மற்றும் நடைச்சீட்டுகள் இல்லாமல் கனிமங்களை ஏற்றிச் செல்லும் வாகனங்கள் 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிமச் சலுகை விதிகள் மற்றும் காங்கங்கள் மற்றும் கனிமங்கள் (ஒழுங்குமுறை மற்றும் அபிவிருத்தி) சட்டம்,

- 1957-ன்படி கைப்பற்றப்பட்டு, குத்தகைதாரர் மீது நடவடிக்கை எடுக்கப்படுவதுடன் குவாரிக் குத்தகையையும் ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
- (14) குத்தகை வழங்கப்பட்ட இடத்தை குண்டுக்கல், கட்டுக்கல், சக்கை மற்றும் ஜல்லி குவாரி செய்ய மட்டும் பயன்படுத்த வேண்டும். குத்தகை உரிய ஆணை அல்லது குத்தகை ஒப்பந்தப்பத்திரத்தில் தவறுதலாக கனிம விவரம் குறிக்கப்பட்டு இருந்தால் அதனை எந்த நேரத்திலும் திருத்துவதற்கு மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. குத்தகைதாரர் அதன்படியில் எந்த உரிமையும் கோரமுடியாது.
- (15) மெருகேற்றுவதற்கும், அபல் நாட்டிற்கு ஏற்றுமதி செய்வதற்கும் பயன்படும் பெரிய கந்துண்டங்கள் வடிவத்தில் கற்குவாரி செய்யக் கூடாது.
- (16) குத்தகை ஒப்பந்தப்பத்திரத்தில் குறிக்கப்படாத வேறு ஏதாவதொரு கனிமம் கிடைத்தால், அதனை சம்பந்தப்பட்ட அலுவலரின் அனுமதியைப் பெறாமலும், அதற்குரிய சீனியரேஜ் தொகையைச் செலுத்தாமலும் எடுக்கக்கூடாது. புதிய கனிமம் கிடைத்த விவரத்தை 30 தினங்களுக்குள் தெரிவிக்காமல் எடுத்துச் சென்றால் இக்குற்றத்திற்கு அந்த கனிமத்திற்குரிய சாதாரண சீனியரேஜ் கட்டணத்தைப்போல் 15 மடங்குவரை மாவட்ட ஆட்சித்தலைவரால் அபராதம் விதித்து வசூலிக்கப்படும்.
- (17) குத்தகை காலம் முடிந்தபிறகு, குத்தகை வழங்கப்பட்ட இடத்திலிருந்து குண்டுக்கல், கட்டுக்கல், சக்கை மற்றும் ஜல்லியை குவாரி செய்து வெளியில் எடுத்துச் செல்ல குத்தகைதாரருக்கு உரிமையில்லை.
- (18) குத்தகை காலம் முடிவடைந்த பிறகு குத்தகை இடத்தில் எஞ்சின், மெஷின் போன்ற எந்தவிதமான தளவாட பொருட்களையும் வைத்திருக்கக்கூடாது. அவற்றை குத்தகை காலத்தில் கடைசி நாளன்று குத்தகைதாரர் எடுத்துச் சென்றுவிட வேண்டும்.
- (19) குத்தகையை வேறு எவருக்கும் உள் குத்தகைக்கு விடக்கூடாது.
- (20) குவாரி செய்வதில் இழப்பு ஏற்படின் நஷ்டாடு தேடக்கூடாது.
- (21) குவாரியில் வேலை செய்யும் தொழிலாளர்கள் மற்றும் இது நபர்களுக்கு விபத்து ஏதாவது ஏற்படின் அதற்கு முழுப் பொறுப்பினையும் குத்தகைதாரனாச்சேரும். இதற்கு அரசு பொறுப்பில்லை.
- (22) அரசுக்கு செலுத்த வேண்டிய தொகையை உரிய காலத்திற்குள் செலுத்தவில்லை என்றால் அத்தொகை 24 % அல்லது அரசால் அவ்வப்போது நிர்ணயிக்கப்படும் வீதத்தில் வட்டியுடன் குத்தகைதாரரிடமிருந்து வசூலிக்கப்படும்.
- (23) அரசுக்கு செலுத்த வேண்டிய பாக்கித் தொகை தமிழ்நாடு வருவாய் வசூல் சட்டம் 1864-ன் கீழ் வசூலிக்கப்படும்.
- (24) குத்தகை நிபந்தனைகள், 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், அரசு, ஆணையர், டிபிபியல் மற்றும் கரங்கத்துறை, மாவட்ட ஆட்சித்தலைவர் ஆகியோரது ஆணைகள் மீறப்படின் மீறலுக்கு அபராதம் விதிப்பதோடு அல்லாமல் குத்தகைதாரருக்கு நேர்புக விளாசனைக்கு வாய்ப்பளித்த பின்பு குத்தகை உரியம் ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
- (25) அரசின் அவ்வப்போதைய ஆணைகளுக்கேற்ப நிபந்தனைகளை மாற்றி அமைக்கவோ, நீக்கவோ, கூடுதலாக சேர்க்கவோ, மாவட்ட ஆட்சித்தலைவருக்கு முழு அதிகாரம் உண்டு.
- (26) மேற்கூறிய நிபந்தனைகளுடன் 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், கரங்கங்கள் மற்றும் கனிமங்கள் (ஒழுங்குமுறை மற்றும் அபிவிருத்தி) சட்டம் 1957, மாவட்ட ஆட்சித்தலைவர் ஆகியோரால் அவ்வப்போது பிறப்பிக்கப்படும் ஆணைகள் குத்தகைதாரரைக் கட்டுப்படுத்தும்.
- (27) குவாரிகள்/கரங்கங்களுக்கு பொருத்தக்கூடிய தொழிலாளர் சட்டங்களுக்கு கட்டுப்பட்டு குத்தகைதாரர் குவாரி செய்யவேண்டும். தவறினால் சம்பந்தப்பட்ட அரசின் சட்டப்பூர்வமான நடவடிக்கைகளுக்கு குத்தகைதாரர் உள்ளாக வேண்டி இருக்கும்.
- (28) இந்திய வெடிமருந்து சட்டம் 1884 (Central Act IV of 1884)-ன்படி உரிய வெடிமருந்து உரியம் பெற்று குத்தகைதாரர் பாறைகளை வெடிவைத்து உடைக்க வேண்டும். தவறும் பட்சத்தில் குத்தகைதாரர் கட்டும் தண்டனைக்கு உள்ளாக வேண்டியிருக்கும்.

(29) குத்தகைதாரர் சுவாரியில் குழந்தை தொழிலாளர்களை பணியமர்த்தக்கூடாது.



IV) a) The conditions imposed by the Tamil Nadu Pollution Control Board in the consent to Operate in Air and Water Pollution Act should be strictly adhered and the consent should be renewed periodically.

b) The Environment Clearance issued by the DEIAA, Krishnagiri should be renewed within the prescribed time limit.

V) Conditions imposed by the SEIAA.

1. (i) The Environmental Clearance is granted to Mining of Rough Stone for the production quantity of 2589553 Cu.m of Rough stone for the period of 5 Years from the date of execution of the Mining lease period.

(ii) Depth of mining permitted = 85.mts. (including topsoil and burden) for a period of 5 years.

2. A. Conditions to be complied before the commencing of mining operation

(1) The applicant has to obtain land use classification as industrial use before issue/ renewal of mining-lease.

(2). NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 8.5 Km from the proposed project site. The CNWL Sancturay so it advised to get NBWL Clearance.

(3). The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.

(4). A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.

(5). Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.

(6). The proponent shall ensure that First Aid Box is available at site.

(7). The excavation activity shall not alter the natural drainage pattern of the area.

- (8) The excavated pit shall be restored by the project proponent for useful purpose.
- (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 7 AM 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.
- (13) Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.
- (14) The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
- (15) Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
- (16) Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
- (17) The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.
- (18) Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
- (19) A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
- (20) The proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF & CC, Col on

16.11.2009.(GLC=Ground Level Concentration), (NAAQ=Noise Quality)



(21). The following measures are to be implemented to reduce Air Pollution during transportation of mineral

- (i). Roads shall be graded to mitigate the dust emission.
- (ii). Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust.

(22). The following measures are to be implemented to reduce Noise Pollution

- (i). Proper and regular maintenance of vehicles and other equipment.
- (ii). Limiting time exposure of workers to excessive noise.
- (iii). The workers employed shall be provided with protection equipment and earmuffs etc.
- (iv). Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

(23). Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.

(24). Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Assistant Director, Ground Water Division, PWD, Dharmapuri.

(25) Rain water harvesting to collect and utilize the entire water falling in land area should be provided by construction of a storage tank with a capacity of 5,00,000 litres and the rain water harvested in the entire quarry area should be stored in it and used for the quarry purpose like dust prevention wet drilling, providing water for green belt etc.

(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 getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season. Photographs of the silt trap should be furnished before commencing quarry operation.

(32). The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, that the ground water is getting depleted due to the quarrying activity, necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Dharmapuri shall monitor.

(33). No tree-felling shall be done in the leased area, except only with the permission from competent Authority.

(34). To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution and it should be monitored by the District Environmental Engineer, TNPCB, Hosur on yearly basis.

(35). It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 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 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 case any hindrance to the village People/Existing Village road.

(39)Free Silica test should be conducted and reported to TNPCCB, Department of Geology and Mining and Regional Director, MoEF and CC, GOI. once in three months.

(40). Air sampling at intersection point should be conducted and reported to TNPCCB, Department of Geology and Mining and Regional Director, MoEF, GOI. Periodically once in six months.

(41). Bunds to be provided at the boundary of the project site and it should be properly maintained.

(42). The project proponent shall undertake plantation/ afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.

(43). At least 10 Neem trees should be planted around the boundary of the quarry site.

(44). Floor of excavated pit to be leveled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.

(45). The Project Proponent shall ensure a minimum of 2.5 of the annual turnover will be utilized for the CSR Activity.

(46). The Project Proponent shall provide solar lighting system to the nearby villages.

(47) The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.

(48). Rainwater shall be pumped out Via Settling Tank only

(49). Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.



(50) As per MoEF & CC, Govt, 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 10 KM from National Park and Sanctuaries.

(51) The quarrying activity shall be stopped if the entire quantity indicated in the Mining Plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.

(52) Safety equipments to be provided to all the employees.

(53) Safety distance of 50 m has to be provided in case of railway, reservoir, canal/odai.

(54) The Assistant / Deputy Director Department of Geology and Mining shall ensure that the proponent has engaged the blaster with valid Blasting license / certificate obtained from the competent authority before execution of mining lease.

(55) The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.

(56) The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.

(57) The proponent shall furnish the data obtained from the Public Works Department regarding the details of ground water table in the quarry site.

(58) The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.

(59) The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to the existing activity before execution of mining.

(60) Heavy earth machinery equipments if utilized, after getting approval from the competent authority.

(61) The environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur.

(62) The Assistant Director Public works Department, Ground Water Division, Dharmapuri Shall monitor whether the quarrying activity is carried out above ground water level on yearly basis.

(63) NOC for sanitary certificate shall be obtained from the Deputy Director of Health Services, Krishnagiri.

(64) Yearly medical examination of the quarry workers should be carried out by the registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Krishnagiri.

(65) Closed circuit camera should be erected at the quarry site and the passage of vehicles in and out of the quarry should be recorded and the footage of the recordings of the camera should be maintained and should be produced before the enforcing officials when ever called for.

(66) Vehicles used for transportation of quarried materials should be fitted with GPS and monitored.

(67) Pit mouth register should be maintained in online.

(68) Auditor report on the annual turnover amount should be submitted to the District Collector within one month from the end of the financial year.

(69) 02.5% of the turn over amount should be utilized for the CSR activity after consultation with the District Collector.

B. General Conditions:

(1) EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.

(2) The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.

(3) No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.

(4) No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.

(5) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the



Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

(6) Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.

(7) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.

(8) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.

(9) Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying them mineral shall not be overloaded.

(10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.

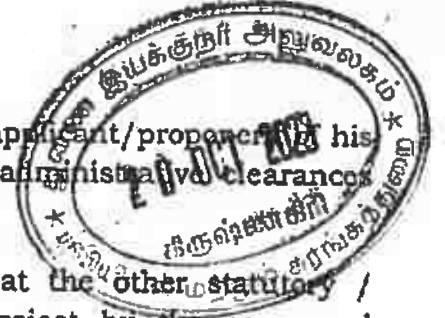
(11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

(12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.

(13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.

(14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.

(15) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its regional office located at Chennai.



- (16) The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
- (17) This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance
- (18) The DEIAA, Krishnagiri may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
- (19) The DEIAA, Krishnagiri may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this 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) The applicant must provide dust arresting mesh to prevent dust control.
- (23) Quarrying recommended up to a depth of 7 mt below ground level. Ground water quality test to be done periodically.
- (24) Regular medical checkups to be conducted once in 3 months. Take action to remove water stagnation.
- (25) NOC shall be obtained from DGMS for working common boundary with quarries.
- (26) Water bodies to be protected.

(27) Ground water table has to be assured.

(28) Any other conditions stipulated by other Statutory/ Government authorities shall be complied.

(30) As per the Hon^{ble} supreme court order since area is locate with in 10 kms from the Cauvery north wild life sanctuary national board of wildlife clearance should be obtained before starting the quarrying operations.

VI. The lessee should strictly adhere all the conditions imposed in the environmental clearance issued by The DEIAA Krishnagiri and consent order of the Tamil Nadu Pollution Control Board.

VII. The lessee should periodically renew the environmental clearance and the consent orders of the Tamil Nadu Pollution Control Board without any lapse.

VIII. If any illicit quarrying is found in the area over an extent of 4.94.32 hectares in S.F.No. 314 (part-3) of Thuppuganapalli Village, Shoolagiri Taluk Krishnagiri District before the date of execution of lease deed, this lease deed is liable to be cancelled and criminal action will be initiated.

IX. If the quarry area is situated within 10 km distance from any protected areas NOC from the Standing committee of NBWL should be obtained before commencing the quarry operation.

X. If the lease holder wants to quarry more than the quantity permitted in the environmental clearance within the lease period, modified mining plan / scheme and Environment Clearance for the additional quantity should be submitted.

Sd/ Prabhakar
DISTRICT COLLECTOR,
KRISHNAGIRI.

/True copy/

For Collector,
Krishnagiri

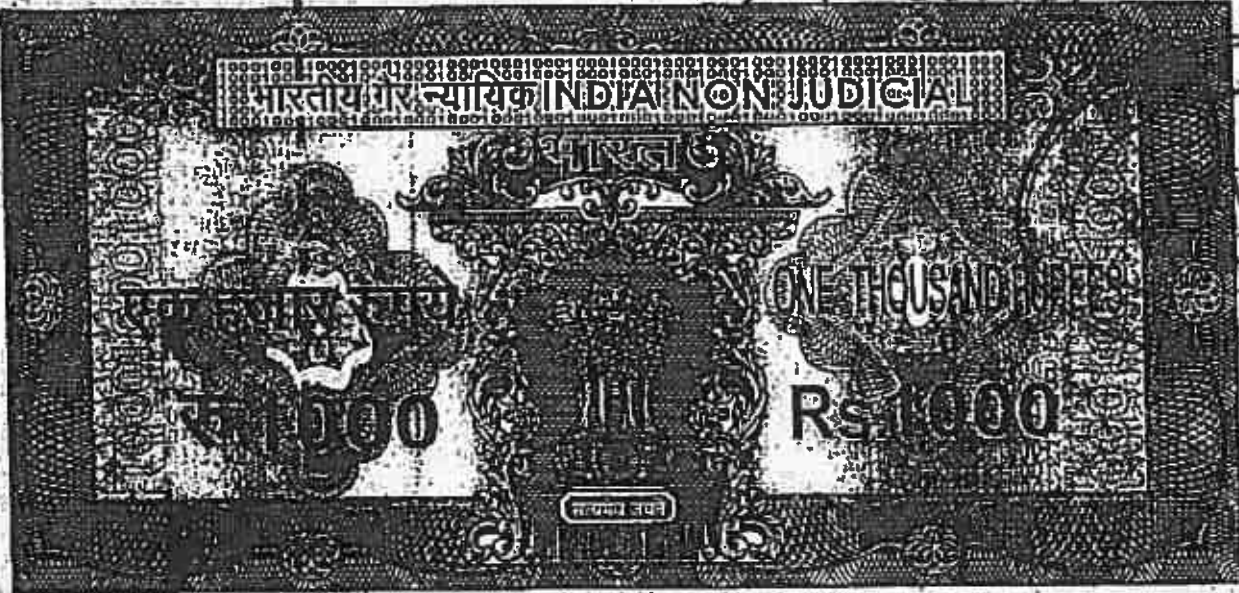
To
Thiru G. Perumal, ⁸6/12/19
S/o Gopal,
A-14, Thally Hudco, Thally Road,
Hosur 635109.

Copy to

1. The Revenue Divisional Officer, Hosur.
2. The Tahsildar, Shoolagiri.
3. The Village Administrative Officer, Thuppuganapalli village.

S. DHANASEKAR, M.Sc., (Geo)
Qualified Person

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தமிழ்நாடு தமில்நாடு TAMILNADU

AP. 863070

29/11/19 G. Perumal, Sr.

B. R. SATHISH KUMAR
S. V. No: 6579/88
Krishnagiri, Tamilnadu.

LEASE DEED FOR QUARRYING AND CARRYING AWAY MINOR MINERALS BY PRIVATE PERSONS. (APPENDIX - I)

(See Rule 8 of Tamil Nadu Minor Mineral Concession Rules 1959 and Krishnagiri District Collector's Proc. No. 214/2018 (Mines-2) dated .11.2019.

THIS INDENTURE MADE THIS 6TH day of DECEMBER 2019 between the Governor of Tamil Nadu (hereinafter referred to as "the Lessor" which expression shall, where the context so admits include his successors in, office and assigns) on the one part, and Thiru G. Perumal, S/o Gopal, A-14, Thally Hudco, Thally Road, Hosur 635 109 (hereinafter called "the lessee" which expression shall where the context so admits include his heirs, executors, administrators, legal representatives and assigns) of the other part.

G. Perumal

LESSEE

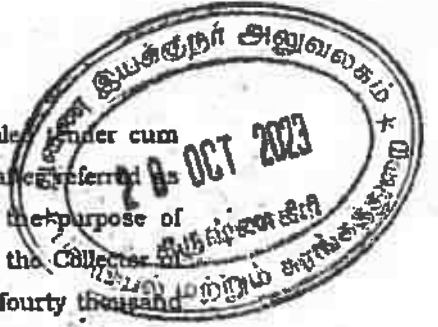


DISTRICT COLLECTOR 3/25

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Sub-Registrar

G. Perumal



WHEREAS the lessee has been the successful bidder in a scale tender cum public auction conducted by the Government of Tamil Nadu (hereinafter referred to as "the Government") for the lease of land in Krishnagiri district for the purpose of quarrying rough stone, jelly and sized stone and has deposited with the Collector, Krishnagiri a sum of Rs. 92,40,000/- (Rupees ninety two lakha and fourty thousand only) at State Bank of India, Krishnagiri on 29.11.2019 as security for the due and faithful performance by the lessee of the covenants and conditions on the part of the lessee hereinafter contained.

AND WHEREAS the lessor has agreed to grant the lessee, a lease of the lands and premises hereinafter described, as per Tamil Nadu Minor Mineral Concession Rules, 1959 (herein after called "The Rules").

AND WHEREAS the lessee had paid to the credit of the Government a sum of Rs. 4,62,00,000/- (Rupees four crores sixty two lakhs only) as one time lease amount for ten years of lease.

NOW THESE PRESENTS WITNESS AS FOLLOWS:-

1. The lessor hereby demises to the lessee all those several pieces or parcels of land situate in the village of Thuppuganapalli in the Sub Registration District of Royakotai in the State of Tamil Nadu being more particularly described in the Schedule hereunder written and delineated in the map or plan hereunto annexed and there in coloured.
2. There are included in the said demise and for the purposes thereof the liberties following:-
 - (1) To get rough stone, jelly and sized stones from the said demised pieces of land.
 - (2) For the purpose aforesaid to use any water in or under the said demised pieces of land and to divert the same and to make or construct any water courses or ponds so, however, that nothing shall be done in the exercise of this authority which shall interfere with the rights of any adjoining owners or tenants of the lessor in respect of such water.
 - (3) Generally to do all things which shall be convenient or necessary for getting the rough stone, jelly etc. hereby authorised to be got and for removing and disposing thereof as aforesaid.

G. Permal
LESSEE

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DISTRICT COLLECTOR 4/23



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Sub-Registrar

G. Permal

3. There are excepted from and reserved to the lessor out of this demise:-

(1) All earth, minerals and other substances not hereinbefore expressly authorized to be got from the demised lands by the lessee.

(2) Liberty for the lessor or other persons authorised by them to search for work, get, carry away and dispose of the excepted minerals and other substances and for such purposes to have the right of ingress, egress and regress over the said demised pieces of land and to make, erect and use all pits, machinery, buildings, roads and other necessary works and conveniences provided that the rights hereby reserved shall be exercised in such a way as to cause as little obstruction as possible to the lessee in the use and enjoyment of his rights hereunder and that reasonable compensation for damages caused by any such obstruction shall be paid to the lessee the amount thereof and in case of difference to be settled by arbitration as hereinafter provided.



4. The said premises shall be held by the lessee for the term of TEN YEARS from the 6th day of OCTOBER-2019 to the 5th day of DECEMBER-2029 which shall however be determinable as hereinafter provided.

5. The lessee shall pay during the said term the area assessment the cess and seigniorage fee or dead rent which ever is greater, for the minerals removed or consumed at the rates prescribed from time to time in appendix II of the rules.

(1) The said seigniorage fee as prescribed in appendix II from time to time shall be paid before the same is removed from the demised pieces of land. The mode of payment of the same shall be indicated by the District Collector from time to time.

(2) The lessee hereby covenants that any fee, cess, rent, rates or any other sum due to the Government if not paid within the stipulated period will pay with interest as envisaged in the rules.

6. The lessee hereby covenants with the lessor as follows:-

(1) To pay the assessment, cess and seigniorage fee or dead rent which ever is greater and other amounts due to the Government, on the days and in the manner aforesaid.

(2) To bear, pay and discharge all existing and future rates, taxes, assessment, duties, impositions, outgoings and burdens whatsoever imposed or charged upon the demised premises or the produce thereof or the land assessment; the cess and the seigniorage fee or dead rent hereby reserved or upon the owner or

G. Parimal
LESSEE

DISTRICT COLLECTOR 5/23



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Sub-Registrar

G. Parimal



occupier in respect thereof or payable by either in respect thereof except such charges or impositions as the lessee is or may hereby be by law exempted from.

(3) Before digging or opening any part of the said demised pieces of land for rough stone, jelly etc. carefully remove the surface soil and lay aside and store the same in some convenient part of the said demised piece of land until the land from which it has been removed is again restored to a state, fit for cultivation as hereinafter provided.

(4) To effectually fence off the same demised pieces of land from the adjoining lands and to keep the fences in good repairs and condition.

(5) Not to assign, underlet or part with the possession of the demised premises or any part thereof without the written consent of the lessor first obtained.

(6) After working out any part of the said demised pieces of land forthwith to level the same and replace the surface soil thereof and slope the edges where necessary so as to afford convenient connection with the adjoining land.

(7) That the lessee shall keep correct accounts in such form as the Collector shall from time to time require and direct showing the quantities and other particulars of the mineral obtained by the lessee from the said lands and also the number of persons employed in carrying on the said quarrying operations therein and shall from time to time when so directed by the Collector prepare and maintain complete and correct plans of all mines and workings in the said lands and shall allow any officer thereunto authorized by the Government from time to time and at any time, to examine such accounts and any such plans and shall when so required supply and furnish to the Government all such information and returns regarding all or any of the matters aforesaid, the Government shall from time to time require and direct.

(8) That the lessor's agents, servants and workmen shall be at liberty at all reasonable times during the said term to inspect and examine the works carried on by the lessee under the liberties herein before granted and the lessee shall and will from time to time and at all times during the said term hereby granted confirm to and observe all orders and regulations which the lessor or his authorised agents as the result of such inspection may from time to time see fit to impose to keep the premises in good and substantial repair, order and condition or in the interest of public health and safety.

(9) That the lessee shall not without the express sanction in writing of the Collector cut down or injure any timber or trees on the said lands but he may clear away brush wood or undergrowth which interferes with any operations authorized by these presents.

G. Parvath
LESSEE



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DISTRICT COLLECTOR 6/23

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Sub-Registrar

G. Parvath



(10) That if the lands shall be used for any purpose other than ^{quarries} for rough stone, jelly etc. or if they are not under or at any time cease to be used for the said purpose the lessor shall be at liberty to terminate the lease without notice.

(11) That this lease may be terminated in respect of the whole or any part of the premises by six months notice in writing on either side.

(12) That on such determination the lessee shall have no right in compensation of any kind.

(13) That the land assessment, cess and scigniorage, rents or other amounts payable under these presents, shall be recoverable under the provisions of Tamil Nadu Revenue Recovery Act 1864 (Tamil Nadu Act II of 1864) or any subsisting statutory modification thereof.

(14) At the determination of the lease to deliver up the demised premises in such condition as shall be in accordance with the provisions of these presents save that the lessee shall, if so required by the lessor, restore in manner provided by the foregoing covenant in that behalf the surface of any part of the land which has been occupied by the lessee for the purpose of the works hereby authorized and has not been so restored.

(15) That the lessee shall abide by the conditions laid down in the payment of Wages Act 1936, the Mines Act 1952 (Central Act XXXV of 1952) and the Indian Explosives Act, 1884 (Central Act IV of 1884). Metalliferous Mines Regulations, 1961, Mines and Minerals (Development and Regulation) Act, 1957 and rules made there under.

(16) The lessee shall comply with the provision of labour laws applicable to quarries and any contravention of the provisions shall attract legal proceedings of the appropriate Government.

(17) After signing this agreement and in the sketch of FMB, the lessee has no rights to question about the measurement of the area leased out, lease conditions and other related matters.

(18) On any account neither the lease period can be extended nor renewed for a further period.

(19) (a) On execution of these presents, the lessee has to take possession of the leasehold area immediately by giving proper acknowledgement.

(b) On the date of expiry of the lease period, the lessee shall hand over the leased out area to the Village Administrative Officer concerned through an affidavit, and the acknowledgement obtained from the Village Administrative Officer for having done so shall be handed over to the Taluk Tahsildar concerned under intimation to the concerned Revenue Divisional Officer and the District Collector.

G.P. *[Signature]*
LESSEE



[Signature]
DISTRICT COLLECTOR 7/23

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Sub-Registrar

G.P. *[Signature]*

(20) The lessee hereby covenants to get the lease agreement registered at expenses under clause (d) of sub section (1) of section 17 of Registration Act 1956.

(21) The lessee shall remove, or allow removal and transportation of the mineral prescribed from the area where quarrying is permitted only after obtaining bulk transport permit and authenticated despatch slips in the forms prescribed in Appendices XII and XIII to these rules, from the Deputy Director (Geology and Mining) Krishnagiri. The lessee or his men shall issue the facsimiled despatch slips to the vehicles used for removal or transportation of the mineral furnishing all the particulars in the despatch slips specifically indicating the vehicle number, the quantity of the mineral allowed to be transported by the vehicle by using that despatch slip and the date and time of issue of the despatch slip to the vehicle. All the vehicles used for transporting minor mineral from the leased out area shall accompany with the individual despatch slips for the quantity of the minerals available in the vehicle at all the times of transportation of the mineral by the vehicles and produce them for check and verification by the competent authorities.

(22) Any violation of the above condition will lead to penal action under Tamil Nadu Minor Mineral Concession Rules 1959 read with Mines and Minerals (Development and Regulation) Act 1957 (hereinafter called the Act).

(23) (a) Only rough stone, jelly and sized stone must be quarried and the lessee should not quarry big granite blocks or ornamental stone of export worthy blocks to be used for cutting and polishing.

(b) If it is found that the lessee is producing granite blocks for cutting and polishing and for export, the lease granted in these presents will be cancelled with forfeiture of security deposit to the Government and penal action will be initiated as per Mines and Minerals (Development & Regulation) Act 1957.

(24) The lessee has to form approach road at his own cost and the Government will not be responsible for dispute if any with or nearby Bhattadars or other third parties.

(25) The lessee has to quarry according to the provisions of Mines and Minerals (Development and Regulation) Act 1957, Metalliferous Mines Regulations 1961 and the rules made thereunder.

(26) The lessee should maintain at his cost boundary pillars, proper sign board indicating the survey number and extent, period of lease, name of the lessee and maintain the sign board during the lease period.

G. P. ...
LESSEE

K. ...
DISTRICT COLLECTOR

8/23



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7. The lessor hereby covenants with the lessee that the lessee paying the land assessment, the cess and the seigniorage fee hereby reserved and observing and performing the several covenants and stipulations on the part of the lessee herein contained shall peacefully hold and enjoy the premises, liberties and powers hereby demised and granted during the said term without any interruption by the lessor or any persons rightfully claiming under or in trust for him.

8. It is hereby further agreed between the parties as follows:-

(1) If any part of the land assessment, cess or seigniorage hereby reserved shall be unpaid for thirty days after becoming payable (whether formally demanded or not) or if the lessee which the demised premises or any part thereof remain vested in him, shall become insolvent or if any covenant on the lessee's part herein contained shall not be performed or observed, then and in any of the said cases it shall be lawful for the lessor at any time thereafter to declare the whole or any part of the said security deposit of Rs. 92,40,000/- to be forfeited and also to re-enter upon the demised premises or any part thereof in the name of the whole and thereupon the demise shall absolutely determine but without prejudice to the rights of action of the lessor in respect of any breach or non-observance of the lessee's covenants herein contained.

(2) At the determination of the lease, the lessee shall be at liberty to remove, carry away and dispose off all the stock of rough stone, jelly etc ready for delivery and all engines, machinery, and all plant, articles and things whatsoever (not being building or brick or stones), the lessee first paying any land assessment, cess and seigniorage and other sums which may be due and performing and observing the covenants on his part herein before reserved and contained and also making good any damage done by such removal but any buildings which shall be erected on the said demised pieces of lands by the lessee and left there on at the determination of lease shall be the absolute property of the lessor who shall not be bound to pay any price for the same.

(3) If the lessee shall have paid the land assessment, cess and seigniorage due to the Government and duly observed and performed the covenants and conditions on his part herein contained, the said deposit of Rs. 92,40,000/- (Rupees ninety two lakhs and forty thousand only) shall be returned to him at the expiration of the said term of ten years.

(4) Should any question or dispute arise regarding this agreement executed in pursuance of these Rules or any other matter or thing connected therewith or the powers of the lessee thereunder the amount or payment of the seigniorage fee or area assessment made payable thereby, the matter in issue shall be decided by the Director of Geology and Mining, Chennai. In case the lessee is not satisfied with the decision of the Director of Geology and Mining, Chennai the matter shall be referred to the State Government for decision.

G. P. ...
LESSEE



DISTRICT COLLECTOR

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9/23

Sub-Registrar

G. P. ...



20. The lessee should strictly adhere to the conditions stipulated in Krishnagiri District Gazette Extra Ordinary issued No. 01 dated 19.01.2018 and rules stipulated by the Government from time to time.

21. In the event of any breach of rules or the condition of lease deed or the conditions of the lease order and the Gazette condition, the lease would become liable for automatic termination without any prior notice.

22. The lessee should adhere the terms and conditions laid down in Krishnagiri District Collector, Proceedings Roc. No. 214/2018 (Mines) dated 12.2019.

23. The lease period starts from the 6TH day of JANUARY 2019 and ends on the 5TH day of FEBRUARY 2029.

24. For the purpose of calculation of Stamp duty one time lease amount of Rs. 4,62,00,000/- Anticipated sieginiorng fee of Rs. 30,55,67,254/- Security Deposit of Rs. 92,40,000/- Area Assessment Rs. 7,415/- were taken in to account.

25. The grantee should get the consent for operation from the Tamil Nadu Pollution Control Board before the commencement of quarrying operation.

26. நிபந்தனைகள்:

- i. குவாரி குத்தகை வரங்க உத்தேசிக்கப்பட்டுள்ள குவாரிக்கு அருகிலுள்ள மட்டா நிலங்களுக்கு 75 மீட்டர் பாதுகாப்பு இடைவெளியும், அரசு நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும் விட்டு குவாரிப் பணி செயல்பெண்டும்.
- ii. அருகிலுள்ள கிராம சாலைகளுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளியும், இது செட்டுருசாலைகளுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளியும் விட்டு குவாரிப் பணி செயல்பெண்டும்.

II) சாதாரண கட்டுவாரி பணி செயல்படுத்தும் நிபந்தனைகள்:

- (1) குத்தகை காலம், குத்தகை ரய்த்பத்திரம் நிறைவேற்றம் தாளிவிடுத்த பத்தி ஆண்டுகளாகும்.
- (2) குவாரி குத்தகை வழங்கப்பட்ட இடத்தில் குவாரி செயல்பட வேலிக்கல் குண்டுக்கல் கட்டுக்கல் சக்கை மற்றும் லாஸ்டி ஆயிவற்றை போட இடத்திலிருந்து வெளியில் எடுத்துச் செல்லுதல் முன்பு அதை ஒய்வெண்ணிலும் அல்லாததரிக் வித்தகல் சாஸ்டிர திரைவ செடுத்தி திருவள்ளூர், பாண்டி மற்றும் நடைச்செட்டு தெரு பின்புதான் போட கணியக்கை குவாரியிலிருந்து வெளியில் எடுத்துச் செல்ல வேண்டும். 1959 ஆம் வருத்திய திபிராடு சிறுசுளி சதுகை விதிகள், இலாபி II-ல் அங்கப்போது அரசால் நிர்ணயிக்கப்படும் விதத்தில் பாடி தாவ செடுத்த வேண்டும். வேகண்ட தொகைகள் தவிர அரசால் அங்கப்போது நிர்ணயிக்கப்பட்டு இது தொகைகளையும் குத்தகைதாரர் செடுத்த வேண்டும்.
- (3) குத்தகை இடத்திற்கு அருகிலுள்ள குயிலுப்புகள், கட்டடங்கள், தீநிலைகள் குளங்களின் கரைகள், கால்வாய்கள், மணியட்டைகள், தாட்பாசைகள் மற்றும் இது போது செடுத்துக்களுக்கு பாதுகாப்பில்வாசி குவாரி செயல்பெண்டும்.
- (4) குத்தகை வழங்கப்பட்ட இடத்திற்கு அருகாமையில் உள்ள மட்டாதாரர்கள் மற்றும் செத்து மக்களுக்கு பாதுகாப்பில்வாசி குவாரி செயல்பெண்டும்.
- (5) அ குத்தகை வழங்கப்பட்ட இடத்திற்கு அருகிலுள்ள ரலில்பாசைகள், சாலைகள், பிள்ளாரம் மற்றும் தொலைபேசி கம்பிகளுக்கு 50 மீட்டரும், குயிலுப்பு பகுதியிலிருந்து 300 மீட்டரும், நடைபாதைகள், கிராம சாலைகளுக்கு 10 மீட்டரும் பாதுகாப்பு இடைவெளி விட்டு குவாரி செயல்பெண்டும்.
- அ) அருகிலுள்ள அரசு நிலங்களுக்கு 10 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணி செயல்பெண்டும்.
- ஆ) அருகிலுள்ள மட்டா நிலங்களுக்கு 75 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணி செயல்பெண்டும்.



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[Signature]
DISTRICT COLLECTOR

11/23

Sub-Registrar

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- (6) மாவட்ட ஆட்சித்தலைவர் (அல்லது) அரசாங்க அதிகாரம் வழங்கப்பட்ட அலுவலரை சந்தனை வழங்கப்பட்ட இடத்தைப் பார்வையிடவும், குவாரி பதிவேடுகள், அலுவலர்கள் மற்றும் சண்டை சரிபார்க்கவும் அனுமதிக்க வேண்டும். இது சம்பந்தமாக அவர்கள் கோரும் அலுவலரை விசாரணையும் வழங்க வேண்டும்.
- (7) கற்றுப்பு குழுவிலே பாதகம், கனிம பாதகம், தொழிலாளர் பாதகம், முதியவர்களுக்கு குறைபாடு கொண்ட விஞ்ஞான அடிப்படையில் திறமையுடன் முறையாகக் குவாரி செய்ய வேண்டும்.
- (8) மாவட்ட ஆட்சித்தலைவர் மற்றும் ஆணையர், புலியியல் மற்றும் களக்கத்தை ஆகியோரால் அதிகாரம் வழங்கப்பட்ட அலுவலரை மேலே பத்தி (5)-ல் குறிப்பிட்டுள்ள நடவடிக்கைகள் தொடர்பாகவும், மேற்கண்ட அலுவலர்களின் ஆணையை நிறைவேற்றவும் குத்தகை வழங்கப்பட்ட இடத்தைப் பார்வையிட அனுமதிக்க வேண்டும்.
- (9) குத்தகைதாரரின் செலவில் குத்தகை ஒப்பந்தப்பத்திரம் நிறைவேற்றி அதனை பதிவு செய்வதற்கு முன்பு குத்தகை இடத்தில் குவாரி மற்றும் இது சம்பந்தப்பட்ட வேலைகளைத் தொடங்கக்கூடாது.
- (10) குத்தகை வழங்கப்பட்டுள்ள இடத்திற்குள் எல்லையிலிருந்து 7.5 மீட்டர் தூரத்திற்குள் குவாரி செய்யக் கூடாது.
- (11) பொது சாலைகளிலிருந்து குத்தகை வழங்கப்பட்ட இடத்திற்குள் செல்ல பாசை வசதி குத்தகைதாரர் செய்த பொறுப்பில் செய்து கொள்ள வேண்டும்.
- (12) குத்தகை ஒப்பந்தப்பத்திரத்துடன் இணைத்துள்ள வரையத்தில் கட்டப்படும் குத்தகை இடத்தைச் சற்றிலும் எல்லைக்கடிகள் ஈட்டு அவற்றைச் சரிபாணப் பார்வையிட வேண்டும்.
- (13) 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகளியச் சலுகை விதிகள் இணைப்பு XII மற்றும் XII-ல் உள்ள படிவங்களில் முறையாக இசைவாணைச்சீட்டு மற்றும் நடைச்சீட்டினைத் தயார் செய்து அவற்றில் மாவட்ட ஆட்சித்தலைவரால் அதிகாரம் வழங்கப்பட்ட அலுவலரின் கையொப்ப முத்திரை மற்றும் அலுவலக முத்திரைகள் பெற்று குவாரியிலிருந்து குண்டுக்கல், சுட்டுக்கல், சக்கை மற்றும் ஆலி ஆகியவற்றை வெளியில் எடுத்துச் செல்லும் ஒப்பொரு வாகனத்திற்கும் ஒப்பொரு நடைச்சீடு வழங்கப்பட வேண்டும். குண்டுக்கல், சுட்டுக்கல், சக்கைக்கல், ஆலி ஆகியவற்றை ஏற்றிச் செல்லும் ஒப்பொரு வாகனமும் அதனைச் சேதமடைந்து செல்வதற்கு அதிகாரம் பெற்ற அலுவலர் சேதமடைந்து செல்லக்கூடாது. நடைச்சீட்டினைக் காண்பிக்க வேண்டும். இசைவாணைச்சீட்டு மற்றும் நடைச்சீட்டின் நடைமுறை குவாரியில் வைத்திருக்க வேண்டும். முற்றமான இசைவாணைச்சீட்டு மற்றும் நடைச்சீட்டுகள் இல்லாமல் கனிமக்களை ஏற்றிச் செல்லும் வாகனங்கள் 1959-ம் வருடத்திய தமிழ்நாடு சிறுகளியச் சலுகை விதிகள் மற்றும் களக்கம் மற்றும் கனிமங்கள் (ஒழுங்குமுறை மற்றும் அபிவிருத்தி) சட்டம், 1957-ம் ஆண்டு கையாற்றப்பட்டு குத்தகைதாரர் மீது நடவடிக்கை எடுக்கப்படுவதுடன் குவாரிக் குத்தகைமையம் ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.
- (14) குத்தகை வழங்கப்பட்ட இடத்தை குண்டுக்கல், சுட்டுக்கல், சக்கை மற்றும் ஆலி குவாரி செய்யும் பண்படுத்த வேண்டும். குத்தகை உரிம ஆணை குறித்து குத்தகை ஒப்பந்தப்பத்திரத்தில் தவறுதலாக கனிம விவரம் குறிக்கப்பட்டு இருந்தால் அதனை நீக்க வேண்டும். திருத்தப்பத்திரம் திருத்தப்பதற்கு மாவட்ட ஆட்சியருக்கு அதிகாரம் உண்டு. குத்தகைதாரர் அதனைப்படிமையில் எந்த உரிமையும் கோரமுடியாது.
- (15) பெருகேற்றுவதற்கும், அயல் நாட்டிற்கு ஏற்றுமதி செய்வதற்கும் பயன்படும் பெரிய கற்கண்டங்கள் வழங்கும் கற்குவாரி செய்யக் கூடாது.
- (16) குத்தகை ஒப்பந்தப்பத்திரத்தில் குறிக்கப்படாத வேறு ஏதாவதொரு கனிம திணித்தல், அதனை சம்பந்தப்பட்ட அலுவலரின் அனுமதியைப் பெறாமல், அல்லது சீவியுண்டு தொகையைச் செலுத்தாமல் எடுக்கக்கூடாது. புதிய கனிம திணித்த விவரத்தை 30 திணிப்பெருக்குள் தெரிவிக்காமல் எடுத்துச் சென்றால் இக்குற்றத்திற்கு அந்த கனிமத்திற்குரிய சாதாரண சீவியுண்டு கட்டணத்தைப்போல் 15 மடங்குமளவு மாவட்ட ஆட்சித்தலைவரால் அபராதம் விதித்து வருவிக்கப்படும்.
- (17) குத்தகை காலம் முடிவடந்த பிறகு குத்தகை வழங்கப்பட்ட இடத்திலிருந்து குண்டுக்கல், சுட்டுக்கல், சக்கை மற்றும் ஆலியை குவாரி செய்து வெளியில் எடுத்துச் செல்ல குத்தகைதாரருக்கு உரிமையில்லை.
- (18) குத்தகை காலம் முடிவடைந்த பிறகு குத்தகை இடத்தில் எஞ்சின, மெஷின் போன்ற எந்தவிதமான தளவாட பொருட்களையும் வைத்திருக்கக்கூடாது. அவற்றை குத்தகை காலத்தில் கையிடுவதற்கு குத்தகைதாரர் எடுத்துச் சென்றாவிட வேண்டும்.
- (19) குத்தகையை வேறு எவருக்கும் உள் குத்தகைக்கு விடக்கூடாது.
- (20) குவாரி செய்வதில் இறப்பு ஏற்படும் நஷ்டஈடு கேட்கக்கூடாது.

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- (21) குவாரியில் வேலை செய்யும் தொழிலாளர்கள் மற்றும் இது நபர்களுக்கு விபத்து ஏதாவது ஏற்பட்டால் அதற்கு முழுப் பொறுப்பிலும் குத்தகைதாரரைச் சேரும். இதற்கு அரசு பொறுப்பும்.
- (22) அரசுக்கு சொந்த வேளாண் தொகையை உரிய காலத்திற்குள் செலுத்தவில்லை என்றால் அத்தொகை 24 % அல்லது அரசின் அவ்வப்போது நிர்ணயிக்கப்படும் வீதத்தில் வட்டியுடன் குத்தகைதாரரிடமிருந்து வசூலிக்கப்படும்.
- (23) அரசுக்கு சொந்த வேளாண் பாக்கித் தொகை தமிழ்நாடு வருவாய் வகுப்பு எட்டம் 1864-ன் கீழ் வசூலிக்கப்படும்.

(24) குத்தகை நிபந்தனைகள், 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், அகலாட்சியல் மரபுமுறை ஆணையர், பரிசீலனை மற்றும் கருங்கத்தறை, மாவட்ட ஆட்சித்தலைவர் ஆகியோரது ஆணைகள் கீழ்ப்படிந்து மேலதிக அபாயம் விதிப்பதோடு துல்லியம் குத்தகைதாரருக்கு நேர்முக விசாரணைக்கு வாய்ப்பளித்த பின்பு குத்தகை உரிமை ரத்து செய்ய நடவடிக்கை எடுக்கப்படும்.

(25) அரசின் அவ்வப்போதைய ஆணைகளுக்கேற்ப நிபந்தனைகளை மாற்றி அளக்கலோ, நீக்கலோ, கூடுதலாக சேர்க்கலோ, மாவட்ட ஆட்சித்தலைவருக்கு முழு அதிகாரம் உண்டு.

(26) மேற்கூறிய நிபந்தனைகளுடன் 1959-ஆம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், காலங்களை மாற்றி கனிமங்கள் (ஒழுங்குமுறை மற்றும் அபிவிருத்தி) சட்டம் 1957, மாவட்ட ஆட்சித்தலைவர் ஆகியோரால் அவ்வப்போது பிரதிபிக்கப்படும் ஆணைகள் குத்தகைதாரரைக் கட்டுப்படுத்தும்.

(27) குவாரிகள்/காய்க்கற்களுக்கு, பொருத்தகல்பய தொழிலாளர் சட்டங்களுக்கு கட்டுப்பாட்டு குத்தகைதாரர் குவாரி செய்வதோடும் தகுதிமீட்டல் சம்பந்தப்பட்ட அரசின் சட்டப்படிப்பிணை நடவடிக்கைகளுக்கு குத்தகைதாரர் உடனாக செயல்படுவதும்.

(28) இந்திய வெய்ங்குட்டு சட்டம் 1884 (Central Act IV of 1884)-ஐயு உரிய வெய்ங்குட்டு உரிமை பெற்று குத்தகைதாரர் பாண்பகளை வெகுவதது உடைக்க வேண்டும். தவறும் பட்சத்தில் குத்தகைதாரர் கடும தண்டனைக்கு உடனாக வெளியிடப்படும்.

(29) குத்தகைதாரர் குவாரியில் குடிநீர் தொழிலாளர்களை பணியமாதக்கட்டாது.

III) a) The conditions imposed by the Tamil Nadu Pollution Control Board in the consent to establishment in Air and Water Pollution Act should be strictly adhered and the consent should be renewed periodically.

b) The Environment Clearance issued by the SELMA, Tamil Nadu should be renewed within the prescribed time limit;

IV) Conditions imposed by the DEIAA:

- 1. 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.
- ii) The approved quantity of rough stone to be quarries = 2589553 cbm
- iii) Depth of mining permitted = 85.mts. (including topsoil and burden) for a period of 5 years.

2. A. Conditions to be complied before the commencing of mining operation

- (1) The applicant has to obtain land use classification as industrial use before issue/ renewal of mining lease.
- (2) -NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 8.5 Km from the proposed project site. The CNWL Sanchiray so it advised to get NBWL Clearance.
- (3) - The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.

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(4). A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.

(5). Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.

(6). The proponent shall ensure that First Aid Box is available at site.

(7). The excavation activity shall not alter the natural drainage pattern of the area.

(8) The excavated pit shall be restored by the project proponent for useful purpose.

(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 7 AM 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.

(13). Depth of quarrying shall be 2m above the ground water table / approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.

(14). The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.

(15). Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.

(16). Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.

(17). The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.

(18). Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.

G. Parnal
LESSEE



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DISTRICT COLLECTOR.

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(19). A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.

(20) The proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF & CC, Govt on 16.11.2009. (GLC=Ground Level Concentration), (NAAQ=Noise and Ambient Air Quality)

(21). The following measures are to be implemented to reduce Air Pollution during transportation of mineral

(i). Roads shall be graded to mitigate the dust emission.

(ii). Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust.

(22). The following measures are to be implemented to reduce Noise Pollution.

(i). Proper and regular maintenance of vehicles and other equipment.

(ii). Limiting time exposure of workers to excessive noise.

(iii). The workers employed shall be provided with protection equipment and earmuffs etc.

(iv). Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

(23). Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoEF, Govt to control noise to the prescribed levels.

(24). Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Assistant Director, Ground Water Division, PWD, Dharmapuri.

(25) Rain water harvesting to collect and utilize the entire water falling in land area should be provided by construction of a storage tank with a capacity of 5,00,000 litres and the rain water harvested in the entire quarry area should be stored in it and used for the quarry purpose like dust prevention wet drilling, providing water for green belt etc.

(26). Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.

(27). Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.

(28). The following measures are to be adopted to control erosion of dumps:-

(i). Retention/ toe walls shall be provided at the foot of the dumps.

(ii). Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.

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(29). Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling and trans. boundary movement) Rules, 2008 and its amendments thereof and the recyclers authorized by TNPCEB.



(30). Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(31). Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season. Photographs of the silt trap should be furnished before commencing quarry operation.

(32). The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, that the ground water is getting depleted due to the quarrying activity, necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Dharmapuri shall monitor.

(33). No tree-felling shall be done in the leased area, except only with the permission from competent Authority.

(34). To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution and it should be monitored by the District Environmental Engineer, TNPCEB, Hoşur on yearly basis.

(35). It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.

(36). It shall be ensured that there is no habitation is located within 500 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site.

(37). Ground water quality monitoring should be conducted once in 3 months.

(38) Transportation of the quarried materials shall not cause any hindrance to the village People/Existing Village road.

(39) Free Silica test should be conducted and reported to TNPCEB, Department of Geology and Mining and Regional Director, MoEF and CC, GOI once in three months.



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G. Parimal

(40). Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI. Periodically once in six months.



(41). Bunds to be provided at the boundary of the project site and should be properly maintained.

(42). The project proponent shall undertake plantation/ afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.

(43). At least 10 Ncem trees should be planted around the boundary of the quarry site.

(44). Floor of excavated pit to be leveled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.

(45). The Project Proponent shall ensure a minimum of 2.5 of the annual turnover will be utilized for the CSR Activity.

(46). The Project Proponent shall provide solar lighting system to the nearby villages.

(47) The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.

(48). Rainwater shall be pumped out Via Settling Tank only

(49). Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.

(50)As per MoEF & CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry & wild life angle including clearance from obtaining committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10 KM from National Park and Sanctuaries.

(51) The quarrying activity shall be stopped if the entire quantity indicated in the Mining Plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.

(52) Safety equipments to be provided to all the employees.

(53) Safety distance of 50 m has to be provided in case of railway, reservoir, canal/odaj.

(54) The Assistant / Deputy Director Department of Geology and Mining shall ensure that the proponent has engaged the blaster with valid Blasting license / certificate obtained from the competent authority before execution of mining lease.

(55) The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.

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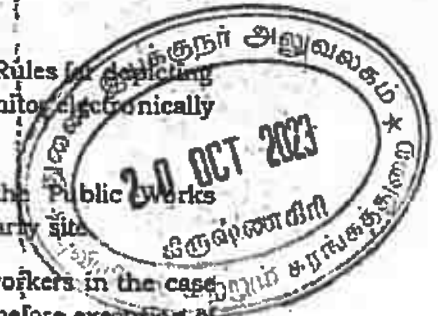


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(56) The proponent shall erect the pillars in accordance with the Rules for ~~excavating~~ GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.

(57) The proponent shall furnish the data obtained from the Public Works Department regarding the details of ground water table in the quarry site.

(58) The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.

(59) The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to the existing activity before execution of mining.

(60) Heavy earth machinery equipments if utilized; after getting approval from the competent authority.

(61) The environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur.

(62) The Assistant Director Public works Department, Ground Water Division Dharmapuri Shall monitor whether the quarrying activity is carried out above the ground water level on yearly basis.

(63) NOC for sanitary certificate shall be obtained from the Deputy Director of Health Services, Krishnagiri.

(64) Yearly medical examination of the quarry workers should be carried out by the registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Krishnagiri.

(65) Closed circuit camera should be erected at the quarry site and the passage of vehicles in and out of the quarry should be recorded and the footage of the recordings of the camera should be maintained and should be produced before the enforcing officials when ever called for.

(66) Vehicles used for transportation of quarried materials should be fitted with GPS and monitored.

(67) Fit mouth register should be maintained in online.

(68) Auditor report on the annual turnover amount should be submitted to the District Collector within one month from the end of the financial year.

(69) 02.5% of the turn over amount should be utilized for the CSR activity after consultation with the District Collector.

B. General Conditions:

(1) EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.

(2) The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.

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LESSEE

G. Parimal

(3) No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.

(4) No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.

(5) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

(6) Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.

(7) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.

(8) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.

(9) Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying them mineral shall not be overloaded.

(10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.

(11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

(12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.

(13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.

(14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.



G. P. Arumal
LESSEE



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(15) The funds earmarked for environmental protection measures should be kept in a separate account and should not be diverted for other purpose. Yearly expenditure should be reported to the Ministry of Environment and Forests and its regional office located at Chennai.

(16) The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.

(17) This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance

(18) The DEIAA, Krishnagiri may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.

(19) The DEIAA, Krishnagiri may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this 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) The applicant must provide dust arresting mesh to prevent dust control

(23) Quarrying recommended up to a depth of 7 mt below ground level. Ground water quality test to be done periodically.

(24) Regular medical checkups to be conducted once in 3 months. Take action to remove water stagnation.

(25) NOC shall be obtained from DGMS for working common boundary with quarries.

(26) Water bodies to be protected.

(27) Ground water table has to be assured.

G. Permal
LESSEE



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(28) Any other conditions stipulated by other Statutory/ Government authorities shall be complied.

(30) As per the Hon^{ble} supreme court order since area is located with in 10 kms from the Cauvery north wild life sanctuary national board of wildlife clearance should be obtained before starting the quarrying operations.



VI. The lessee should strictly adhere all the conditions imposed in the environmental clearance issued by The DEIAA Krishnagiri and consent order of the Tamil Nadu Pollution Control Board.

VII. The lessee should periodically renew the environmental clearance and the consent orders of the Tamil Nadu Pollution Control Board without any lapse.

VIII. If any illicit quarrying is found in the area over an extent of 4.94.32 hectares in S.F.No. 314 (part-3) of Thuppuganapalli Village, Shoolagiri Taluk Krishnagiri District before the date of execution of lease deed, this lease deed is liable to be cancelled and criminal action will be initiated.

IX. If the quarry area is situated within 10 km distance from any protected areas NOC from the Standing committee of NBWL should be obtained before commencing the quarry operation.

X. If the lease holder wants to quarry more than the quantity permitted in the environmental clearance within the lease period, modified mining plan / scheme and Environment Clearance for the additional quantity should be submitted.

THE SCHEDULE

TALUK : SHOOLAGIRI
VILLAGE : THUPPUGANAPALLI

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.	314 (Part-3)	4.94.32	314 (Part)	314 Part & (part-1)	314 (Part-2) & 314 (Part)	314 (part)

G. Parimal
LESSEE

DISTRICT COLLECTOR

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Sub-Registrar

G. Parimal

In Witness whereof Dr. S. Prabhkar 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, "The Lessor" and Thiru G. Perumal, S/o Gopal, A-14, Thally Hudco Thally Road, Hosur 635 109 " The lessee" hereunto set their respective hands.



G. Perumal
LESSEE

[Signature]
DISTRICT COLLECTOR

22
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Signed by the above named in the presence of the following witnesses

Signed by the above named in the presence of the following witnesses.

~~Assistant Director
(Additional Charge)
Geology & Mining Dept.
Collectorate, Krishnagiri.~~

(V. SURESH)

~~ASSISTANT GEOLOGIST
O/o. the Dept. of Geology and Mining,
Collectorate, Krishnagiri.~~

(S. MUTHU)

Witnesses:

1) *[Signature]* G. Palaniyappan Vektharama
P. RAJESH

2) *[Signature]* G. Dharmavaram Rajakumar

D. Rajkumar



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Sub-Registrar

G. Perumal

1899ம் ஆண்டு இந்திய முத்திரைச் சட்டம் 42வது பிரிவின் கீழான சான்று



2019ம் ஆண்டு வரிசை எண் 1709

9-14, தனி அட்கோ, ஒதர், ஒதர், கிருஷ்ணகிரி, தமிழ்நாடு, இத்தியா, 635109-ல் வசிக்கும் திரு கோபாலசுந்தரன் என்பவரிடமிருந்து ₹ 36,09,150/- ரூபாய் முப்பத்தாறு இலட்சத்து ஒன்பதாயிரத்து நூற்று ஐம்பது மட்டும், இந்த ஆவணத்திற்காக இந்திய முத்திரைச் சட்டம் 41வது பிரிவின் படி குறைவாயிருந்த முத்திரைச் சட்டம் 41-ன் விதிக்கப்பட்டது என நான் இதன் மூலம் சான்றளிக்கிறேன்.

சார்பதிவாளர் : ராயக்கோட்டை
நாள்: 10/12/2019



சார்பதிவாளர் மற்றும் இந்திய முத்திரைச் சட்டம் பிரிவு 41-ன் படி ஆட்சியர்

2019 ஆம் ஆண்டு டிசம்பர் மாதம் 10ம் தேதி பி.பி. 02:47 மளியளவில் ராயக்கோட்டை சார்பதிவாளர் அலுவலகத்தில் தாக்கல் செய்யு கட்டணம் ₹ 20,350/- செலுத்தியவர்.

இடது பெருவிரல்



G. Perumal

கூடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளபடி

பதிவுச் சட்டம் பிரிவு 38(1)ன் கீழ் நேரில் வருவதளிரிந்து விலக்களிக்கப்பட்ட திரு டாக்டர் & பிரபாகர், கிருஷ்ணகிரி, கிருஷ்ணகிரி டவுன், கிருஷ்ணகிரி, கிருஷ்ணகிரி, தமிழ்நாடு, இத்தியா, 63500 (மாவட்ட கலெக்டர், கிருஷ்ணகிரி) அவர்களால், இந்த ஆவணம் எழுதிக் கொடுத்தமை குறித்து நான் மனநிறைவடைந்துள்ளேன்.

சார்பதிவாளர் : ராயக்கோட்டை

எழுதி வங்கியதாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்



G. Perumal

கூடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளபடி



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G. Perumal

R/ராயக்கோட்டை/புத்தகம்-1/2435/2019

இன்னொரு நிகுபித்தவர்கள்

1. P. *[Signature]*

திரு ரமேஷ் தபெ பழனியப்பன் 150-1, போலீஸ் குவார்டர்ஸ், திண்டிவனம், திருச்சி, கிருஷ்ணகிரி, தமிழ்நாடு, இந்தியா, 635119

2. D. *[Signature]*

திரு ராம்குமார் தபெ தூருவாசன் 1-316பீ, ராயக்கோட்டை, சேனாமங்கலம், திருச்சி, கிருஷ்ணகிரி, தமிழ்நாடு, இந்தியா, 635116



2019 ஆம் ஆண்டு டிசம்பர் மாதம் 10ம் நாள்

[Signature]
சண்முகவேல் கி
சார்பதிவாளர்
ராயக்கோட்டை

R/ராயக்கோட்டை/புத்தகம்-1/2435/2019 எண்ணாகப் பதிவு செய்யப்பட்டது.

நாள்: 10/12/2019
ராயக்கோட்டை

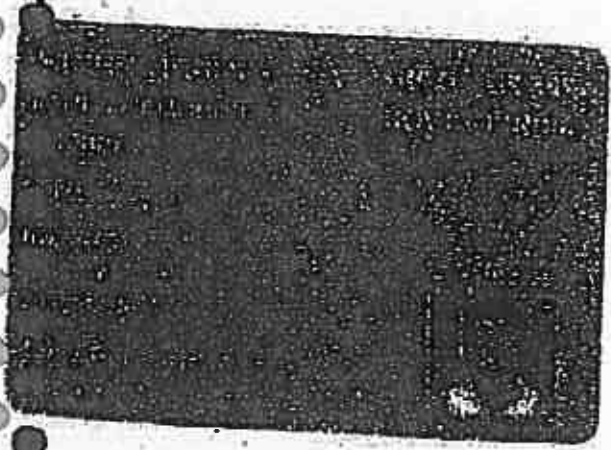


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சார்பதிவாளர்

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வாகன ஓட்டி உரிமை (Tamil Nadu)

DL No. TN05 1990018777

பெயர்: **RAMESH**

பெயர் எழுத்து: **பாலகிருஷ்ண**

பிறந்த தேதி: 31-12-1954

உரிமை தேதி: 31-12-2019

உரிமை இறுதி தேதி: 31-12-2022

பெயர் எழுத்து: **பாலகிருஷ்ண**

DL No. TN05 1990018777

பெயர்: **RAMESH**

பெயர் எழுத்து: **பாலகிருஷ்ண**

பிறந்த தேதி: 31-12-1954

உரிமை தேதி: 31-12-2019

உரிமை இறுதி தேதி: 31-12-2022

பெயர் எழுத்து: **பாலகிருஷ்ண**

2-8-OCT-2023

Signature of Issuing Authority

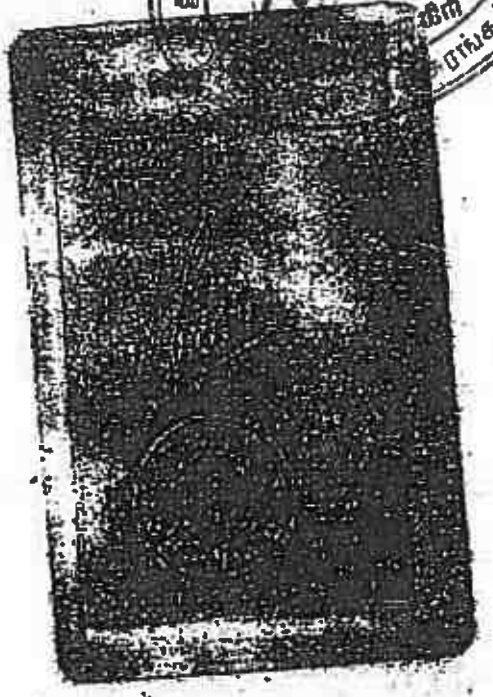
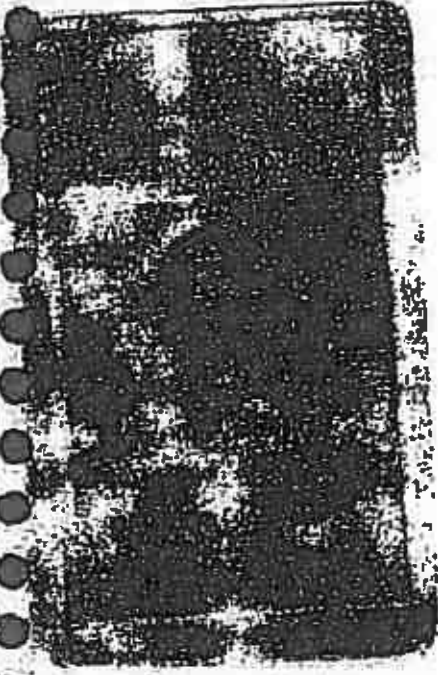
f. Ramesh S/o Pandalayappan
 Adampakkam



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திருச்சிதம்பலம் இயக்குநர் அலுவலகம்
20 OCT 2023
சீர்
புத்தகப்பதிவு



D. P. N.

THE DEPT
OF T.S.
REGISTERAR
CHENNAI

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[Signature]
Sub-Registrar

[Signature]
S. DHANASEKAR, M.Sc., (Geo)
Qualified Person

[Signature]

THIRU C.KATHIRAVAN, I.A.S.,
CHAIRMAN/
DISTRICT COLLECTOR.

ANNEXURE III
Krishnagiri District
Environment Impact
Assessment Authority
Room No.30,
Collectorate,
Krishnagiri.



ENVIRONMENTAL CLEARANCE

Lr.No.03/DEIAA-KGI/EC No.60/2018 dated: .08.2018

To

Thiru. G.Perumal ,
S/o. Gopal,
A-14, Thally Hudco,
Thally Road, Hosur Taluk,
Krishnagiri District.

Sir,

Sub: DEIAA - Application for Environment Clearance for the Proposed quarrying and transportation of 2589553 cbm of Rough Stone generated in the rough stone quarry over an extent of 4.94.32 Hects. in Government land S.F.No. 314(part-3) of Thuppuganapalli village of Shoolagiri Taluk Krishnagiri District preferred by Thiru. G.Perumal , S/o. Gopal, A-14, Thally Hudco, Thally road, Hosur Taluk, Krishnagiri District - Issue of Environmental Clearance - Reg.

- Ref: 1. THIRU. G.PERUMAL , S/o. Gopal, Application for Environment Clearance dated 08.05.2018
2. Minutes of the DEAC meeting conducted on 25.08.2018
3. Minutes of the DEIAA meeting held on 27.08.2018

-o0o-

Details of Minor mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of minor mineral rough stone based on the particulars furnished in your application as shown below:

1.	Name of Project Proponent and address	THIRU. G.PERUMAL , S/o. Gopal, A-14, Thally Hudco, Thally road, Hosur Taluk, Krishnagiri District
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2.	Location of the Proposed Activity		
	Survey Number and Extent		314(part-3) Extent :4.94.32 heccts
	Latitude and Longitude		12° 36' 45.64" N to 12° 36' 55.36" N 77° 55' 16.83 E to 77° 55' 25.45" E
	Topo Sheet No.		57 - H/14
	Village		Thuppuganapalli
	Taluk		Shoolagiri
	District		Krishnagiri District
3.	Proposed Activity		
	i.	Minor mineral	Rough Stone
	ii.	Mining Lease Area	4.94.32 Heccts.,
	iii.	Approved quantity	2589553 cbm of Rough Stone
	iv.	Depth of Mining	85 mts (including topsoil and burden) for a period of 5 years.
	v.	Type of mining	Open cast shallow mining method
	vi.	Category (B1/B2)	B2
	vii.	Precise Communication Area	The District Collector Roc.No.214/2018/Mines dated:09.03.2018
	viii.	Mining Plan approval	Mining Plan approved by the Deputy Director of Geology of Mining Krishnagiri Lr.No.214/2018/Mines Dt:07.05.2018
	ix.	Mining lease period	10 years Environment Clearance for 5 years
4.	Whether Project area attracts any general conditions specified in the EIA notification, 2006 as amended:-		Not attracted Affidavit furnished
5.	Man Power requirement per day.		18 Employees
6.	Utilities		
	i.	Source of Water	a. For Drinking and Domestic purpose water will be purchased from approved water vendors. b. For dust suppression and green belt development water from the existing bore hole situated near by the quarry area will be used.
	ii.	Quantity of Water Requirement in KLD:	
		a. Domestic & Drinking	2.5 kilo litre
		b. Industrial	--
		c. Green Belt & Dust	1.600 kilo litre

		Suppression	
iii.		Power requirement	
	a.	Domestic purpose	TNEB
	b.	Industrial purpose	Fuels is used for operating machineries and vehicles during the quarrying process and transportation and the fuel required for the entire project is 2079912 Lts. of HSD.
7.		Cost	
	i.	Project Cost	Rs.4,84,60,000/-
	ii.	EMP Cost	Rs.3,70,000/-
8.		Public Consultation:-	Not required as per O.M. dated 24.12.2013 of MoEF, GOI
9.		Date of Appraisal by DEAC: Agenda No.	Agenda No.11 of 3 rd meeting of DEAC conducted on 25.08.2018
10.		Date of review / discussion by DEIAA and the Remarks:-	The proposal was placed before the DEIAA in its 3 rd meeting on 27.08.2018 as agenda No.11 and the authority after careful consideration, decided to grant Environmental Clearance to the said project of quarrying of rough stone subject to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.
11.		Validity:	This Environmental Clearance is granted to quarry of Rough Stone for the production quantity of 2589553 Cbm of rough stone for the period of five years from the date of execution of the quarrying lease deed.
12.		NBWL Clearance:	The proposal area is situated 8.40 kms away from The Cauvery north Wild Life Sanctuary and it does not Attract NBWL clearance.
13.		Special Condition:	<ul style="list-style-type: none"> i) Ground Water Quality test should be conducted periodically. ii) Water Sprinkling arrangement shall be maintained as proposed. iii) Environment Management plan should be submitted before the grant of permission.

Conditions to be Compiled before / during commencing operations:-

(1) The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that

- i) The project has been accorded Environmental Clearance.
- ii) Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.

- iii) Environmental Clearance may also be seen on the website of the State Level Environment Impact Assessment Authority.
- iv) The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the DEIAA.

(2). The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.

(3). NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 8.5 Km from the proposed project site. The CNWL Sanctuary so it is advised to get NBWL Clearance.

(4). The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.

(5). A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.

(6). Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.

(7). The proponent shall ensure that First Aid Box is available at site.

(8). The excavation activity shall not alter the natural drainage pattern of the area.

(9). The excavated pit shall be restored by the project proponent for useful purposes.

(10). The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.

(11). The quarrying operation shall be restricted between 7 AM and 5 PM.

(12). The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.

(13). A minimum distance of 15 mts. From any civil structure shall be kept from the periphery of any excavation area.

(14). Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.

(15). The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The 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. Detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.

(17). Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.

(18). The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.

(19). Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.

(20). A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.

(21). The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009. (GLC = Ground Level Concentration), (NAAQ = Noise and Ambient Air Quality)

(22). The following measures are to be implemented to reduce Air Pollution during transportation of mineral

(i). Roads shall be graded to mitigate the dust emission.

(ii). Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust.

(23). The following measures are to be implemented to reduce Noise Pollution

(i). Proper and regular maintenance of vehicles and other equipment.

(ii). Limiting time exposure of workers to excessive noise.

(iii). The workers employed shall be provided with protection equipment and earmuffs etc.

(iv). Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.



(24). Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.

(25). Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Assistant Director, Ground Water Division, PWD, Dharmapuri.

(26) Rain water harvesting to collect and utilize the entire water falling in land area should be provided by construction of a storage tank with a capacity of 5,00,000 litres and the rain water harvested in the entire quarry area should be stored in it and used for the quarry purpose like dust prevention, wet drilling, providing water for green belt etc.

(27). Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.

(28). Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.

(29). The following measures are to be adopted to control erosion of dumps:-

(i). Retention/ toe walls shall be provided at the foot of the dumps.

(ii). Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.

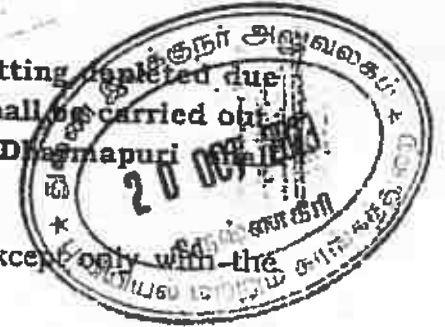
(30). Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.

(31). Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(32). Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season. Photographs of the silt trap should be furnished before commencing quarry operation.

(33). The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the

mining operation. If at any stage, that the ground water is getting depleted due to the quarrying activity, necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Dharmapuri shall monitor.



(34). No tree-felling shall be done in the leased area, except only with the permission from competent Authority.

(35). To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution and it should be monitored by the District Environmental Engineer, TNPCB, Hosur on yearly basis.

(36). It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.

(37). It shall be ensured that there is no habitation is located within 500 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site

(38). Ground water quality monitoring should be conducted once in 3 Months.

(39). Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.

(40). Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI once in three months.

(41). Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI periodically once in six months.

(42). Bunds should be provided at the boundary of the project site and it should be properly maintained.

(43). The project proponent shall undertake plantation/ afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.

(44). At least 10 Neem trees should be planted around the boundary of the quarry site.

(45). Floor of excavated pit to be leveled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.

(46). The Project Proponent shall ensure a minimum of 2.5 of the annual turnover will be utilized for the CSR Activity.

(47). The Project Proponent shall provide solar lighting system to the nearby villages.

(48). The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.

(49). Rainwater shall be pumped out Via Settling Tank only

(50). Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.

(51). As per MoEF & CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry & Wild Life angle including clearance from obtaining committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.

(52). The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.

(53) Safety equipments to be provided to all the employees.

(54) Safety distance of 50 m has to be provided in case of railway, reservoir, canal/odai

(55) The Assistant / Deputy Director Department of Geology and Mining shall ensure that the proponent has engaged the blaster with valid Blasting license /certificate obtained from the competent authority before execution of mining lease.

(56) The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.

(57) The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.

(58) The proponent shall furnish the data obtained from the Public Works Department regarding the details of ground water table in the quarry site.

(59) The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh case before execution of mining lease.

(60) The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to existing activity before execution of mining.

(61) Heavy earth machinery equipments if utilized, after getting approval from the competent authority.

(62) The environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur .

(63) The Assistant Director Public Works Department, Ground Water Division Dharmapuri shall monitor whether the quarrying activity is carried out above the ground water level on yearly basis.

(64) NOC for sanitary certificate shall be obtained from the Deputy Director of Health Services, Krishnagiri.

(65) Yearly medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Krishnagiri.

(66) Closed circuit camera should be erected at the quarry site and the passage of vehicles in and out of the quarry should be recorded and the footage of the recordings of the camera should be maintained and should be produced before the enforcing officials when ever called for.

(67) Vehicles used for transportation of quarried materials should be fitted with GPS and monitored.

(68) Pit Mouth register should be maintained in online

(69) Auditor report on the annual turnover amount should be submitted to the District Collector within one month from the end of the financial year.

(70) 02.5% of the turn over amount should be utilized for the CSR activity after consultation with the District Collector.

B. General Conditions:

(1) EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.

(2) The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.

(3) No change in mining technology and scope of working should be made without prior approval of the DEIAA, Tamil Nadu.

(4) No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.



(5) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

(6) Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.

(7) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.

(8) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.

(9) Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying them mineral shall not be overloaded.

(10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.

(11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

(12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.

(13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.

(14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.

(15) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its regional office located at Chennai.

(16) The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.

(17) This Environmental Clearance does not imply that the other statutory/administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance

(18) The DEIAA, Krishnagiri may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.

(19) The DEIAA, Krishnagiri may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this DEIAA.TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the environmental clearance.

(20) Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

(21) The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

(22) The Applicant must provide dust arresting mesh to prevent dust control.

(23) Quarrying recommended up to a depth of 7m below ground level. Ground water quality test to be done periodically.

(24) Regular medical checkups to be conducted once in 3 months. Take action to remove water stagnation.

(25) NOC shall be obtained from DGMS for working common boundary with quarries.

(26) Water bodies to be protected.

(27) Ground water table has to be assured.

(28) All other conditions stipulated by other Statutory/ Government authorities shall be complied.

(29) As per the Hon'ble supreme court order since area is locate with in 10 kms from the Cauvery north wild life sanctuary national board of wildlife clearance should be obtained before starting the quarrying operations.

(30) 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

OIL

4/1/18
CHAIRMAN DEIAA-KGI/
DISTRICT COLLECTOR,
KRISHNAGIRI.

Copy to

- 27/8/18* *27/8/18* *27/8/18*
1. The Secretary, Ministry of Mines, Government of India , Shastri Bhawan, New Delhi
 2. The Principal Secretary, Environment and Forest Department, Government of Tamil Nadu, Tamil Nadu.
 3. The Principal Secretary to Government, Industries Department, Government of Tamil Nadu, Tamil Nadu.
 4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai-34.
 5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex East Arjun Nagar, New Delhi 110 032.
 6. The Member Secretary, State Level Environmental Impact Assessment Authority Tamil Nadu Panagal Building Saidapet, Chennai
 7. The Chairman Tamil Nadu Pollution Control Board, 76.Mount Salai (Guindy, Chennai-32)
 8. The Commissioner of Geology and Mining, Guindy, Chennai-32
 9. E1 Division, Ministry of Environment and Forests Paryavaran Bhawan, New Delhi.
 10. File No.31/ DEIAA/KGI/2018.

S. Dhanasekar
S. DHANASEKAR, M.Sc., (Geo)
Qualified Person



TAMILNADU POLLUTION CONTROL BOARD



CONSENT ORDER NO. 2005231168442 DATED: 26/03/2020.

PROCEEDINGS NO.F.1863HSR/RS/DEE/TNPCB/HSR/A/2020 DATED: 26/03/2020

SUB: Tamil Nadu Pollution Control Board –CONSENT TO OPERATE –DIRECT -M/s. G PERUMAL ROUGH STONE QUARRY , S.F.No. 314 (Part-3), THUPPUGANAPALLI village Shoolagiri Taluk and Krishnagiri District - Consent for 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. Unit's OCMMS Application No: 31168442 for CTO-Direct, Dated: 14.02.2020.

2. JR.No: F.1863 HSR/RS/AE/HSR/2020, Dated: 23.03.2020.

3. Minutes of the 201st DLCCC meeting dated held on 23.03.2020 [Item No. HSR 201-5].

CONSENT TO OPERATE 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. G PERUMAL ROUGH STONE QUARRY
S.F.No.314 (Part-3),
THUPPUGANAPALLI Village,
Shoolagiri 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 CONSENT is valid for the period ending June 26, 2023

S. Palanisamy Digitally signed by S. Palanisamy
Date: 2020.03.26 11:45:28 +05'30'

**District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR**

**To
The Proprietor,
M/s.G PERUMAL ROUGH STONE QUARRY,
No.A-14,Thally HUDCO,Thally Road,Hosur Taluk,Krishnagiri District,
Pin: 635109**

POLLUTION PREVENTION PAYS

G Perumal



TAMILNADU POLLUTION CONTROL BOARD

Copy to:

1. The Commissioner, SHOOLAGIRI-Panchayat Union, Shoologiri 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 JCEB-Monitoring, Tamil Nadu Pollution Control Board, Vellore for favour of kind information.
4. File



TAMILNADU POLLUTION CONTROL BOARD



SPECIAL CONDITIONS

- 1. This consent to operate 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.

Table with 4 columns: SL No., Description, Quantity, Unit. Row 1: 1. Rough Stone - Quarrying in an extent of 4.9432 Hect. located at S.F.No. 314 (Part - 3) Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District for a period of Five years. 2589553 Cubic Metre / Five Years

- 2. This consent to operate 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.

Table with 5 columns: 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. Rows include Vehicle Movement and Mining Area.

- 3(a). The emission shall not contain constituents in excess of the tolerance limits as laid down hereunder :

Table with 5 columns: SL, Parameter, Unit, Tolerance limits, Stacks

Annexure enclosed if applicable.

- 3.(b) The Ambient Air in the industrial plant area shall not contain constituents in excess of the tolerance limits prescribed below.

G. Permal



TAMILNADU POLLUTION CONTROL BOARD

Sl. No.	Pollutant	Time Weighted Average	Unit	Tolerance Limits	
				Industrial, Residential, Rural and other area	Ecologically Sensitive Area (notified by Central Govt.)
1.	Sulphur Dioxide (SO ₂)	Annual	microgram/m ³	50	20
			24 hours	80	80
2.	Nitrogen Dioxide (NO ₂)	Annual	microgram/m ³	40	30
			24 hours	80	80
3.	Particulate Matter (Size Less than 10 micro M) or PM ₁₀	Annual	microgram/m ³	60	60
			24 hours	100	100
4.	Particulate Matter (Size Less than 2.5 micro M) or PM _{2.5}	Annual	microgram/m ³	40	40
			24 hours	60	60
5.	Ozone (O ₃)	Annual	8 Hours	100	100
			24 hours	180	180
Sl. No.	Pollutant	Time Weighted Average	Unit	Tolerance Limits	
				Industrial, Residential, Rural and other area	Ecologically Sensitive Area (notified by Central Govt.)
6.	Lead (Pb)	Annual	microgram/m ³	0.5	0.5
			24 hours	1.0	1.0
7.	Carbon Monoxide (CO)	8 Hours	milligram/m ³	02	02
			1 Hour	04	04
8.	Ammonia (NH ₃)	Annual	microgram/m ³	100	100
			24 hours	400	400
9.	Benzene (C ₆ H ₆)	Annual	microgram/m ³	5	5
10.	Benzo(O) Pyrene (BaP) -particulate phase only	Annual	nanogram/m ³	01	01
11.	Arsenic (As)	Annual	nanogram/m ³	06	06
12.	Nickel (Ni)	Annual	nanogram/m ³	20	20

3(c) The Ambient Noise Level in the industrial plant area shall not exceed the limits prescribed below:

Limits in L _{eq} -dB(A)	Day Time	Night Time
Residential Area	55	45

- All units of the Air pollution control measures shall be operated efficiently and continuously so as to achieve the standards prescribed in Sl. No.3 above.
- The occupier shall not change or alter quality or quantity or the rate of emission or replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in change in quality and/or quantity of emissions without the previous written permission of the Board.
- The occupier shall maintain log book regarding the stack monitoring system or operation of the plant or any other particulars for each of the unit operations of air pollution control systems to reflect the working condition which shall be furnished for verification of the Board officials during inspection.
- The occupier shall at his own cost get the samples of emission/air/noise levels collected and analyzed by the TNPC Board Laboratory once in every 6 months/once in a year/periodically for the parameters as prescribed.



TAMILNADU POLLUTION CONTROL BOARD



8. Any upset condition in any of the plants of the factory which is likely to result in increased emissions and result in violation of the standards mentioned in Sl.No.3 shall be reported to the Member Secretary, Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.

9. The occupier shall always comply and carryout the order/directions issued by the Board in this Consent Order and from time to time without any negligence. The occupier shall be liable for action as per provisions of the Act in case of non compliance of any order/directions issued.

Special Additional Conditions:

The unit shall install retrofit emission control device, with atleast 70% Particulate matter reduction efficiency on all DG sets with rated capacity more than 125 KVA installed within the industrial premises before 30.06.2020 or otherwise the unit should be shifting to gas based generators by employing new gas based generators. The retrofit emission control device should be tested from one of the five laboratories recognised by CPCB.

Additional Conditions:

1. The unit shall comply all the conditions prescribed in the Environmental Clearance issued by the DEIAA, Krishnagiri District vide Letter No. 03 / DEIAAKGI / EC.No.60 / 2018, Dated: 27.08.2018.

2. The unit shall execute the Mining Lease Agreement with the District Administration before commissioning of the quarrying activities and shall be complied with all the conditions prescribed in the same.

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 with trees having thick canopy cover in the unit's premises.

6. The unit's operation/ activity for the mining shall not disturb the nearby agricultural land if any at any circumstances.

7. The unit shall take necessary precautionary measures to prevent any adverse impact on the nearby habitation.

8. The consent issued is subject to the final outcome of National Green Tribunal (South Zone) in application No. 165/2013.

9. 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 bags irrespective of thickness, within the industry premises. Instead unit shall encourage use of eco friendly alternative such as banana leaf, arecanut palm plate, stainless steel, glass, porcelain plates/cups, cloth bag, jute bag etc.,

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.

S. Palanisamy Digitally signed by S. Palanisamy
Date: 2023.10.20 11:44:36 +05'30'

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
TICOSUR



TAMIL NADU POLLUTION CONTROL BOARD

1. The occupier shall make an application along with the prescribed consent fee for grant of renewal of consent at least 60 days before the date of expiry of this Consent Order along with all the required particulars ensuring that there is no change in production quantity and emission.
2. This Consent is given by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished, in the application will also be ground for review/variation/revocation of the Consent Order under Section 21 of the Act.
3. The conditions imposed shall continue in force until revoked under Section 21 of the Act.
4. After the issue of this order, all the 'Consent to Operate' orders issued previously under Air (Prevention and Control of Pollution) Act, 1981 as amended stands defunct.
5. The occupier shall maintain an Inspection Register in the factory so that the inspecting officer shall record the details of the observations and instructions issued to the unit at the time of inspection for adherence.
6. The occupier shall provide and maintain an alternate power supply along with separate energy meter for the Air Pollution Control measures sufficient to ensure continuous operation of all pollution control equipments to ensure compliance.
7. The occupier shall provide all facilities to the Board officials for collection of samples in and around the factory at any time.
8. The applicant shall display the flow diagram of the sources of emission and pollution control systems provided at the site.
9. The liquid effluent arising out of the operation of the air pollution control equipment shall also be treated in a manner and in the satisfaction of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 as amended.
10. The air pollution control equipments, location of inspection chambers and sampling port holes shall be made easily accessible at all time.
11. In case of any episodal discharge of emission, the industry shall take immediate action to bring down the emission within the limits prescribed by the Board.
12. If applicable, the occupier has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances.
13. The issuance of this consent does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any natural watercourse or in Government Foromboke lands.
14. The issuance of this Consent does not convey any property right in either real personal property or any exclusive privileges, nor does it authorize any injury to private property or Government property or any invasion of personal rights nor any infringement of Central, State laws or regulation.
15. The occupier shall forth with keep the Board informed of any accident of unforeseen act or event of any poisonous, noxious or polluting matter or emissions are being discharged into stream or well or air as a result of such discharge, water or air is being polluted.
16. If due to any technological improvements or otherwise the Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any treatment system, either in whole or in part) the Board shall, after giving the applicant an opportunity of being heard, vary all or any of such conditions and thereupon the applicant shall be bound to comply with the conditions as so varied.
17. In case there is any change in the constitution of the management, the occupier of the new management shall file fresh application under Air (Prevention and Control of Pollution) Act, 1981, as amended in Form-I alongwith relevant documents of change of management immediately and get the necessary amendment with renewal of consent order.
18. In case there is any change in the name of the company alone, the occupier shall inform the same with relevant documents immediately and get the necessary amendments for the change of name from the Board.



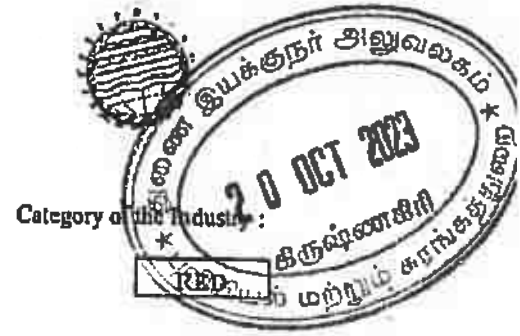
TAMILNADU POLLUTION CONTROL BOARD

POLLUTION PREVENTION PAYS

G. Permal



TAMILNADU POLLUTION CONTROL BOARD



CONSENT ORDER NO. 2005131168442 DATED: 26/03/2020.

PROCEEDINGS NO.F.1863HSR/RS/DEE/TNPCB/HSR/W/2020 DATED: 26/03/2020

SUB: Tamil Nadu Pollution Control Board -CONSENT TO OPERATE - DIRECT -M/s. G PERUMAL ROUGH STONE QUARRY , S.F.No. 314 (Part-3), THUPPUGANAPALLI village Shoolagiri Taluk and Krishnagiri District - 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. Unit's OCMMS Application No: 31168442 for CTO-Direct, Dated: 14.02.2020.
2. IR.No: F.1863 HSR/RS/AE/HSR/2020, Dated: 23.03.2020.
3. Minutes of the 201st DLCCC meeting dated held on 23.03.2020 [Item No. HSR 201-5].

CONSENT TO OPERATE 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. G PERUMAL ROUGH STONE QUARRY
S.F.No.314 (Part-3),
THUPPUGANAPALLI Village,
Shoolagiri 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 CONSENT is valid for the period ending June 26, 2023

S. Palanisamy Digitally signed by S. Palanisamy

Date: 2023.03.26 11:42:17 +05'30'

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
HOSUR

To
The Proprietor,
M/s.G PERUMAL ROUGH STONE QUARRY,
No.A-14,Thally HUDCO,Thally Road,Hosur Taluk,Krishnagiri District,
Pin: 635109

1
POLLUTION PREVENTION FAYS



TAMILNADU POLLUTION CONTROL BOARD

Copy to:

1. The Commissioner, SHOOLAGIRI-Panchayat Union, Shoolagiri 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 JCRR-Monitoring, Tamil Nadu Pollution Control Board, Vellore for favour of kind information.
4. File .



TAMILNADU POLLUTION CONTROL BOARD

SPECIAL CONDITIONS



- 1. This consent to operate 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.	Rough Stone - Quarrying in an extent of 4.9432 Hect. located at S.F.No. 314 (Part - 3) Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District for a period of Five years.	2589553	Cubic Metre / Five Years

- 2. This consent to operate is valid for operating the facility with the below mentioned permitted 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	2.1	On Industrys own land
Effluent Type : Trade Effluent			

- 3. The effluent discharge shall not contain constituents in excess of the tolerance Limits as laid down hereunder.

G. Permal



TAMILNADU POLLUTION CONTROL BOARD

Sl. No.	Parameters	Unit	TOLERANCE LIMITS - OUTLETS - Nos			
			Sewage	Trade Effluent		
			1			
1.	pH		5.5 to 9			
2.	Temperature	oC	-			
3.	Particle size of Suspended solids	-	-			
4.	Total Suspended Solids	mg/l	30			
5.	Total Dissolved solids (Inorganic)	mg/l	-			
6.	Oil & Grease	mg/l	-			
7.	Biochemical Oxygen Demand (3 days at 27oC)	mg/l	20			
8.	Chemical Oxygen Demand	mg/l	-			
9.	Chloride (as Cl)	mg/l	-			
10.	Sulphates (as SO4)	mg/l	-			
11.	Total Residual Chlorine	mg/l	-			
12.	Ammonical Nitrogen (as N)	mg/l	-			
13.	Total Kjeldahl Nitrogen (as N)	mg/l	-			
14.	Free Ammonia (as NH3)	mg/l	-			
15.	Arsenic (as As)	mg/l	-			
16.	Mercury (as Hg)	mg/l	-			
17.	Lead (as Pb)	mg/l	-			
18.	Cadmium (as Cd)	mg/l	-			
19.	Hexavalent Chromium (as Cr+6)	mg/l	-			
20.	Total Chromium (as Cr)	mg/l	-			
21.	Copper (as Cu)	mg/l	-			
22.	Zinc (as Zn)	mg/l	-			
23.	Selenium (as Se)	mg/l	-			
24.	Nickel (as Ni)	mg/l	-			
25.	Boron (as B)	mg/l	-			
26.	Percent Sodium	%	-			
27.	Residual Sodium Carbonate	mg/l	-			
28.	Cyanide (as CN)	mg/l	-			
29.	Fluoride (as F)	mg/l	-			
30.	Dissolved Phosphates (as P)	mg/l	-			
31.	Sulphide (as S)	mg/l	-			
32.	Pesticides	mg/l	-			
33.	Phenolic Compounds (as C6H5OH)	mg/l	-			
34.	Radioactive materials a) Alpha emitters	micro curie/ml	-			
35.	Radioactive materials b) Beta emitters	micro curie/ml	-			
36.	Fecal Coliform	MPN/100ml	-			

4. All units of the sewage and Trade effluent treatment plants shall be operated efficiently and continuously so as to achieve the standards prescribed in Sl No.3 above or to achieve the zero liquid discharge of effluent as applicable.



TAMILNADU POLLUTION CONTROL BOARD

5. The occupier shall maintain the Electro Magnetic Flow Meters/water Meters installed at the inlet of the water supply connection for each of the purposes mentioned below for assessing the quantity of water used and ensuring that such meters are easily accessible for inspection and maintenance and for other purposes of the Act.
 - a. Industrial Cooling, Spraying in mine pits or boiler feed.
 - b. Domestic purpose.
 - c. Process.
6. The occupier shall maintain the Electro Magnetic Flow Meters with computer recording arrangement for measuring the quantity of effluent generated and treated for the monitoring purposes of the Act.
7. Log book for each of the unit operations of ETP have to be maintained to reflect the working condition of ETP along with the readings of the Electro Magnetic Flow Meters installed to assess effluent quantity and the same shall be furnished for verification of the Board officials during inspection.
8. The occupier shall at his own cost get the samples of effluent/surface water/ground water collected in and around the unit by Board officials and analyzed by the TNPC Board Laboratory periodically.
9. Any upset condition in any of the plants of the factory which is, likely to result in increased effluent discharge and result in violation of the standards mentioned in Sl. No.3 above shall be reported to the Member Secretary / Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
10. The occupier shall always comply and carryout the order/directions issued by the Board in this Consent Order and from time to time without any negligence. The occupier shall be liable for action as per provisions of the Act in case of non compliance of any order/directions issued.
11. The occupier shall develop adequate width of green belt at the rate of 400 numbers of trees per Hectare.
12. The occupier shall provide and maintain rain water harvesting facilities.
13. The occupier shall ensure that there shall not be any discharge of effluent either treated or untreated into storm water drain at any point of time.
14. In the case of zero liquid discharge of effluent units, the occupier shall adhere the following conditions as laid under.
 - i) The occupier shall ensure zero liquid discharge of effluent, thereby no discharge of untreated / treated effluent on land or into any water bodies either inside or outside the premises at any point of time.
 - ii) The occupier shall operate and maintain the Zero liquid discharge treatment components comprising of Primary, Secondary and tertiary treatment systems at all times and ensure that the RO permeate/Evaporator condensate shall be recycled in the process and the final RO reject shall be disposed off with the reject management system ensuring zero liquid discharge of effluents in the premises.
 - iii) The occupier shall operate and maintain the reject management system effectively and recover the salt from the system which shall be reused in the process if reusable or shall be disposed off as ETP sludge.
 - iv) In case of failure to achieve zero discharge of effluents for any reason, the occupier shall stop its production and operations forthwith and shall be reported to the Member Secretary/Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
 - v) The occupier shall restart the production only after ascertaining that the Zero discharge treatment system can perform effectively for achieving zero discharge of effluents.

Additional Conditions:



TAMILNADU POLLUTION CONTROL BOARD

1. The unit shall comply all the conditions prescribed in the Environmental Clearance issued by the DEIAA, Krishnagiri District vide Letter No. 03 / DEIAAKGI / EC.No.60 / 2018, Dated: 27.08.2018.
2. The unit shall execute the Mining Lease Agreement with the District Administration before commissioning of the quarrying activities and shall be complied with all the conditions prescribed in the same.
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's operation/ activity for the mining shall not disturb the nearby agricultural land if any at any circumstances.
6. The unit shall take necessary precautionary measures to prevent any adverse impact on the nearby habitation.
7. The consent issued is subject to the final outcome of National Green Tribunal (South Zone) in application No. 165/2013.
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.

S. Palanisamy Digitally signed by S. Palanisamy
District Environmental Engineer,
Tamil Nadu Pollution Control Board,
TOSUR



TAMILNADU POLLUTION CONTROL BOARD

GENERAL CONDITIONS



1. The occupier shall make an application along with the prescribed consent fee for grant or renewal of consent at least 60 days before the date of expiry of this Consent Order along with all the required particulars ensuring that there is no change in Production quantity and change in sewage effluent.
2. This Consent is issued by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished in the application will also be ground for review/variation/revocation of the Consent Order under Section 27 of the Act and to make such variation as deemed fit for the purpose of the Act.
3. The consent conditions imposed in this order shall continue in force until revoked under Section 27(2) of the Act.
4. After the issue of this order, all the 'Consent to Operate' orders issued previously under Water (Prevention and Control of Pollution) Act, 1974 as amended stands defunct.
5. The occupier shall maintain an Inspection Register in the factory so that the inspecting officer shall record the details of the observations and instructions issued to the unit at the time of inspection for adherence.
6. The occupier shall provide and maintain an alternate power supply along with separate energy meter for the Effluent Treatment Plant sufficient to ensure continuous operation of all pollution control equipments to maintain compliance.
7. The occupier shall provide all facilities to the Board officials for inspection and collection of samples in and around the factory at any time.
8. The occupier shall display the flow diagram of the sources of effluent generation and pollution control systems provided at the ETP site.
9. The solid waste such as sweepings, wastage, package, empty containers, residues, sludge including that from air pollution control equipments collected within the premises of the industrial plant shall be collected in an earmarked area and shall be disposed off properly.
10. The occupier shall collect, treat the solid wastes like food waste, green waste generated from the canteen and convert into organic compost.
11. The occupier shall segregate the Hazardous waste from other solid wastes and comply in accordance with Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008.
12. The occupier shall maintain good house-keeping within the factory premises.
13. All pipes, valves, sewers and drains shall be leak proof. Floor washings shall be admitted into the trade effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
14. The occupier shall ensure that there shall not be any diversion or by-pass of trade effluent on land or into any water sources.
15. The occupier shall ensure that solar Evaporation pans shall be constructed in such a way that the bottom of the solar pan is at least 1 m above the Ground level (if applicable).
16. The occupier shall furnish the following returns in the prescribed formats to the concerned District office regularly.
 - a) Monthly water consumption returns of each of the purposes with water meter readings in Form-I on or before 5th of every month.
 - b) Yearly return on Hazardous wastes generated and accumulated for the period from 1st April to 31st March in Form-4 before the end of the subsequent 30th June of every year (if applicable).
 - c) Yearly Environmental Statement for the period from 1st April to 31st March in Form -V before the end of the subsequent 30th September of every year (if applicable).
17. If applicable, the occupier has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances.
18. The issuance of this consent does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any natural watercourse or in Government Poramboke lands.
19. The issuance of this Consent does not convey any property right in either real personal property or any exclusive privileges, nor does it authorize any injury to private property or Government property or any invasion of personal rights nor any infringement of Central, State laws or regulation.

G. Parimal



TAMIL NADU POLLUTION CONTROL BOARD

20. The occupier shall forth with keep the Board informed of any accident or unforeseen act or event of any poisonous, noxious or polluting matter or emissions are being discharged into stream or well or air as a result of such discharge, water or air is being polluted.
21. If due to any technological improvements or otherwise the Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any treatment system, either in whole or in part) the Board shall, after giving the applicant an opportunity of being heard, vary all or any of such conditions and thereupon the applicant shall be bound to comply with the conditions as so varied.
22. In case there is any change in the constitution of the management, the occupier of the new management shall file fresh application under Water (Prevention and Control of Pollution) Act, 1974, as amended in Form-II alongwith relevant documents of change of management immediately and get the necessary amendment with renewal of consent order.
23. In case there is any change in the name of the company alone, the occupier shall inform the same with relevant documents immediately and get the necessary amendments for the change of name from the Board.
24. The occupier shall display this consent order granted to him in a prominent place for perusal of the inspecting Officers of this Board.

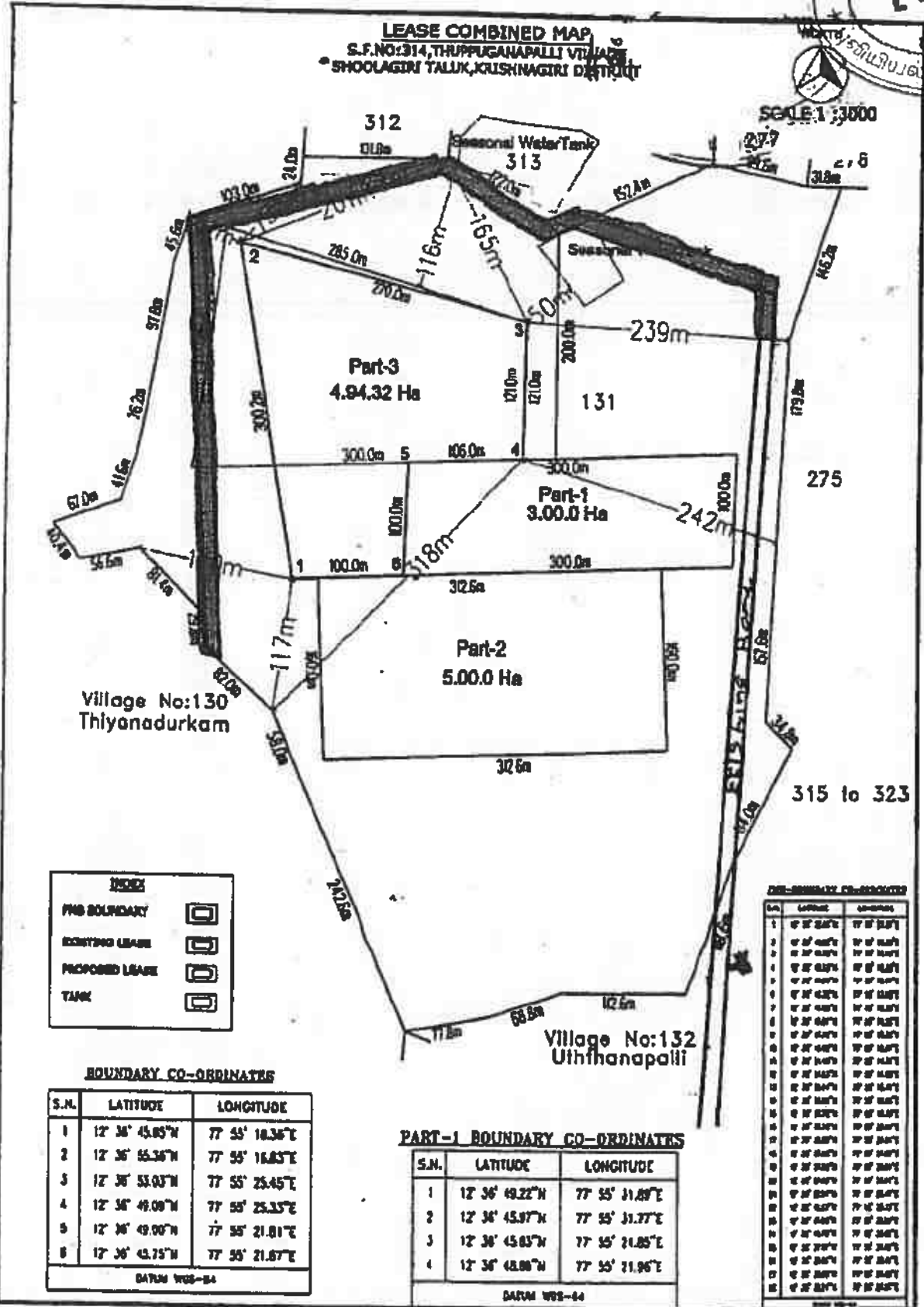
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District Environmental Engineer,
Tamil Nadu Pollution Control Board,
ROSUR

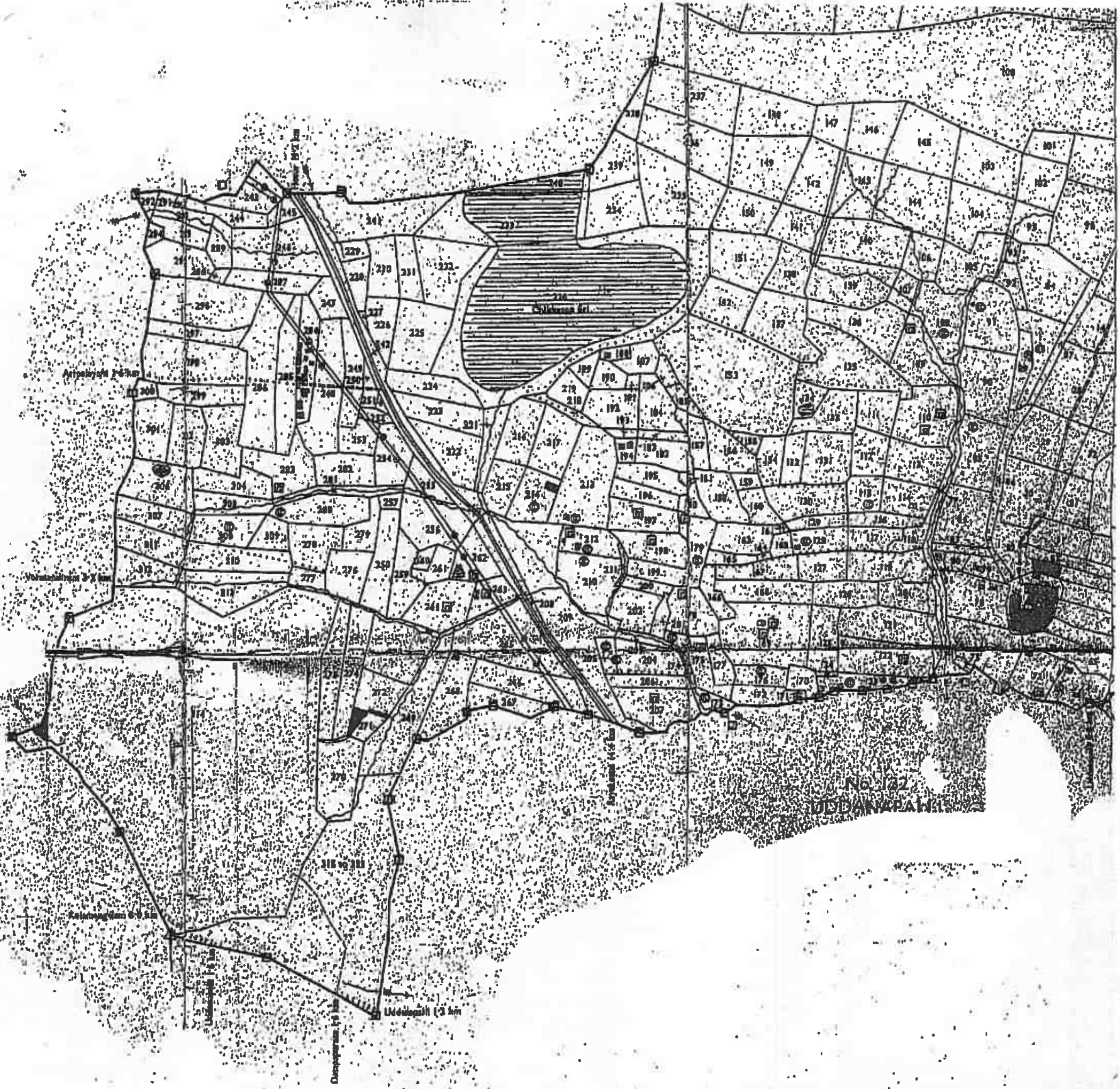

S. DHANASEKAR, M.Sc. (Geo)
Qualified Person

துணை இயக்குநர் அலுவலகம்
 20 OCT 2023
 திருச்செங்கோடு
 மதுரை மாவட்டம்



S. Dhanasekar
S. DHANASEKAR, M.Sc., (Geo)
 Qualified Person

G. Perumal



No. 122
DEBANAPATI

Prepared by Thiru K. S. RAMADHAN
Director of Survey, Government, Madras
S. K. RAMADHAN

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S. DHANASEKAR, M.Sc. (Geo)
Qualified Person
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சுவாமிநாதன்
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உங்கள் ஆதார் எண் / Your Aadhaar No. :

4029 1314 7336

ஆதார் - சாதாரண மனிதனின் அதிகாரம்



இந்திய அரசு
GOVERNMENT OF INDIA

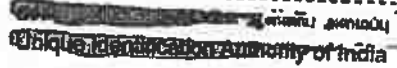

உருவம் / Name: Perumal G
பாலினம் / Gender: Male
DOB: 02/03/1983
4029 1314 7336



ஆதார் - சாதாரண மனிதனின் அதிகாரம்

Annexure
இணை இயக்கம்
20 OCT 2023
தேய்வகம்
* உறுதிப்படுத்தப்பட்டது *


இந்திய அரசு
GOVERNMENT OF INDIA


உருவம் / Name: S/O Gopal, A14, THALLY HUDCO, THALLY ROAD, Hosur, Krishnagiri, Ramnagar, Tamil Nadu, 635109
பாலினம் / Gender: Male
DOB: 02/03/1983
4029 1314 7336


S. DHANASEKAR, M.Sc., (Geo)
Qualified Person

G Perumal

From
Thiru L. Suresh, M.Sc.,
Deputy Director,
Geology and Mining,
Collectorate,
Krishnagiri.

To
Thiru. G.Perumal
S/o.Gopal ,
No.A14 Thali Hudco,
Thali Road,
Hosur Taluk,
Krishnagiri District.
dated 05.05.2018



Roc.214/2018/Mines

Sir,

Sub: Mines and Minerals - Krishnagiri District - Shoologiri Taluk -
Thuppukanapalli - Government Land in S.F.No.314(part-3) -
Over an extent of 4.94.32 Hectares - Precise area given for the
proposed grant of Quarry lease for Rough Stone for a period of
10 years from the date of execution of lease deed to
Thiru.G.Perumal S/o.Gopal - Draft Mining Plan submitted -
Mining Plan approved - reg.

- Ref: 1. The Krishnagiri District Gazette (Extraordinary) No.01
dated 19.01.2018.
2. The District Collector Krishnagiri Memorandum in
Rc.No.214/2018/Mines dated 09.03.2018.
3. Thiru.G.Perumal S/o.Gopal , No.A14 Thali Hudco , Thali
Road, Hosur Taluk, Krishnagiri District letter dated:
-oOo-

Thiru.G.Perumal S/o.Gopal , No.A14 Thali Hudco , Thali Road, Hosur
Taluk, Krishnagiri District had been given precise area over an extent of 4.94.32
hectares in Government Poramboke land in S.F.No.314(part-3) of
Thuppukanapalli village, Shoologiri Taluk, Krishnagiri District for a period of
Ten years from the date of execution of lease deed under Tender Cum Auction
System under the provisions of Tamil Nadu Minor Mineral Concession Rules, 1959
and he had been directed to submit the approved mining plan and Environmental
Clearance from the State Level Environmental Impact Assessment Authority
Tamilnadu vide reference 2nd cited.

2. In the reference 3rd cited Thiru.G.Perumal S/o.Gopal has submitted
draft Mining Plan for approval for the proposed rough stone quarry lease over an
extent of 4.94.32 hectares in Government Poramboke land in S.F.No.314(part-3) of
Thuppukanapalli village, Shoologiri Taluk, Krishnagiri District for a period **Ten**
years from the date of execution of lease deed.

3. The Mining Plan submitted by Thiru.G.Perumal S/o.Gopal has been
scrutinized as per the guide lines/ Instructions issued by the Commissioner of
Geology and Mining, Chennai-32 in Rc.No.3868/LC/2012 dated 19.11.2012. The
mining plan is prepared in accordance with the guide lines/ instructions issued
and tallies with the field conditions.

4. Hence as per the guide lines/ instructions issued by the Commissioner of
Geology and Mining, Chennai, the said mining plan is hereby approved subject to
the following conditions.

- i) That the mining plan is approved without prejudice to any other law
applicable to the quarry lease from time to time whether such laws
are made by the Central Government, State Government or any other
authority.

connected laws including Forest (Conservation) Act 1957, or any other connected Laws industry Forest (Conservation) Act 1980, Forest Conservation Rules 1981 Environment protection Act 1980, Indian Explosive Act 1884 (Central Act IV of 1884) and the rules made There under, Minor Mineral Conservation and Development Rules, and The Tamil Nadu Minor Mineral Concession rules, 1959.

- iii) That the mining plan is approved without prejudice to any other order or directions from any court of competent jurisdiction.
- iv) The applicant has incorporated all the conditions and details given in the District Collector, Krishnagiri Memorandum in Roc.No.214/2018/ Mines dated 09.03.2018 and the conditions should be adhered without any omission during quarrying.
- v) The applicant should get prior clearance from the State level Environment Impact Assessment Authority, Chennai -15 and should submit it to the District Collector, Krishnagiri.

5. The details of other quarries situated within a radial distance of 500 mts. from the lease granted area is

Sl. No.	Name of the Applicant/Lessee	Taluk / Village	S.F.No.	Extent In Hect	Collector's Proceedings No. & date	Lease period
1	G. Perumal, S/o Gopal A-14, Thally Hudco, Thally road, Hosur 635109.	Thuppuganapalli Shoolagiri Taluk	314 (P-1)	3.00.0	Roc. 97/2016 (Mines-) Dt. 04.8.2016	10.08.2015 to 09.08.2025
2	G. Perumal, S/o Gopal A-14, Thally Hudco, Thally road, Hosur 635109.	Thuppuganapalli Shoolagiri Taluk	314 (Part-2)	5.00.0	Roc. 703/2005 (Mines-2) Dt. 12.08.2015	12.09.2005 to 11.09.2015
3	G. Perumal, S/o Gopal A-14, Thally Hudco, Thally road, Hosur 635109.	Thuppuganapalli Shoolagiri Taluk	314 (Part-3)	4.94.32	Rc.214/2018/Mines dated 09.03.2018	Instant Proposal
Total =				12.94.32		

Deputy Director, 1/8
Geology and Mining,
Krishnagiri.

- Copy submitted to: 1. The Chairman, State Level Environment Impact Assessment Authority, 3rd Panagal maligai, No.1 Jeenes Road, Saidapet, Chennai -15.
2. The Commissioner of Geology and Mining, Guindy, Chennai -32.

S. Dhanasekar
S. DHANASEKAR, M.Sc., (Geo)
Qualified Person



भारत सरकार
Govt. of India
श्रम एवं रोजगार मंत्रालय
Ministry of Labour & Employment
खान सुरक्षा महाविदेशालय
Directorate-General of Mines Safety



NO: 51250195|SZ|Bengaluru Region|Perm|2023|256372

Date: 21/08/2023

प्रेषक/From,

खान सुरक्षा निदेशक/The Director of Mines Safety,
बंगलूरु क्षेत्र, बंगलूरु./Bengaluru Region, Bengaluru-560071.

सेवा में/To

G Perumal Rough Stone Quarry (Pit – 1 RC NO 97/2016 & Pit – 2 RC No 214/2018; Mine Code: 51250195; LIN: 2-4155-5268-3),
Owner: Shri G Perumal,
(Pit-1 RC NO 97/2016) Survey No.314(P-1), lease area 03-00 hectares & Pit-2 (RC No 214/2018) survey No: 314(P-3)area 04-94-32 Hectares in Thuppuganappalli Village, Shoolgiri Taluk, Krishnagiri District, Tamil Nadu.

विषय/Subject: Permission under Regulation 106(2)(b) of the Metalliferous Mines Regulations, 1961, to work with Heavy Earth Moving Machinery (HEMM) with Deep Hole Drilling (100mm) & Blasting at G Perumal Rough Stone Quarry (Pit – 1 RC NO 97/2016 & Pit – 2 RC No 214/2018) belonging to Owner:Shri G Perumal.

महोदय/ Sir,

Reference to your application, submitted online vide reference no: 51250195|SZ|Bengaluru Region|Perm|2023|256372 dated 15/05/2023 and off-line documents including Surface Plan No: GPTPERUMAL314(PART-3) 4.94.32 Ha & GPTPERUMAL 314(Part-1) 3.00.0 Ha COMMON BOUNDARY MINE/06/2023 Dated 15/03/2023 submitted vide No.GPRSQ/DGMS/2023/02 dated 15.05.2023 on the above subject.The matter has since been examined in the light of what has been stated in your application under reference and related documents including surface plan.

In exercise of the powers conferred on the Chief Inspector of Mines (also designated as Director General of Mines Safety) under the provisions of clause (2)(b) of Regulation 106 of the Metalliferous Mines Regulations, 1961 and by virtue of the authorization granted to me by the Chief Inspector of Mines (also designated as Director General of Mines Safety) under Section 6(1) of the Mines Act, 1952, I hereby permit to work with Heavy Earth Moving Machinery (HEMM) with Deep Hole Drilling (100mm) & Blasting with in the lease hold area at G Perumal Rough Stone Quarry (Pit – 1 RC NO 97/2016 & Pit – 2 RC No 214/2018) belonging to Owner:Shri G Perumal in the area demarcated as Pit1, BP-01, BP-1A, BO-02, BP-2A, BP-2B, BP-2C, BP-2D, BP-2E, BP-03, BP-3A, BP-04, BP-4A, BP-4B, BP-4C, BP-4D, BP-4E, BP-01 and Pit2 as BP-1, BP-1A, BP-1B, BP-1C, BP-1D, BP-1E, BP-1F, BP-02, BP-2A, BP-2B, BP-2C, BP-2D, BP-2E, BP-03, BP-3A, BP-3B, BP-04, BP-4A, BP-4B, BP-05, BP-5A, BP-06, BP-6A, BP-01 as shown in their Surface Plan No: GPTPERUMAL314 (PART-3) 4.94.32 Ha & GPTPERUMAL 314 (Part-1) of 3.00.0

Ha and plan No; COMMON BOUNDARY MINE/06/2023 Dated 15/03/2023 subject to the following conditions being strictly complied with;

1.0 GENERAL:

1.1 Except where otherwise provided for in this permission, all provisions of the Metalliferous Mines Regulations, 1961 relating to opencast workings, use of explosives and use of machinery shall be strictly complied with.

1.2 The mine shall be placed under the sole control of mine manager holding valid Manager's Certificate granted under the Metalliferous Mines Regulations, 1961 framed under the Mines Act, 1952.

1.3 Mine shall only be worked in daylight hours.

1.4 No person shall be employed in the mine unless he has been imparted vocational (V.T.) training as required under Rule 6 to 9 and on-the-job training(s) as required under Rule 13 to 15 of the Mines Vocational Training Rules, 1966.

1.5 The details of all persons including contractual persons employed in the mine shall be entered in Form 'A' as required under Section 48 of the Mines Act, 1952 and Rule 77 of the Mines Rules, 1955 and kept maintained in the office of the mine.

1.6 No person shall be employed in the mine unless the attendance is recorded in registers. The mine management may maintain such attendance in electronic form as stated in the Gazette Notification Vide No: G.S.R. 154(E) dated 21st February 2017 published in EXTRAORDINARY PART II—Section 3—Sub-section (i) under Ease of Compliance to Maintain Registers under various Labour Laws Rules, 2017 which shall be accessible in the office of the mine.

1.7 Hours and limitation of employment in respect of above ground and opencast workings as prescribed in Section 28 to 35 of the Mines Act, 1952 shall be applicable for contractual employee However to ensure constant statutory supervision in the mine, the shift / relay timings of contractor's workers and departmental workers shall be the same.

1.8 The management shall indemnify the occupants/owners of the houses/ dwellings/ buildings or public authority of any structure(s), if any, against the dangers to those properties or injury to them or other persons arising out of operations conducted under this permission.

1.9 Separate permission under Regulation 164(1-B)(a) of the Metalliferous Mines Regulation, 1961 shall be sought to conduct controlled blasting from this Directorate.

1.10 No blasting shall be conducted using SME/SMS/ANFO explosive without having valid permission obtained under Regulation 155(1) & 162(5) of Metalliferous Mines Regulations, 1961.

1.11 This Directorate shall be informed as soon as the mining operations are commenced in accordance with the above relaxation. Intimation about completion of the mining operation shall also be sent promptly and in any case not later than one month thereafter.

2.0 OPENCAST WORKING:

2.1 HEIGHT & WIDTH OF BENCHES:

2.1.1 The height of benches in overburden, ore body or other rock formation shall not be more than 6.0m or maximum digging height of the smallest machine used for digging, excavation or removal, whichever is less.

2.1.2 Width of any bench shall not be less than;

- (a) width of the widest machine plying on the bench plus 2 m, or
- (b) if dumpers ply on the bench, 3 times the width of the dumper, or
- (c) the height of the bench, whichever is more.



2.1.3 When persons are employed at the working face, adequate precautions shall be taken to ensure their safety by dressing the sides of the bench.

2.1.4 Formation of benches shall be done from top downwards.

2.1.5 No person/s shall be engaged on work or allowed to travel close to high sides / benches, from where likely to fall more than 1.8 meters vertically down, unless the personnel is / were provided with and uses a safety belt/full body harness or a rope or lifeline.

2.1.6 Sufficient number of safety belts/full body harness shall be available at the site and shall be ensured for use of the same.

2.2 PRECAUTIONS AGAINST SURFACE STRUCTURES:

2.2.1 Before starting any quarrying operations, all dwellings, buildings, roads, public structures whether belonging to the owner or not shall be vacated/diverted and demolished within the mine boundary.

2.2.2 No working shall be made or extended to any point within 45 m of any railway or of any public works or of any public road or building or of other permanent structure not belonging to the owner of the mine, in any direction of the mine without the prior permission from this Directorate.

2.2.3 The detailed blasting parameters shall be maintained in a bound paged book kept for the purpose which shall be signed & dated by the manager.

2.2.4 The following shall also be recorded in the bound paged book mentioned in 2.2.3 when structures / dwellings / buildings, not belonging to owner, exist within a distance of 500m from the mine boundary:

- a. The distance of instrument from the nearest blast hole for measuring peak particle velocity (PPV) produced due to blasting.
- b. The distance travelled by the fly rock, ejected due to blasting, from the farthest hole
- c. PPV (in mm/second), produced due to blasting, shall be measured at a distance of 100m from the blasting site in line with the nearest structures/dwellings/buildings, not belonging to the owner and at other strategic places. PPV shall be maintained as per standards for every blast. Noise levels are also to be measured in dB.
- d. A suitable shelter of adequate construction shall be provided for positioning instrument and person making observations.

2.2.5 Provisions of DGMS (Tech) Circular No.7 of 1997 (Damage of structures due to blast induced ground vibrations) & 8 of 1982 (Danger from blasting operations in opencast workings), and other circulars/Instructions issued from time to time for the safe operating procedure shall be strictly complied.

2.3 FENCING AROUND OPENCAST WORKING:

2.3.1 The top edge of the opencast workings whether moving, abandoned or others shall be kept fenced with wire rope strands or barbed wire, supported by (movable) posts of timber, iron, or concrete. The gap between the adjacent rope strands or wires shall not be more than 0.30 meters and bottom most member shall not be more than 0.25 meters and the top most member shall not be less than 1.0 meters from ground level.

2.3.2 At the finishing stage, opencast workings shall be fenced with masonry wall using cement concrete not less than 0.40 meters thick and not less than 1.5 meters high, with a parapet top.

2.4 ROADS FOR TIPPERS / AND DUMPERS ETC:

2.4.1 All roads for tippers / dumpers or other mobile machinery shall be maintained in good condition.

2.4.2 Wherever practicable, all roads from the opencast workings shall be arranged to provide one-way traffic. Where one-way traffic it is not practicable, no road shall be of width less than three times plus 5m width of the largest vehicle plying on road.

2.4.3 All corner and bends shall be made in such a way that operator of tippers and dumpers have clear view of distance of not less than 3 times the braking distance of largest HEMM working at 40Km/hour.

2.4.4 Where it is not possible to ensure a visibility for a distance as mentioned in clause (2.4.3), there shall be provided with two roads, each having width not less than 2 times plus 3m of largest vehicle plying on the road with a strong road divider at center with adequate lighting and reflector along the divider.

2.4.5 Where any road existing above level of surrounding area it shall be provided with strong parapet wall/embankment of following dimensions:

(a) Width at top-not less than 1 m.

(b) Width at bottom-not less than 2.5 m.

(c) The height not less than the diameter of the tyre of largest vehicle plying on the road. It may be noted that just dumping of mud or OB shall not be treated as strong parapet wall.

2.4.6 No road shall have gradient more than 1 in 16. However, the ramps with 1 in 10 gradient shall not be for more than 10m at one stretch.

3.0 SUPERVISION:

3.1 A person possessing First Class Manager's Certificate of Competency or a person possessing authorisation under Regulation 34 of the Metalliferous Mines Regulations, 1961 shall be appointed as the Manager of the mine.

3.1.1 This permission shall be deemed to be revoked as soon as the appointed manager ceases to work at the mine or tender resignation or terminated from service or the authorization granted under regulation 34 (6) of the Metalliferous Mines Regulations, 1961 is expired.

3.1.2 Use of HEMM shall be suspended in the absence of manager with aforesaid qualification.

3.1.3 An Engineer or other competent person depending upon the scale of the machinery shall be appointed to hold general charge of the machinery and to be responsible for its installation maintenance and safe working. He shall be assisted by sufficient number of competent persons.

3.1.4 During every production shift/relay, the opencast workings shall be placed under the charge of an assistant manager (second class)/ foreman and during maintenance shift/relay, the workings shall be placed under the charge of at least a foreman, who shall be responsible for seeing that all the regulations and orders made thereunder are strictly complied with.

3.1.5 Adequate number of supervisors, including duly qualified personnel having Second Class Manager Certificate of Competency / Foremen Certificate of Competency and Mining Mate Certificate of Competency shall be appointed in each working shift / relay to assist the Manager. Assistant



Manager, Foreman, and Mining Mate so appointed shall be responsible for seeing that all the regulations and the orders made there under are strictly complied with.

3.1.6 The deep hole drilling and blasting shall be carried out under the personal supervision of at least Second Class Certificate Holder. Blasting parameters of each blast with a sketch showing the drilling pattern and the holes charged shall be maintained in register kept for the purpose for each blast.

3.1.7 If the Manager is Second Class Certificate holder the following additional conditions will come into force;

- a. Deep hole drilling machineries not exceeding 100mm diameter shall be deployed with maximum two excavators with tippers in the mine.
- b. Drilling and blasting shall be carried out under the personal supervision of the manager. Blasting parameters of each blast with a sketch showing the drilling pattern and the holes charged shall be maintained in register kept for the purpose for each blast. The consumption of explosives shall be less than 500 kg per day.
- c. No ore dressing / handling / processing plant is attached with the mine.

3.1.8 Persons engaged in mining operation and including the contractor's workers shall be provided closer and competent supervision.

3.1.9 Manager shall authorize all contractor workers before deploying in opencast working.

3.1.10 Each and every operation, including the operation carried out through contractor's worker or by outside agency, shall be placed under the charge of a competent supervisor, duly appointed, and authorized by the Manager.

3.1.11 Manager shall frame Safe Operating Procedure (SOP) in local language understood by most of person employed for each operation / equipment and copy of it shall be handed over to all concerned. It shall be the duty of all statutory persons to enforce the SOPs' so framed.

3.2 The Manager shall not manage more than one mine.

3.3 DUTIES OF MANAGER:

3.3.1 It shall be duty of Manager,

- a. to ensure compliance with the aforesaid precautions.
 - b. to determine compliance and specify in respect of every vehicle the maximum load to be hauled and maximum speed of the vehicle and cause notices specifying the same to be posted along the road at appropriate places;
 - c. to cause warning notices (drawing attention to any necessary precautions) to be posted along the truck or haulage roads at appropriate places like crossing, curves and turning points etc.
 - d. to designate the persons authorized to ride on trucks
- to give every truck driver direction in writing with respect to loads, speed, persons authorized to rides on trucks and precautions necessary for safe running
- e. to countersign entries in books and records to be maintained in pursuance of these precautions

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f. to take such other precautionary measures as may be necessary to ensure safe operation and maintenance of transport vehicles and for the safe work persons.

3.3.2 Manager shall ensure that,

- a. Frequent inspections are made for evidence of slides or of material that may slide or roll from the high wall (including the face and sides) or spoil banks;
- b. No person shall be allowed to work under overhanging ledges or where there is evidence of slides, until such danger has been removed;
- c. Every person engaged in dressing operations on high walls/sides is provided with, and uses, a safety belt of a type approved by the Chief Inspector;
- d. All loose material is removed from high wall / slide before persons are engaged there and;
- e. Parapet walls along truck roads are properly maintained.

4.0 DESIGN & MAINTENANCE OF HEAVY EARTH MOVING MACHINERY (HEMM):

4.1 Every Heavy Earth Moving Machinery shall be maintained in good and safe working condition. For this purpose the layout of the workshop for maintenance of HEMM and other equipments shall be as per requirement mentioned in the DG's Circular No. 8 of 2003.

4.2 Every Heavy Earth Moving Machinery shall be provided with;

- (i) adequate front and rear lights;
- (ii) efficient brakes;
- (iii) Audio-Visual warning device, which shall be actuated automatically to produce both audible and visual warning system during reversal of machinery;
- (iv) any other advanced mechanism like rear vision system etc.

4.3 Every shovel shall be so designed as to afford the operator clear and uninterrupted vision all around.

4.4 Operators cabin of every HEMM shall be well designed and substantially built so as to ensure adequate protection to the operator against heat, dust, noise etc., and at the same time provide adequate safety to the operator in the event of overturning of heavy earth moving machinery. A seat belt & seat belt reminder for the operator shall also be provided.

4.5 The code of instructions furnished by the manufacturers in the matter of maintenance of various machinery and vehicles and preventive maintenance schedules for each type of machinery and vehicle shall be strictly followed.

4.6 Every machine shall be allocated at least one day in every week for maintenance. Before the machine is sent out for work after maintenance, it shall be thoroughly inspected by the engineer or other competent person authorized by the Manager in writing, who shall satisfy himself that the machine is mechanically sound and in efficient working order.

4.7 A report of every inspection made under clause (4.6) shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the inspection and countersigned by the engineer.

4.8 Every machine in use shall be thoroughly inspected once at least in every 24 hours by a competent person duly authorized by the Manager of the mine.



- 4.9 If the engineer or other competent person making inspection, notices any defect in any machinery, the said machinery shall not be used until the defect has been remedied.
- 4.10 Any defect in a machinery reported by its operator shall be promptly attended to.
- 4.11 Any machine found to be in an unsafe operating condition shall be tagged at the operator's position "OUT OF SERVICE, DO NOT USE" and its use shall be prohibited until the unsafe condition has been corrected.
- 4.12 All repair to machinery shall be done at a location, which will provide a safe place for the persons engaged on repairs.
- 4.13 Except for testing, trial, or adjustment, which must necessarily be done while the machine is in motion, every machine shall be shut down and positive means taken to prevent its operation while any repair or manual lubrication is being done.
- 4.14 Any machinery, equipment, or part thereof which is suspended or held apart by use of slings, hoists, jacks shall be substantially blocked or cribbed before men are permitted to work underneath or between such machinery, equipment or part thereof.
- 4.15 Power shall be disconnected when repairs are made to any electrical machinery.
- 4.16 While inflating tyres of transport vehicles, suitable protective cages shall be used. Tyres shall never be inflated by standing/sitting either in the front or on the top of the same.
- 4.17 Only such fitters or mechanics, who possesses driving license under Motor Vehicles Act, 1988, wherever applicable, shall be authorized by the Manager to test-run the HEMM.
- 4.18 The brakes of all tippers / dumpers and other transport machinery shall be tested at least once in every fortnight by a competent person duly authorized by the manager of the mine in manner detailed below:
- Service Brake Test:** The Service brake shall be tested with the tippers are fully loaded condition on a specified gradient and speed. It shall stop within a specified distance by the manufacturer of the vehicle when the service brake is applied.
- Parking Brake Test:** The parking brake shall be capable of holding the tippers are when fully loaded and placed on maximum gradient of roadway which is permitted, for a period of at least ten minutes.
- However, DGMS (Tech) Circular No. 04 of 2012 (Accidents due to dumpers from failure of brake & steering systems) and other circulars/Instructions issued from time to time for the safe operating procedure shall be strictly complied.
- 4.19 A record of all such test shall be maintained in a bound paged book kept for the purpose and shall be signed by the competent person carrying out the test and countersigned by the engineer and manager of the mine.
- 4.20 Every dumper/tipper shall be provided with automatically operating audio-visual reversing alarm, which shall always be kept in working order.
- 4.21 No person shall be permitted to work on the chassis of tipper / dumper with the body in a raised position until the tipper / dumper body has been securely blocked position. The mechanical hoist mechanism alone shall not be depended upon to hold the body of the tipper / dumper in raised position.
- 4.22 All HEMM shall be equipped with suitable portable fire extinguisher(s) in addition to automatically operated fire detection and suppression device or System.

4.23 Hydraulic hoses, electric wires, sleeves, and conduits (where cable/wire is passed) of fire-resistant quality shall be provided in all HEMM.

4.24 No tractor-trailer combination shall be allowed on haul roads. (Where inevitable, only four wheel trailers with separate brakes of their own shall be used).

5.0 IN addition to General requirement mentioned above, the following safety devices / features specific to machines shall be provided:

5.1 (A) In dumper:

- (a) Mechanical steering locking to prevent untoward movement of steering wheel and tyre during work persons working below the cabin while engine is running.
- (b) Mechanical type device to protect operator in case of head to tail collision of dumpers.
- (c) Limiting speed device to limit the speed as per working conditions.
- (d) Propeller shaft guard.
- (e) Proximity warning device
- (f) Dump body raised position indicator with warning.
- (g) Retarder system in addition to service, parking and dump brakes.
- (h) Rock ejectors for tandem tyres.
- (i) Body raised position mechanical locking arrangement
- (j) Engine cut off arrangement / battery cut-off switch on front lower portion of the dumper.
- (k) Warning system for operator fatigue
- (l) Load indicator.
- (m) Auto Dipping System
- (n) Rear vision camera
- (o) Exhaust brake

(B) In Tippers:

- (a) Cabin guard extension / canopy fully covering operator's cabin.
- (b) Exhaust/retard brake.
- (c) Propeller shaft guard
- (d) Limiting speed device
- (f) Dump Body raised position indicator with Warning.
- (h) Dump body stabilizers.
- (i) Proximity warning device.



- (j) Auto dipping System
- (k) Load Indicator.
- (l) Rear vision camera
- (m) Warning system for Operator Fatigue

(C) Hydraulic Excavators:

- (a) All functions cut off switch
- (b) Swing Motor Brake and Swing lock
- (c) Parking Brake.
- (d) Vent valve on top of hydraulic tank (should be able to be removed without any tool).
- (e) Provision for Limiting of hydraulic cylinders-Stoppers.
- (f) Battery cut off switch outside cabin
- (g) Two-way communication system other than mobile phone in Operator's Cabin.

(D) Rope Shovels & Draglines (where applicable)

- (a) All functions, such as Crowd, Hoist, Swing, Propel and Drag shall be provided with 'ON' type brake so as to automatically apply the brake in case of Electrical power failure.
- (b) Travel limit switches for crowd, hoist and Drag functions as applicable.
- (c) Limit switch for boom movement.
- (d) Two-way communication system other than mobile phone in Operator's Cabin
- (e) Boom crack monitoring system in Draglines.

(E) DRILLS:

- (a) Dust prevention or suppression system provided in the Drills shall confirm to DGMS circular no. DGMS(S&T)/ circular (Approval) No 1, dated 10.03.2017.
- (b) Emergency 'Stop' push button in
 - (i) Operator's cabin
 - (ii) Main frame.
 - (iii) Propeller pendent
 - (iv) Rear end
- (c) Over Temperature protection devices, in motor winding and other related parts.
- (d) Explosive vent in transformer.
- (e) Interlock between propel and drilling operations.

- (f) High air discharge temperature trip switch
- (g) Low lube oil pressure cut off switch (engine and compressor)
- (h) Oil stop valve (electric solenoid valve in compressor lubrication line)
- (i) No bump circuit
- (j) Tower lock.
- (k) Propel joystick-spring loaded type to return to neutral (dead man safety)
- (l) Lock check valves for preventing creeping in drill
- (m) Unloader valve
- (n) Stabilizers
- (o) Breakout wrench
- (p) Each moving part of the machinery shall be guarded/fenced and also its effectiveness ensured all the time.
- (q) Turbo charger guard
- (r) Cabin for the operator.
- (s) Disc- brake and brake valve and its testing parameters.

5.2 Suitable steps shall be taken to ensure the minimum design requirements for various Safety Features to be incorporated for use in Heavy Earth Moving Machinery (HEMM) & Heavy / Light vehicles in Open Cast Mines mentioned at Point No. 4.0 & 5.0. In this connection, the requirements of DGMS (Tech.) circular No's 06 of 2020 Dated 27.02.2020 shall be strictly complied with.

6.0 DAILY EXAMINATION OF HEMM: At the commencement of every shift / relay, the Engineer, or other authorized competent persons herein after called "competent person" shall personally inspect and test every HEMM paying special attention to the following details:

- 6.1 That the brakes and the horn or other warning devices are in working & is required to work after day light hours.
- 6.2 Competent person shall not permit the HEMM to be taken out for work nor shall drive the unless it is satisfied mechanically sound and in efficient working order.
- 6.3 Competent person shall also maintain a record of every inspection in a bound paged book kept for the purpose. Every entry in the book shall be signed and dated by the person making the inspection.

7.0 OPERATION OF HEAVY EARTH MOVING MACHINERY (HEMM).

- 7.1 No person other than the operator so authorized in writing by the Manager shall operate the machinery (HEMM).
- 7.2 Operator of each HEMM shall be selected from amongst persons possessing requisite qualifications. The selection process shall comprise a test to check operating skill, aptitude, health, and oral examination of the candidate by a competent selection committee. The selected person shall be trained and their competency shall be evaluated by a board constituted by the mining company.

7.3 The Manager of the mine shall frame a Standard Operating Procedure (SOP) / Code of Practice (COP) for safe operation of heavy earth moving machinery and ensure its compliance.

7.4 To prevent unauthorized operating, a system shall be evolved whereby the ignition key and/or cabin key always remain with the driver/operator or with specifically designated competent person.

7.5 As far as possible, loaded tippers / dumpers shall not be reversed on gradients.

7.6 While reversing a tippers / dumpers at dump yard/stopping point suitable mechanism like stop blocks/earthen bund etc. shall be provided to prevent / tippers / dumpers from approaching towards edge of dump.

7.7 "The Code of Traffic Rules" shall be framed by the Mines Manager for the movement of all tippers / dumpers and shall be prominently displayed in Multi language or the language understood by persons employed at the relevant places as decided by Mines Manager in the opencast workings of the mine and shall strictly complied with:

7.8 When not in use every tippers / dumpers or other transport machinery shall be moved to and parked at proper parking places.

7.9 No shovel or excavator shall be operated in a position where any part of the machine, suspended loads or lines are brought closer than three meters to exposed high voltage lines, unless the current has been cut off and the line de-energized. A notice of this requirement shall be posted at the operator's control panel.

7.10 Electrical cables, if any shall be laid in such a manner that they are not endangered either by falling rocks or by mobile equipment.

7.11 If more than one stripping machine is in use in any area, either on the same bench or on different benches the machines shall be so spaced that there is no danger of accident from flying or falling objects etc. from one machine to the other.

7.12 No unauthorized person shall be permitted to enter or remain in any dumping yard or turning points.

7.13 While HEMM is being loaded / unloaded on a gradient, the same shall be secured on a stationary position by parking brake and any other suitable mechanism.

8.0 DUTIES OF OPERATORS OF HEAVY EARTH MOVING MACHINERIES, EXCLUDING TIPPERS AND DUMPER.

8.1 At the commencement of every shift / relay, the operator shall personally inspect and test the machine and protective devices, as stipulated in this respect by the engineer in consultation with the Manager and manufacturer/supplier. Maintain a record of every such inspection in a bound paged book kept for the purpose and shall sign every entry made therein.

8.2 Operator shall not take out the machine for work nor shall work the machine unless satisfied that machines are mechanically sound in efficient working order.

8.3 The operator shall not operate the machine when persons are in such proximity as to be endangered.

8.4 Operator shall not swing the bucket of a shovel over the passing haulage units or over the cabin of units being loaded.

8.5 Lower the bucket to ground, switch- off the power supply to the machine or stop the prime mover and lock the cabin door before leaving the machine

8.6 The operator shall not allow any unauthorized person to ride on the machine.



G. Parimal

8.7 It is required to strictly adhere to the codes of practices and safe operating procedures while operating the machinery.

8.8 It is required to enter the condition of the machine at the end of his shift in the register or book maintained under the clause (8.1) for necessary information of his successor.

9.0 DUTIES OF TIPPERS / DUMPER OPERATORS:

9.1 At the commencement of every shift / relay, the operator shall personally inspect and test the machine and protective devices, as stipulated in this respect by the engineer in consultation with the Manager and manufacturer/supplier.

9.2 Maintain a record of every inspection made under clause (9.1) in a bound paged book kept for the purpose and shall sign every entry made therein:

9.3 Operator shall not take out the machine for work nor shall operate the machine unless it is satisfied that it is mechanically sound and in efficient working order.

9.4 Operator shall not drive too fast, shall avoid distraction, and shall drive defensively. There shall not any attempt to overtake another machine unless operator can see clearly far enough ahead to be sure that can pass it safely giving an audio warning signal before overtaking.

9.5 When approaching stripping equipment, the operator of the tippers / dumpers shall sound the audio-visual warning signal and shall not attempt to pass the stripping equipment until driver has received a proper audio-visual signal in reply.

9.6 Before crossing a road or railway line, operator shall reduce the speed, look in both directions along the road or railway line, and shall proceed across the road or line only if it is safe to do so.

9.7 The operator shall sound the audible warning signal before while approaching 'blind' corners or any other points from where persons may walk in front unexpectedly.

9.8 The operator shall not operate the tipper / dumper in reverse unless an adequate clear view of the area behind the machine.

9.9 Operator shall give an audio-visual warning signal before reversing a tipper / dumper.

9.10 The operator shall be sure of clearance before driving through tunnels, archways, plants, structures etc.

9.11 The operator shall see that the machine is not overloaded and that the material is not loaded in a tipper / dumper so as to project horizontally beyond the sides of its body and that any material projecting beyond the front or rear is indicated by a red flag during day and a red light after day light hours.

9.12 The operator shall not allow any unauthorized persons to ride on the machine.

9.13 As far as possible loaded tippers or dumper shall not be reversed on gradient.

9.14 Strictly adhere to the traffic rules and safe operating procedures while operating the machinery.

9.15 Enter the condition of the machine at the end of his shift in the register or book maintained under the clause (9.2) for necessary information of his successor.

10.0 DUTIES OF DRILL OPERATORS

10.1 At the beginning of the shift / relay, the drill operator shall examine the drilling equipment and satisfy himself that –



- a. Crown blocks are mounted securely
- b. Where compressed air drills are used, all hose's connections are in order
- c. The drill equipment is in safe working condition.

10.2 The drill operator shall ensure that-

- a. Persons keep clear of augur and drill stem while the drill is in motion
- b. Persons do not work or stand under suspended tools, when tools are removed from the holes, these shall be lowered on the platform.
- c. All finished drill holes are properly plugged so as to avoid possible leg injuries to any one accidentally stepping in to the holes.

11.0 ADDITIONAL DUTIES ENGINEER IN CHARGE OF HEMM IN OPENCAST WORKINGS:

11.1 During each shift / relay the HEMM and vehicles at work shall be placed under the charge of qualified and experienced Engineer for inspection, examination, safe operations and maintenance of the HEMM. During the shift / relay the competent shall;

- (a) inspect, examine machines, equipment's satisfy himself that they are in sound and safe working order;
- (b) not allow any machine and vehicles to be used, if it is found defective;
- (c) ensure that HEMM used is in a safe and efficient order;
- (d) ensure that each operation, activity is carried on in safe and efficient manner.

11.2 Surprise inspection shall be carried out by the Engineer / competent person / Superior official at an interval not exceeding 15 days to ensure that the examination schedule of machinery / equipment is carried out and the same shall be recorded in the bound paged book kept for the purpose and signed by the engineer.

12.0 SPOIL BANKS:

12.1 The spoil bank shall be designed and maintained scientifically paying special attention to the following details:

- a. Spoils, overburden or debris shall be deposited at places belonging to the mine and duly approved by the Manager in writing.
- b. Spoils, overburden or debris shall not be deposited beneath transmission, telephone or power lines or near any public structures.
- c. The slope of a spoil bank face shall be determined by natural angle of repose of the material being deposited, but shall in no case exceed 37.5 degree from the horizontal. The spoil bank face shall not be retained by artificial means at an angle in excess of its natural angle of repose.
- d. Spoils, overburden or debris shall not be deposited within 45 m of a railway or other structures and it shall not be permitted to approach any of the above said structures closer than a distance equal to 1.5 times the vertical height of its face.

12.2 The toe of the spoil bank shall not approach Railway or other public works, public road or building or other permanent structures not belonging to the owner of the mine closer than a distance equal to twice the vertical height of the spoil bank.

12.3 A suitable fence shall be provided between any railway or public works or road or building or structure and the toe of an active spoil-bank so as to prevent unauthorized persons from approaching the spoil bank.

12.4 No person shall, or shall be permitted to approach the toe of an active spoil bank where it may be endangered from material rolling down the face. Suitable signs for warning the persons at conspicuous places shall also be displayed.

12.5 Any spoil bank exceeding 30 meters in height shall be benched so that no bench exceeds 30 meters in height and general slope does not exceed 1 vertical to 1.5 horizontal.

12.6 Wherever space permits, every mine shall establish a system whereby loading and unloading operations in the stock yard are not done simultaneously for elimination of risk element in the operations. In case adequate space is not available, mine management shall organize suitable traffic regulations for eliminating risk element in the operations.

12.7 Extraction of mineral by reclamation from dump or stock pile/yard shall be treated as working of opencast benches with loose overburden and all the precautions in respect of working of opencast benches with loose overburden shall be taken.

13.0 PRECATUIONS WHILE DRILLING: The position of every shot - hole to be drilled shall be distinctly marked by the mine Foremen so as to be readily seen by the drillers.

14.0 TRANSPORT AND USE OF EXPLOSIVES: Where explosives are transported for blasting, the following precautions shall be taken:

14.1 Transport of explosives from the magazine to the priming station or the site of blasting shall not be done except in original wooden or cardboard packing cases. The quantity of explosive transported at one time to the site of blasting shall not exceed the actual quantity required for use in one round of shots. Explosives shall be transported to the site of blasting not more than 90 minutes before the commencement of charging of the holes.

14.2 In accordance with D.G.'s Approval Circular No. 2 of 1986, No mechanically propelled vehicle shall be used for the transport of explosives unless it has a valid license under Rule 61 of the Explosives 2008 and by strictly following the conditions stipulated there with.

14.3 Every vehicle used for transportation of explosive shall be marked or placarded on both sides and ends with the word 'Explosives' in white letters not less than 15 cm high on a red background.

14.4 Every mechanically propelled vehicle transporting explosives shall be provided with not less than two fire extinguishers (one of carbon tetrachloride type for petroleum fire and the other of carbon dioxide under pressure type for electrical fire) suitably placed for convenient use.

14.5 The vehicle used for transport of explosives shall not be overloaded and in no case shall the explosive cases be piled higher than the sides of its body.

14.6 Explosives and detonators shall not be transported in the same vehicle, at the same time.

14.7 No persons other than the authorized driver and the helper so authorized shall ride on a mechanically propelled vehicle used for transport of explosives.

14.8 Explosive Van / vehicle loaded with explosive shall not be left unattended.

14.9 Engine of a vehicle transporting explosives shall be stopped and the brakes set securely before it is unloaded or left standing.

14.10 A vehicle transporting explosives shall not be driven at a speed exceeding 25 kilometers per hour.



14.11 A vehicle loaded with explosives shall not be taken into garage or repair shop and shall not be parked in a congested place.

14.12 A vehicle transporting explosives shall not be re-fueled except in emergencies and only when its engine is stopped and other precautions taken to prevent accidents.

14.13 No trailer shall be attached to a Explosive Van /Vehicle transporting explosives.

14.14 Every vehicle used for the transport of explosives shall be carefully inspected once in every 24 hours by a competent person to ensure that:

- (a) fire extinguishers are filled and in place;
- (b) the electric wiring is well-insulated and firmly secured;
- (c) the chassis, engine and body are clean and free from surplus oil and grease;
- (d) the fuel tank and feed lines are not leaking; and
- (e) lights, brakes, and steering mechanism are in good working order.

14.15 Report of every inspection made under clause (13.15) shall be signed and dated by competent person making an inspection.

14.16 All operations connected with transport of explosives shall be conducted under the personal supervision of a person holding at least Foreman Certificate of Competency in charge of blasting operations at the mine.

14.17 No person shall be appointed to be a blaster unless he is the holder of Manager's, Foreman's, Mate's or Blaster's certificate.

14.18 The blaster shall personally search every person engaged in the transport and use of explosives and shall satisfy himself that no person so engaged has in possession any cigarette, 'biri' or other smoking apparatus, or any match or any other apparatus of any kind capable of producing a light, flame or spark.

14.19 Supply, issue, use and return of explosive records shall be maintained with authentication.

14.20 As required under Regulation 160(4) of Metalliferous Mines Regulation, 1961, no person whose wages / payment depend on the amount of mineral, rock or debris obtained by firing shots, shall be appointed to perform the duties of a blaster. No outside person shall perform the duties of the blaster and it shall be done only by statutory person appointed at the mine.

15.0 CHARGING OF HOLES:

15.1 Explosives shall be delivered first to the hole farthest from the priming station, so as to avoid persons walking among piles of explosives and charged holes.

15.2 Not more than one hole shall be charged at any one face at any one time.

15.3 Only moistened sand / aggregate of suitable size shall be used as stemming material.

15.4 All charging, stemming and connecting-up shall be done while standing on solid, that is to say, on the side of holes away from the quarry face. Blasting parameters of each blast with a sketch showing the drilling pattern and the holes charged shall be maintained in the register kept for the purpose for each blast.

15.5 Burden and spacing shall be suitably adjusted to ensure proper fragmentation, effective utilization of explosive energy and throw of debris / ore do not exceed 10m.

G. Parimal

15.6 Notwithstanding what is contained in Regulation 164 of the Metalliferous Mines Regulations, 1961 no person other than blaster and blaster's assistants, if any, shall be permitted to remain within a radius of 20m or within 60m on the same bench where charging of holes with explosives is being carried out.

15.7 Faces shall be maintained free from loose stones, pebbles. Vertical (or near vertical) free face shall not be blocked.

15.8 Notwithstanding anything contained in the Metalliferous Mines Regulations, 1961 Preparation of charges and the charging and stemming of holes shall be carried out under the personal supervision of a Mine Foreman who shall fire the shots himself/Mining Mate/Blaster/Competent person appointed by the owner.

15.9 Use of Cellular phones and two-way transmitters while handling the explosives including preparing and charging of the same and in fuel filling stations is forbidden and shall be ensured and all the provisions vide No.DGMS (Tech) Circular No.2 of 2005 dated 27.1.2005 in this regard shall be strictly complied. The provisions of Circular 70/1966 (Specifications of cables for shotfiring). Circular 25/1974 (Approval of shotfiring cables) shall be strictly complied.

16.0 PRECAUTIONS DURING FIRING:

16.1 Shots shall not be fired except during hours of day-light. All holes charged on any one day shall be fired on the same day.

16.2 As far as practicable, shot firing shall be carried out either between shift / relays or during the rest interval, or at the end of work for the day.

16.3 Precautions with regards to taking shelter etc as laid down in Regulation 164 of the Metalliferous Mines Regulations, 1961 shall be complied with to ensure that there is no danger to life and property (Whether or not belonging to the owner) due to this operation. It shall be ensured that the fly rocks during blasting shall not go beyond 10m from the place of firing by doing effective muffling.

16.4 During the approach and progress of an electric storm, the following precautions shall be taken:

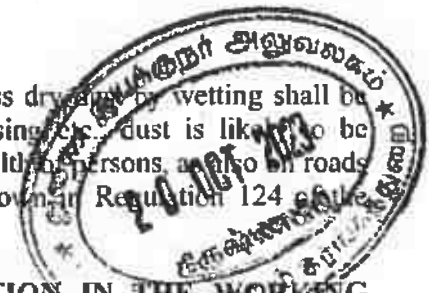
- (a) no explosive, particularly detonators, shall be handled;
- (b) if charging operations have been commenced, the work shall be discontinued until the storm has passed;
- (c) if the blast is to be fired electrically, all exposed wires shall be coiled up and if possible, placed in the mouth of the holes, or kept covered by something other than a metal plate/ conductive material;
- (d) all wires shall be removed from contact with the steel rails or a haulage track to prevent the charge being exploded prematurely by a local strike of the lightning.

16.5 The danger zone shall be distinctly demarcated (by means of red flags properly arranged and supported) before charging of holes is to commence.

16.6 Before firing, a siren installed for the purpose shall be blown three times for one minute each at intervals of one minute; and no shots shall be fired unless the blasting foreman with assistance of sufficient number of persons appointed in writing by the Manager for the purpose has ensured that all persons have left the danger zone or have taken adequate shelter.

16.7 No shot shall be fired when there is traffic on any road or railway track within the danger zone. The provisions vide No. DGMS(Tech) Circular No.2 of 2005 dated 27.1.2005, Circular 70/1966, Circular 25/1974 shall strictly complied.

17.0 PRECAUTIONS AGAINST FIRE: Arrangements for fighting fire shall be provided on all Heavy Earth Moving Machinery. Such arrangements shall, if possible, operate automatically on appearance of fire.



18.0 PRECAUTIONS AGAINST DUST: Adequately arrangements to suppress dust by wetting shall be made. If during any operation of drilling, loading, unloading, crushing, dressing etc. dust is likely to be produced in such quantity (not more than 3 mg/m³) as may be injurious to the health of persons, also on roads and benches where and dumpers operate. Dust Survey shall be done as laid down in Regulation 124 of the MMR, 1961.

19.0 PROTECTION OF WORKERS AGAINST NOISE AND VIBRATION IN THE WORKING ENVIRONMENT: Suitable steps shall be taken by all appropriate means to reduce the exposures of workers to any excessive noise and vibration. In this connection, the requirements of DGMS (Tech.) circular No's 18 of 1975 (protection of workers from noise and vibrations) & 5 of 1990 (Protection of workers against noise) shall be strictly complied with.

20.0 PROTECTIVE EQUIPMENTS: Every person working in the opencast workings including workshops, other surface installations, yards etc. shall be provided with and shall use protective foot-wear and helmets of a type approved by the Chief Inspector and such other protective equipment's as may be prescribed from time to time by the Chief Inspector or the Regional Inspector in accordance with the provisions of Regulation 182, 182A & 182B respectively.

21.0 CONTRACTOR WORK VIS-À-VIS SAFETY:

A) Employer's responsibilities:

- (i) Suitable clauses (in consistence with risk of the work allotted) shall be included in tender document (including NITs) stating how the risk arising to men & material from the mining operation/operations to be done by the contractors shall be managed.
- (ii) Ensure that contractors are familiar with the relevant parts of the statute, health and safety management system and are provided with copies of such documents prior to commencing work.
- (iii) Ensure that contractor's arrangements for health and safety management are consistent with those for the mine owner. All the rules, regulations, and bye-laws as applicable to the mine owner are also applicable to the contractor. Details of the contractor's workmen should be maintained in the owner's Form-A register. Whereas, attendance Registers in Form-D for contractor's men may be maintained independently by the owner. All the above Registers shall be kept in the mine office of the manager.
- (iv) Ensure that contracts should preferably be of longer period (three years), so that there is adequate scope of management of safety by the contractor.
- (v) Ensure that the contractor's provide the machinery, operator and other staff with written safe work procedures for the work to be carried out, stating clearly the risk involved and how it is to be managed.
- (vi) Monitor all activities of the contractors to ensure that contractor are complying with all the requirements of statute and the system related to safety. If found non-compliance of safety laws directing the contractor to take action to comply with the requirements, and for further non-compliance, the contractor may be suitably penalized. Clause of this affect may be part of the agreement between the employer and the contractor.
- (vii) Where a risk to health or safety of a person arises because of a non-compliance directing the contractor to cease work until the non-compliance is corrected.

B) Contractor's responsibilities:

- (i) Prepare written Safe Operating Procedure (SOP) for the work to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them.
- (ii) Provide a copy of the SOP to the person designated by the mine owner who shall be supervising the contractor's work.

G. Parvath

- (iii) Keep an up-to-date SOP and provide a copy of changes to a person designated by the mine owner.
- (iv) Ensure that all work is carried out in accordance with the Statute and SOP and for the purpose he may deploy adequate qualified and competent personnel for the purpose of carrying out the job in a safe manner.
- (v) For work of a specified scope/nature, develop and provide to the mine owner a site-specific code of practice.
- (vi) Ensure that all sub-contractors hired by him comply with the same requirement as the contractor himself and shall be liable for ensuring compliance all safety laws by the sub or sub-sub contractors.
- (vii) All persons deployed by the contractor for working in a mine must undergo vocational training, initial medical examination, PME. They should be issued cards stating the name of the contractor and the work and its validity period, indicating status of VT & IME.
- (viii) Every person deployed by the contractor in a mine must wear safety gadgets to be provided by the contractor. If contractor is unable to provide, owner / agent/ manager of the mine shall provide the same.
- (ix) The contractor shall submit to DGMS returns indicating- Name of his firm, Registration number, Name and address of person heading the firm, Nature of work, type of deployment of work persons, Number of work persons deployed, how many persons hold VT Certificate, how many work persons undergone IME and type of medical coverage given to be work persons. The return shall be submitted quarterly (by 10th of April, July, October & January) for contracts of more than one year. However, for contracts of less than one year, returns shall be submitted monthly.

C) Employee's responsibilities:

- (i) An employee must, while at work, take reasonable care for the health and safety of people who are at the employee's place of work and who may be affected by the employee's act or omissions at work.
- (ii) An employee must, while at work, cooperate with his or her employer or other persons so far as is necessary to enable compliance with any requirement under the act or the regulations that is imposed in the interest of health, safety and welfare of the employee or any other person.

It shall be the duty of the Manager to issue duty charts (in the language which is understood by the person concerned) to various Operators/Supervisors connected with the use of Heavy Earth Moving Machinery. Manager and Engineer shall be responsible to ensure that all the precautions and guidelines listed in the permission are strictly followed.

22.0 MISCELLANEOUS:

22.1 At gate the license of the drivers shall also be checked for eliminating the possibility of unlicensed persons driving the vehicle. In order to check the entry of such vehicle in the mine premises, properly manned check gate shall be provided at the mine entrance where the record of entry & exit of each vehicle shall be maintained. Before the pass is issued the mine engineer/competent person shall check the roadworthiness of such vehicle. Tippers / Dumper and other HEMM, not belonging to management shall not be allowed in the mine premises without a valid pass issued by the competent authority of the mine.

22.2 All persons engaged at any work within the mine premises through the contractors shall be provided with relevant training and other job-related briefings and it shall be ensured that the drivers of the vehicle belonging to contractors entering the mine premises have additionally been explained the salient provisions of "Traffic Rules".

22.3 An embankment of substantial construction and adequate dimension shall be provided between the quarry workings and seasonal Nallahs/odai/pond etc existing near the side of the proposed opencast workings. No

workings shall be made within horizontal distance of 15 m from the HFL / Embankment of any River Nallah /odai / pond etc.

22.4 During the Monsoon period one guard shall be posted round the clock at a conspicuous place near the embankment created against the said Nallahs /odai / pond with communication and illumination facilities.

22.5 The surface garland drains shall be made all round at level higher than top most bench of the proposed working to arrest entry of surface rain water into the proposed area of working.

22.6 Land destroyed due to extraction of mineral by opencast method shall be reclaimed simultaneously by in-pit dumping as the workings progress from one end to another.

22.7 No electrically operated machine, equipment and accessories shall be energized, commissioned, and used without prior approval of the competent authority under the relevant provisions of Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2023.

22.8 All the precautions and directives given in DGMS circulars issued from time to time shall be compiled with.

22.9 The Owner, Agent and Manager shall ensure that the aforesaid conditions are made known to all concerned. They shall also ensure that every such person has fully understood the same and complies with them.

22.10 At least three months before the expiry of this permission, the management shall apply for extension/revalidation of the permission.

22.11 This permission is valid for a period of 05 (FIVE) years from the date of issue of the letter or the validity of the mining lease, whichever is earlier.

22.12 These governing conditions are being issued specifically under the regulations mentioned above and without prejudice to any other provision of law, which may be or may become applicable at any time.

22.13 Any additions, alterations, or modifications to the installations, if found necessary in the interest of safety, by the inspecting officer during the inspection at a later date shall be carried out without any further delay.

22.14 These governing conditions may be amended or withdrawn at any time should it be considered necessary in the interest of safety.

22.15 If anything is found to be falsified / concealed by applicant while seeking this permission as required under the applicable statute, this permission shall deem to be withdrawn with immediate effect.

22.16 In the event of any change in the circumstances connected with the use of HEMM which is likely to endanger the life of workmen employed in the mine, operation for which these conditions have been imposed shall be stopped forthwith and intimation thereof sent to this Directorate. The said mining operation shall not be resumed without an express and fresh authority to that affect in writing from this Directorate.

22.17 A hard copy of this permission shall always be kept available in the office of the mine for reference.

Your Faithfully

6

MURALIDHAR BIDARI (DIRECTOR - BENGALURU REGION)

THIS IS A SYSTEM GENERATED DOCUMENT, DOES NOT REQUIRE ANY SIGNATURE.


S. DHANASEKAR, M.Sc., (Geo)
Qualified Person

Reg. No ' 01BBB1005
Col Code 106 / 106



அறிவியல் புலம்

FACULTY OF SCIENCE

பெரியார் பல்கலைக்கழக ஆட்சிக்குழு 2003 ஆம் ஆண்டு ஏப்ரல் மாதம் நடந்த S தனசேகர் பயன்பாட்டு புவியமைப்பியல் தேர்வில் முதல் வகுப்பில் சான்றளித்தபடி தேர்ச்சி பெற்றார் என்று தக்க தேர்வாளர்கள் அறிவியல் நிறைஞர் என்னும் பட்டத்தை அவருக்குப் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.

The Syndicate of the Periyar University hereby makes known that
DHANASEKAR S *has been*
admitted to the **DEGREE OF MASTER OF SCIENCE in**
APPLIED GEOLOGY
he/she having been certified by duly appointed Examiners to be qualified to receive the same and was placed in the **FIRST CLASS** *at the Examination held in* **APRIL 2003**



Given under the seal of this University

நாள்
Dated 15-09-2004
சேலம் 636011, தமிழ்நாடு, இந்தியா.
Salem 636011, Tamil Nadu, India.

பதிவுரை
Registrar

தலைவரை
Vice-Chancellor

S. DHANASEKAR, M.Sc., (Geo)
Qualified Person

PRITHVI MINERALS



© : 04258 282489

VARANALLAMPALAYAM
ALATHUR POST - 627808
SANKARI TK, Salem Dt. Tamil Nadu

Date : 27-12-08

TO WHOMSOEVER IT MAY CONCERN

This is to certify that SHRI S. DHANASEKAR, S/o. Shri A. Sundaram residing at No.8/3, Kullappan Street, Omalur Taluk, Salem District - 636 455 is working in our mines for the date of 15.10.2003 to till date as Geologist. During the above tenure of service his execution of the assigned work is exemplary and worth mentioning. We wish him success in his future endeavours.

For PRITHVI MINERALS,


(T.P. THANGAVEL.)
Partner



S. DHANASEKAR, M.Sc. (Geo)
Qualified Person

PHOTO SHOWN EXISTING LEASE AREA VIEW-1



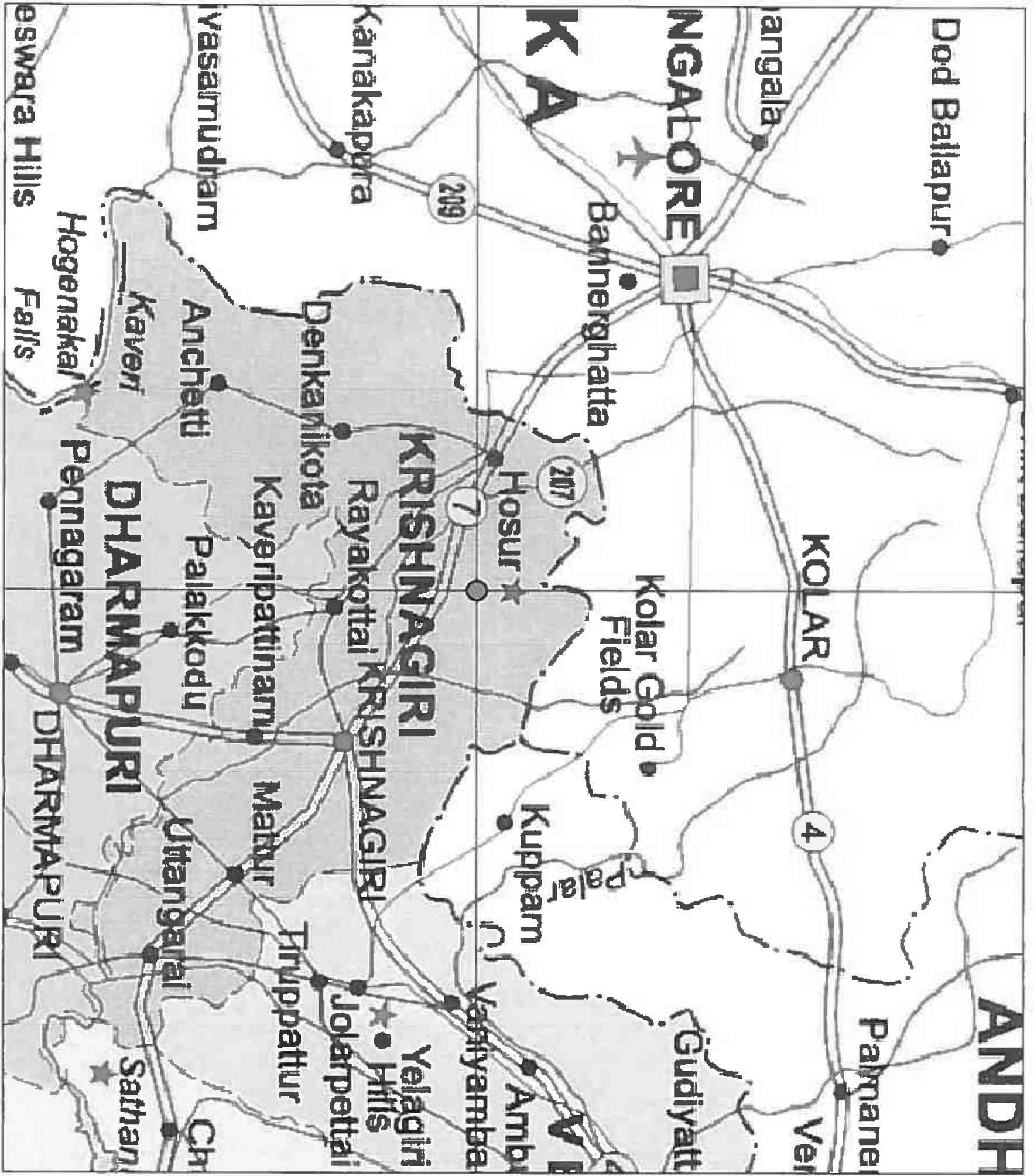
PHOTO SHOWN EXISTING LEASE AREA VIEW-2



S. Dhanasekar
S. DHANASEKAR, M.Sc., (Geo)
Qualified Person

G. Perumal

77° 55' 18.3602" E



12° 36' 53.0353" N

12° 36' 45.6499" N

77° 55' 25.4549" E

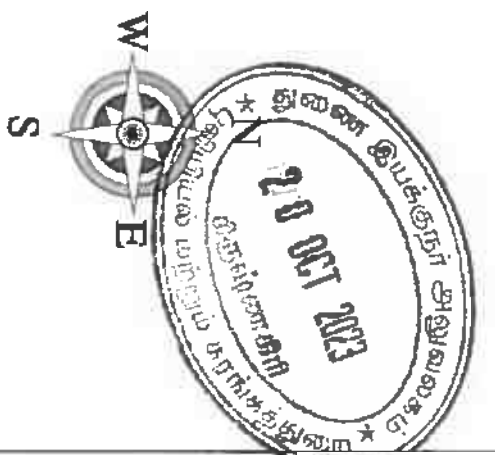


PLATE NO.1

DATE OF SURVEY: 22.09.2023

LESSEE ADDRESS:

THIRU.G.PERUMAL,
S/o.GOPAL,
A-14, THALLY HUDCO,
THALLY ROAD,
HOSUR TALUK,
KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :

EXTENT : 4.94.32 Ha,
S.F.NO : 314 (PART-3),
VILLAGE : THUPPUGANAPALLI,
TALUK : SHOOLAGIRI,
DISTRICT : KRISHNAGIRI.

INDEX

QUARRY LEASE AREA : ●
TOPO SHEET NO. : 57 H/14
LATITUDE : 12° 36' 53.0353" N to 12° 36' 45.6499" N
LONGITUDE : 77° 55' 25.4549" E to 77° 55' 18.3602" E

LOCATION PLAN

NOT TO SCALE

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR.M.Sc.
QUALIFIED PERSON

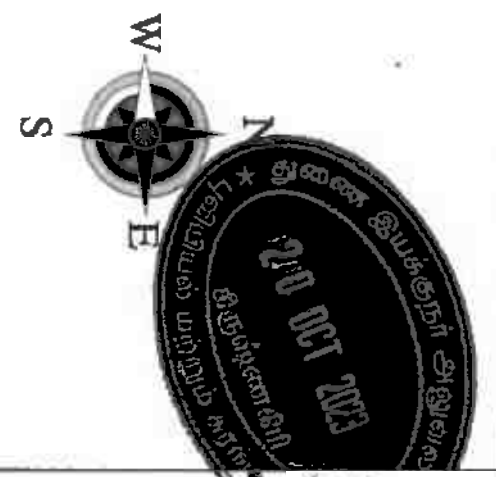
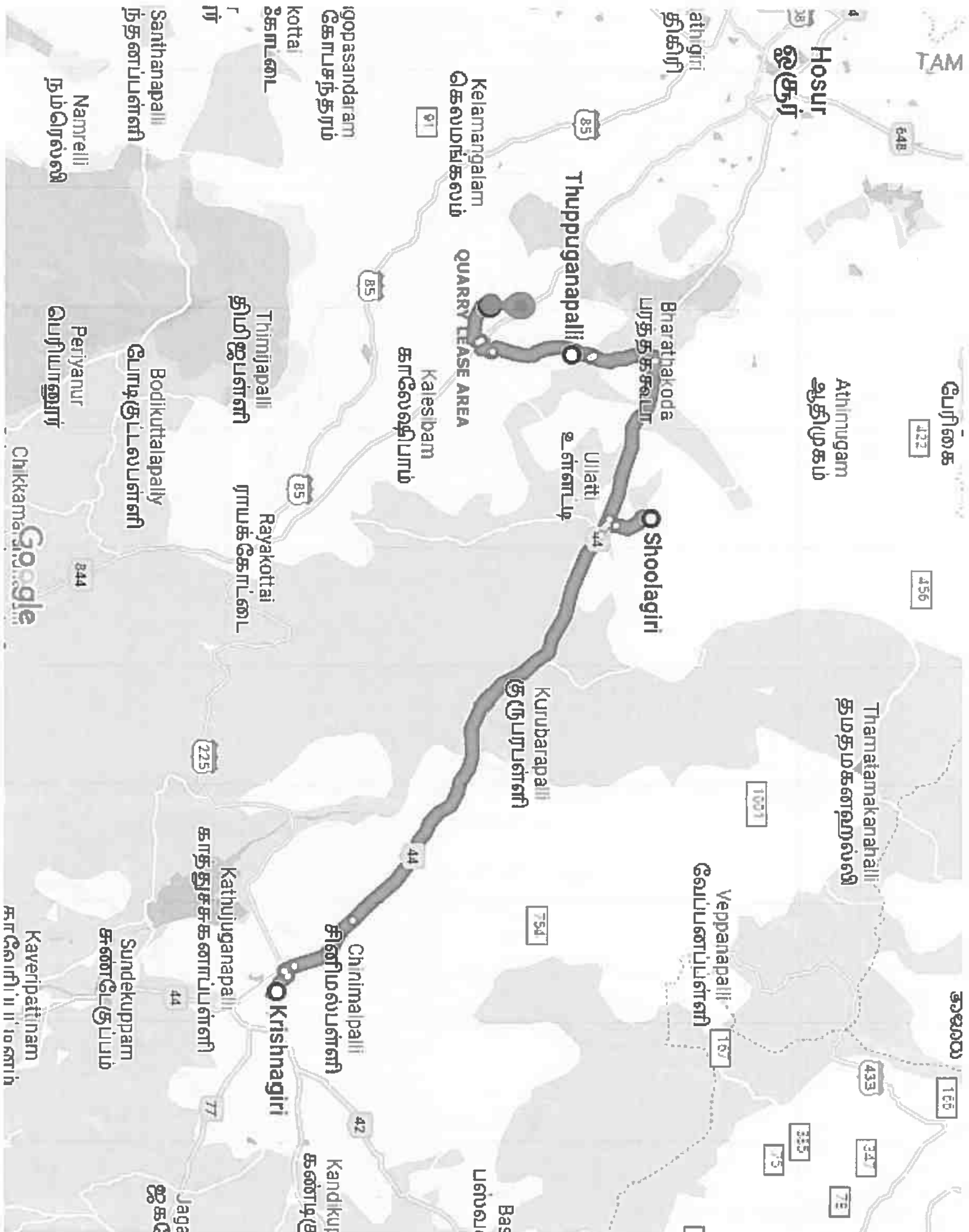


PLATE NO-1A

DATE OF SURVEY: 22.09.2023

LESSEE ADDRESS:

THIRU.G.PERUMAL,
S/o.GOPAL,
A-14, THALLY HUDDCO,
THALLY ROAD,
HOSUR TALUK,
KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :

EXTENT : 4.94.32 Ha,
S.F.NO : 314 (PART-3),
VILLAGE : THUPPUGANAPALLI,
TALUK : SHOOLAGIRI,
DISTRICT : KRISHNAGIRI.

INDEX

QUARRY LEASE AREA 
ROAD 

ROUTE MAP

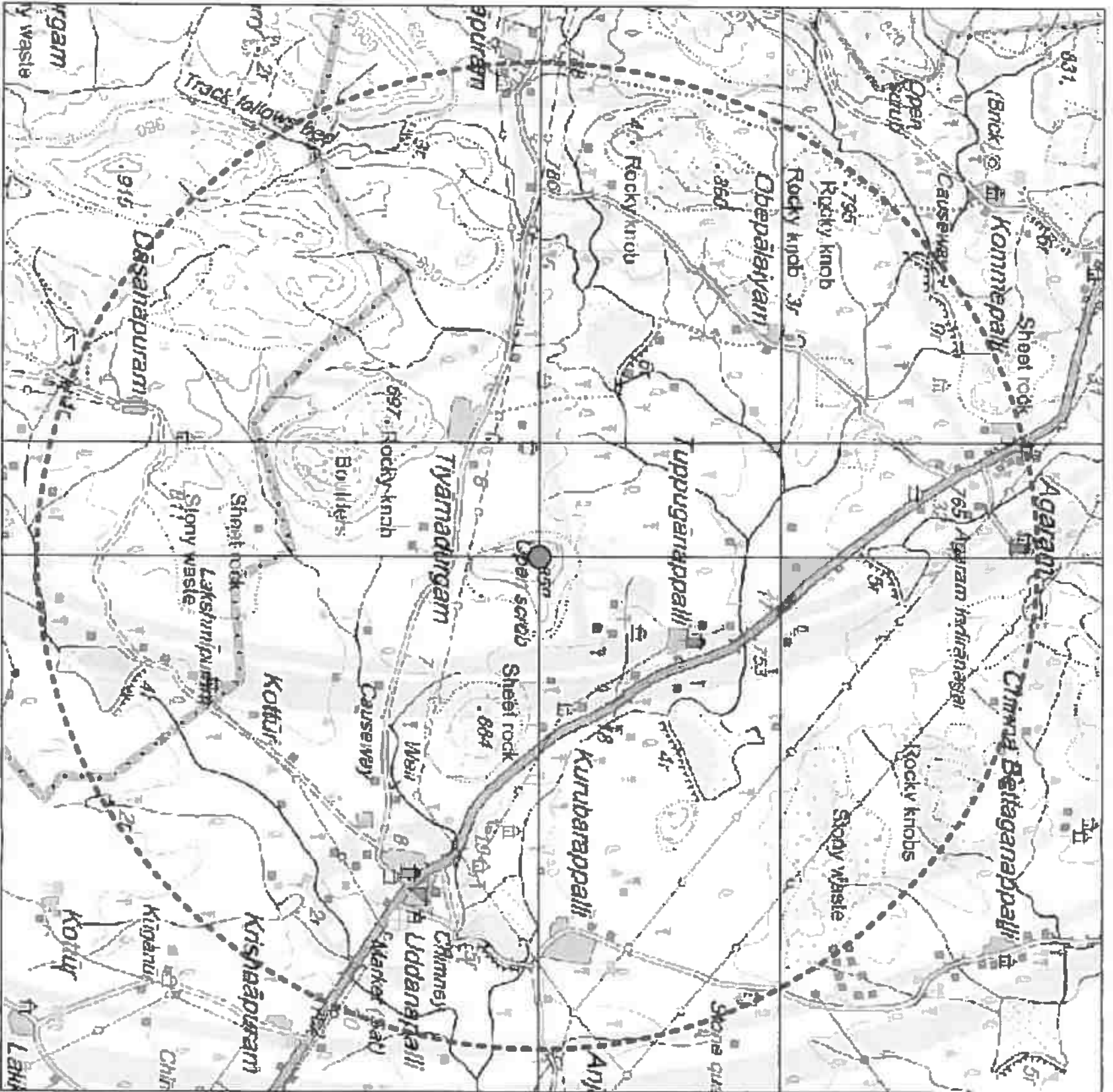
Not to Scale

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE


S.DHANASEKAR, M.Sc.,
QUALIFIED PERSON

77° 55' 18.3602" E



77° 55' 25.4549" E

12° 36' 53.0353" N

12° 36' 45.6499" N

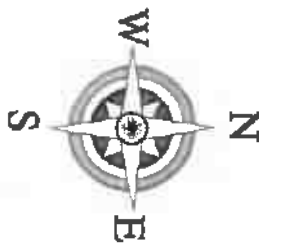


PLATE NO-1B

DATE OF SURVEY: 22/05/2023

LEESSE ADDRESS:

THIRU.G.PERUMAL
S/O.GOPAL,
A-14, THALLY HUBBARD,
THALLY ROAD,
HOSUR TALUK,
KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :

EXTENT : 4.94.32 Ha,
S.F.NO : 314 (PART-3),
VILLAGE : THUPPUGANAPALLI,
TALUK : SHOOLAGIRI,
DISTRICT : KRISHNAGIRI.

INDEX

QUARRY LEASE AREA :



500M RADIUS

TOPO SHEET NO. : 57 H/14

LATTITUDE : 12° 36' 53.0353" N to 12° 36' 45.6499" N

LONGITUDE : 77° 55' 25.4549" E to 77° 55' 18.3602" E

TOPO SHEET MAP OF THE LEASE AREA

Contour lines	1:5m, 10m, 20m, 30m, 40m, 50m, 60m, 70m, 80m, 90m, 100m, 110m, 120m, 130m, 140m, 150m, 160m, 170m, 180m, 190m, 200m, 210m, 220m, 230m, 240m, 250m, 260m, 270m, 280m, 290m, 300m, 310m, 320m, 330m, 340m, 350m, 360m, 370m, 380m, 390m, 400m, 410m, 420m, 430m, 440m, 450m, 460m, 470m, 480m, 490m, 500m
Spot heights	1:5m, 10m, 20m, 30m, 40m, 50m, 60m, 70m, 80m, 90m, 100m, 110m, 120m, 130m, 140m, 150m, 160m, 170m, 180m, 190m, 200m, 210m, 220m, 230m, 240m, 250m, 260m, 270m, 280m, 290m, 300m, 310m, 320m, 330m, 340m, 350m, 360m, 370m, 380m, 390m, 400m, 410m, 420m, 430m, 440m, 450m, 460m, 470m, 480m, 490m, 500m
Water bodies	1:5m, 10m, 20m, 30m, 40m, 50m, 60m, 70m, 80m, 90m, 100m, 110m, 120m, 130m, 140m, 150m, 160m, 170m, 180m, 190m, 200m, 210m, 220m, 230m, 240m, 250m, 260m, 270m, 280m, 290m, 300m, 310m, 320m, 330m, 340m, 350m, 360m, 370m, 380m, 390m, 400m, 410m, 420m, 430m, 440m, 450m, 460m, 470m, 480m, 490m, 500m
Buildings	1:5m, 10m, 20m, 30m, 40m, 50m, 60m, 70m, 80m, 90m, 100m, 110m, 120m, 130m, 140m, 150m, 160m, 170m, 180m, 190m, 200m, 210m, 220m, 230m, 240m, 250m, 260m, 270m, 280m, 290m, 300m, 310m, 320m, 330m, 340m, 350m, 360m, 370m, 380m, 390m, 400m, 410m, 420m, 430m, 440m, 450m, 460m, 470m, 480m, 490m, 500m
Roads	1:5m, 10m, 20m, 30m, 40m, 50m, 60m, 70m, 80m, 90m, 100m, 110m, 120m, 130m, 140m, 150m, 160m, 170m, 180m, 190m, 200m, 210m, 220m, 230m, 240m, 250m, 260m, 270m, 280m, 290m, 300m, 310m, 320m, 330m, 340m, 350m, 360m, 370m, 380m, 390m, 400m, 410m, 420m, 430m, 440m, 450m, 460m, 470m, 480m, 490m, 500m
Boundaries	1:5m, 10m, 20m, 30m, 40m, 50m, 60m, 70m, 80m, 90m, 100m, 110m, 120m, 130m, 140m, 150m, 160m, 170m, 180m, 190m, 200m, 210m, 220m, 230m, 240m, 250m, 260m, 270m, 280m, 290m, 300m, 310m, 320m, 330m, 340m, 350m, 360m, 370m, 380m, 390m, 400m, 410m, 420m, 430m, 440m, 450m, 460m, 470m, 480m, 490m, 500m

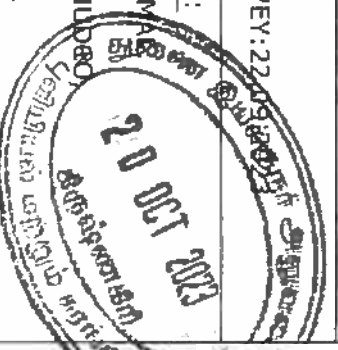
TOPO SHEET MAP OF THE LEASE AREA

SCALE-1:50,000

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.Dhanasekar
S.DHANASEKAR, M.Sc.,
QUALIFIED PERSON





PILLAR NO	LATITUDE	LONGITUDE
1	12° 36' 45.6499" N	77° 55' 18.3602" E
2	12° 36' 55.2922" N	77° 55' 16.8167" E
3	12° 36' 53.0353" N	77° 55' 25.4549" E
4	12° 36' 49.1047" N	77° 55' 25.2831" E
5	12° 36' 48.9992" N	77° 55' 21.7755" E
6	12° 36' 45.7495" N	77° 55' 21.6692" E

LEESSE ADDRESS:
 THIRU.G.PERUMAL,
 S/o.GOPAL,
 A-14,THALLY HUDCO,
 THALLY ROAD,
 HOSUR TALUK,
 KRISHNAGIRI DISTRICT-635 109.

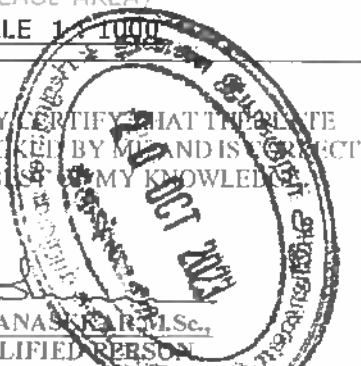
PLATE NO-IC
 DATE OF SURVEY:22.09.2023

SATELLITE IMAGE
 (LEASE AREA)
 SCALE 1 : 1000

LOCATION OF QUARRY :
 EXTENT : 4.94.32 Ha,
 S.F.NO : 314 (PART-3),
 VILLAGE : THUPPUGANAPALLI,
 TALUK : SHOOLAGIRI,
 DISTRICT : KRISHNAGIRI.

Prepared By:
 I DO HEREBY CERTIFY THAT THIS PLATE
 HAS BEEN CHECKED BY ME AND IS CORRECT
 TO THE BEST OF MY KNOWLEDGE
 S.DHANASHEKAR, M.Sc.,
 QUALIFIED PERSON

INDEX
 QUARRY LEASE BOUNDARY



12° 36' 55.2922" N
77° 55' 16.8167" E



12° 36' 45.6499" N
77° 55' 18.3602" E

12° 36' 53.0353" N
77° 55' 25.4549" E

12° 36' 45.7495" N
77° 55' 21.6692" E

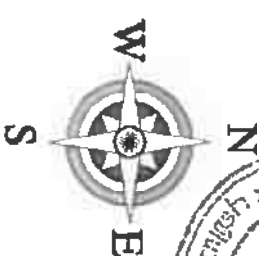


PLATE NO-ID

DATE OF SURVEY: 22.09.2023

LESSEE ADDRESS:

THIRU G. PERUMAL,
S/o. GOPAL,
A-14, THALLY HUDDO,
THALLY ROAD,
HOSUR TALUK,
KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :

EXTENT : 4.94.32 Ha,
S.F.NO : 314 (PART-3),
VILLAGE : THUPPUGANAPALLI,
TALUK : SHOOLAGIRI,
DISTRICT : KRISHNAGIRI.

INDEX

- QUARRY LEASE AREA
- 500m RADIUS
- 300M RADIUS

SATELLITE IMAGE

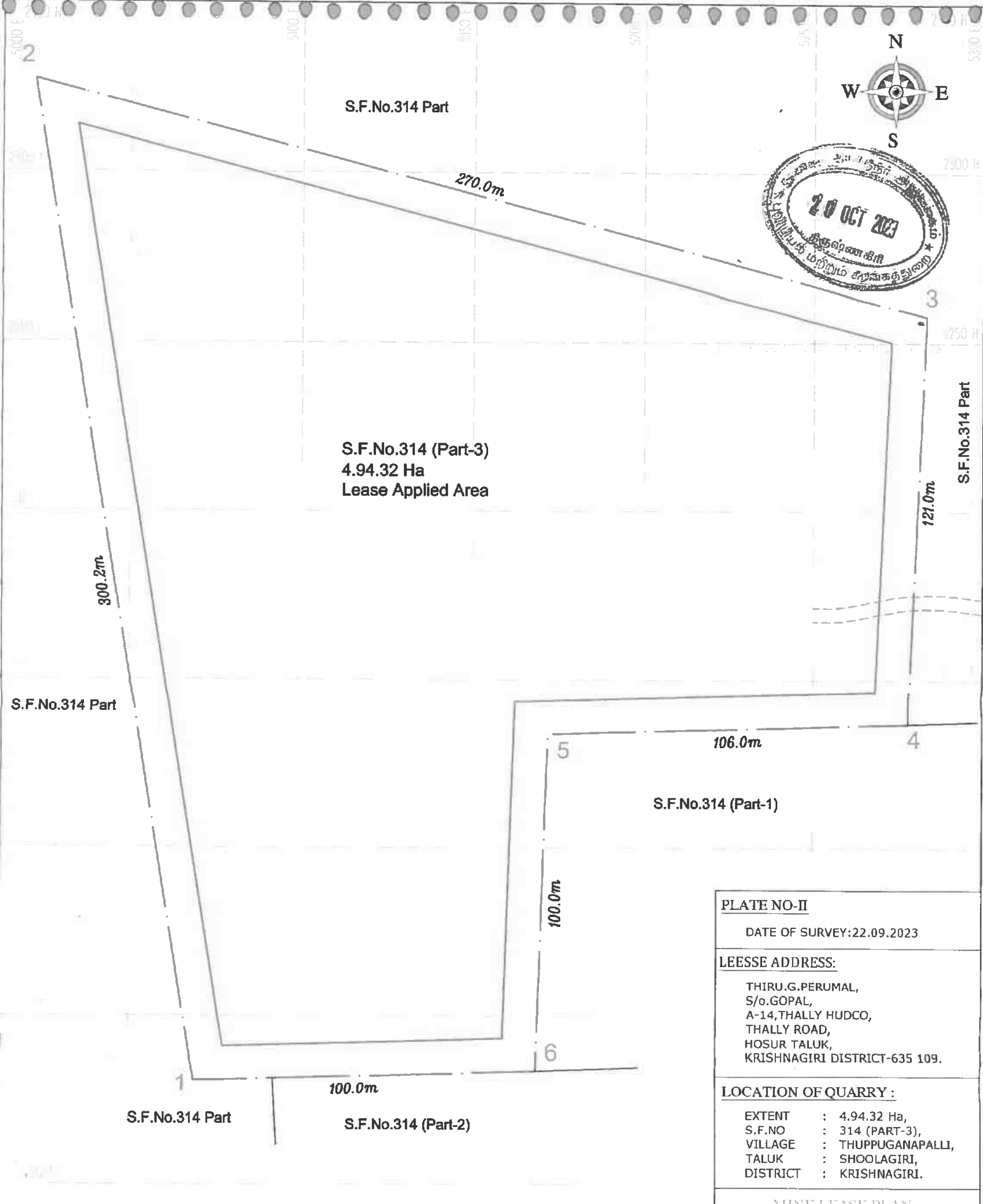
(500m RADIUS)

SCALE 1 : 5000

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S. DHANASEKAR, M.Sc.,
QUALIFIED PERSON



S.F.No.314 Part

S.F.No.314 Part

S.F.No.314 (Part-3)
4.94.32 Ha
Lease Applied Area

S.F.No.314 (Part-1)

S.F.No.314 Part

S.F.No.314 (Part-2)

PLATE NO-II

DATE OF SURVEY: 22.09.2023

LEESSE ADDRESS:

THIRU.G.PERUMAL,
S/o.GOPAL,
A-14, THALLY HUDCO,
THALLY ROAD,
HOSUR TALUK,
KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :

EXTENT : 4.94.32 Ha,
S.F.NO : 314 (PART-3),
VILLAGE : THUPPUGANAPALLI,
TALUK : SHOOLAGIRI,
DISTRICT : KRISHNAGIRI.

MINE LEASE PLAN

SCALE 1 : 1000

Prepared By:
I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE

S. Dhanasekar
S.DHANASEKAR, M.Sc.,
QUALIFIED PERSON

PILLAR NO	LATITUDE	LONGITUDE
1	12° 36' 45.6499" N	77° 55' 18.3602" E
2	12° 36' 55.2922" N	77° 55' 16.8167" E
3	12° 36' 53.0353" N	77° 55' 25.4549" E
4	12° 36' 49.1047" N	77° 55' 25.2831" E
5	12° 36' 48.9992" N	77° 55' 21.7755" E
6	12° 36' 45.7495" N	77° 55' 21.6692" E

INDEX	
QUARRY LEASE BOUNDARY	
10m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
APPROACH ROAD	

G. Perumal

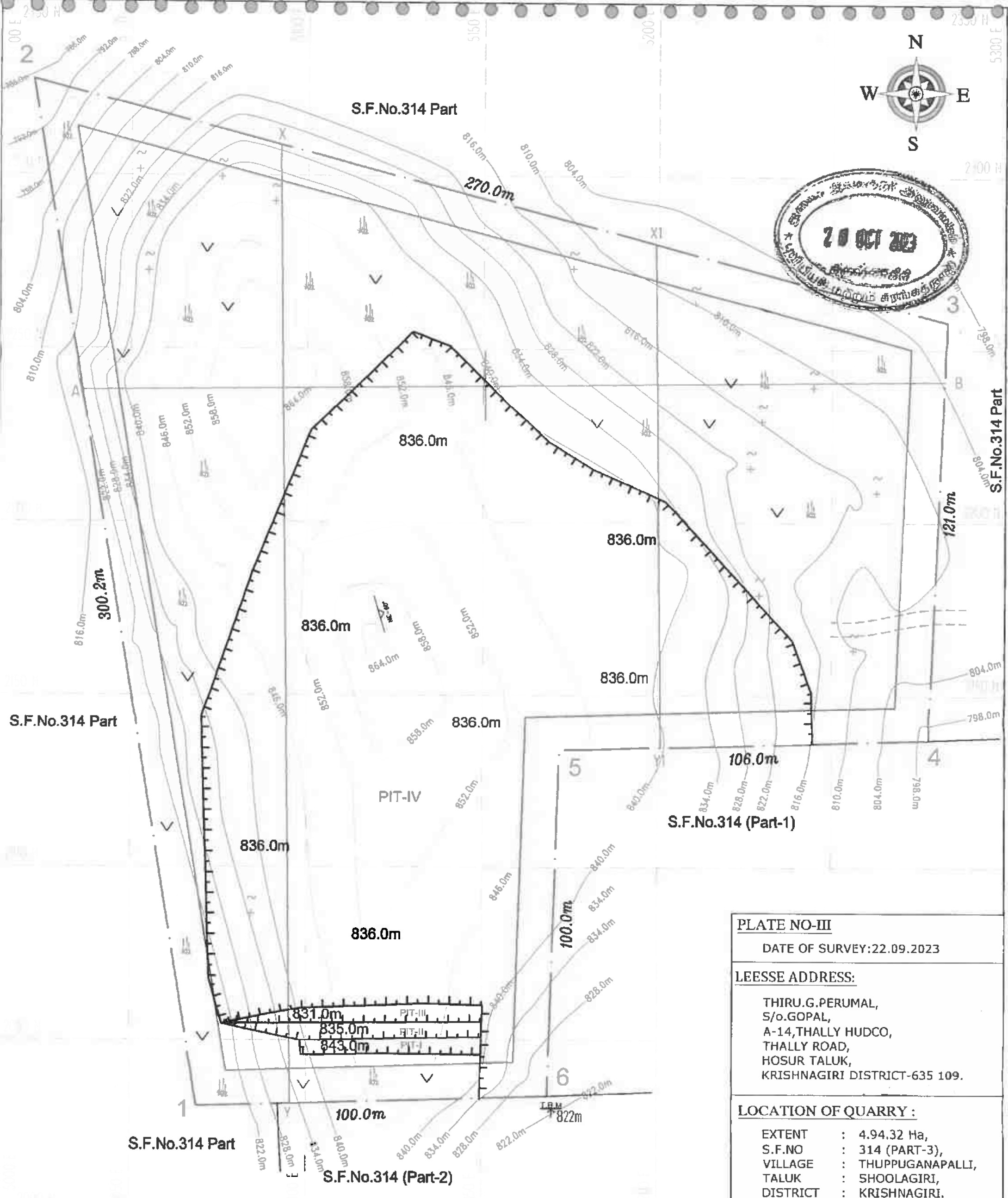



PLATE NO-III
 DATE OF SURVEY: 22.09.2023


LEESSE ADDRESS:
 THIRU.G.PERUMAL,
 S/o.GOPAL,
 A-14,THALLY HUDCO,
 THALLY ROAD,
 HOSUR TALUK,
 KRISHNAGIRI DISTRICT-635 109.


LOCATION OF QUARRY :
 EXTENT : 4.94.32 Ha,
 S.F.NO : 314 (PART-3),
 VILLAGE : THUPPUGANAPALLI,
 TALUK : SHOOLAGIRI,
 DISTRICT : KRISHNAGIRI.


SURFACE AND GEOLOGICAL PLAN
 SCALE 1 : 1000

Prepared By:
 I DO HEREBY CERTIFY THAT THE PLATE
 HAS BEEN CHECKED BY ME AND IS CORRECT
 TO THE BEST OF MY KNOWLEDGE

 S.DHANASEKAR,M.Sc.,
 QUALIFIED PERSON

Existing PM Details		
Pit Name	Area in Sqm	Depth in (m)
Pit-I	240	3
Pit-II	295	5
Pit-III	312	9
Pit-IV	21415	16

CONTOUR LINE 

SHRUB 

APPROACH ROAD 

INDEX

QUARRY LEASE BOUNDARY 

10m SAFETY DISTANCE 

TEMPORARY BENCH MARK 

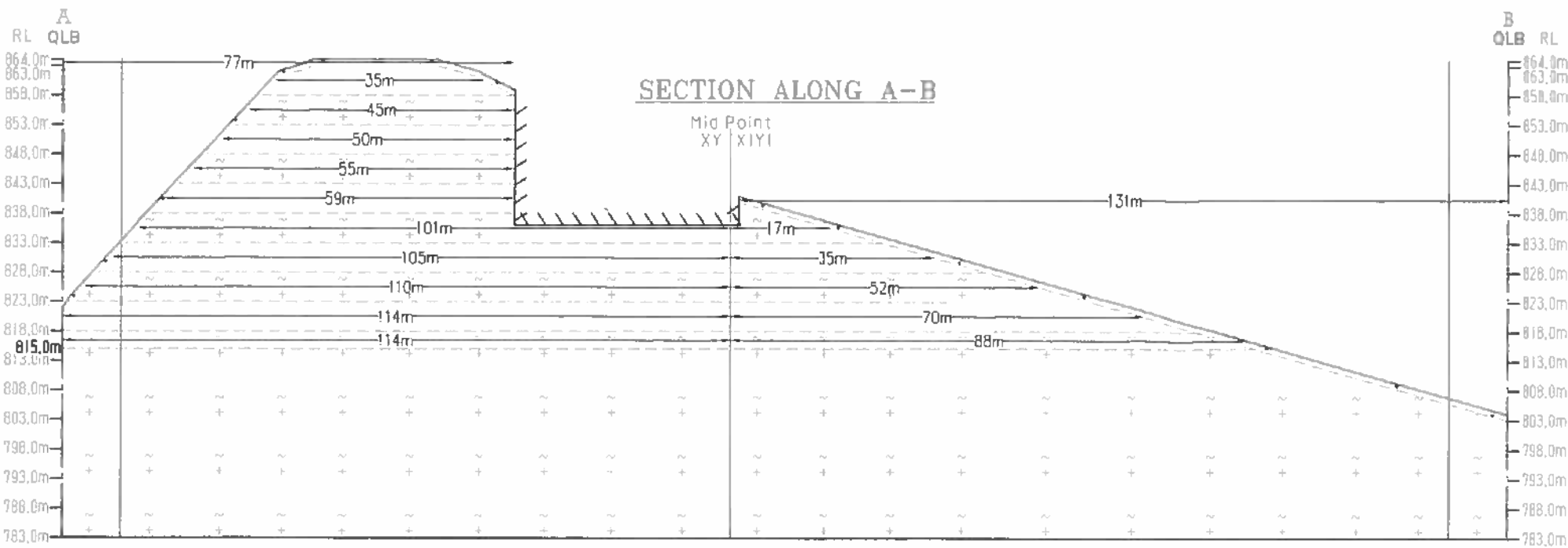
TOPSOIL 

ROUGH STONE 

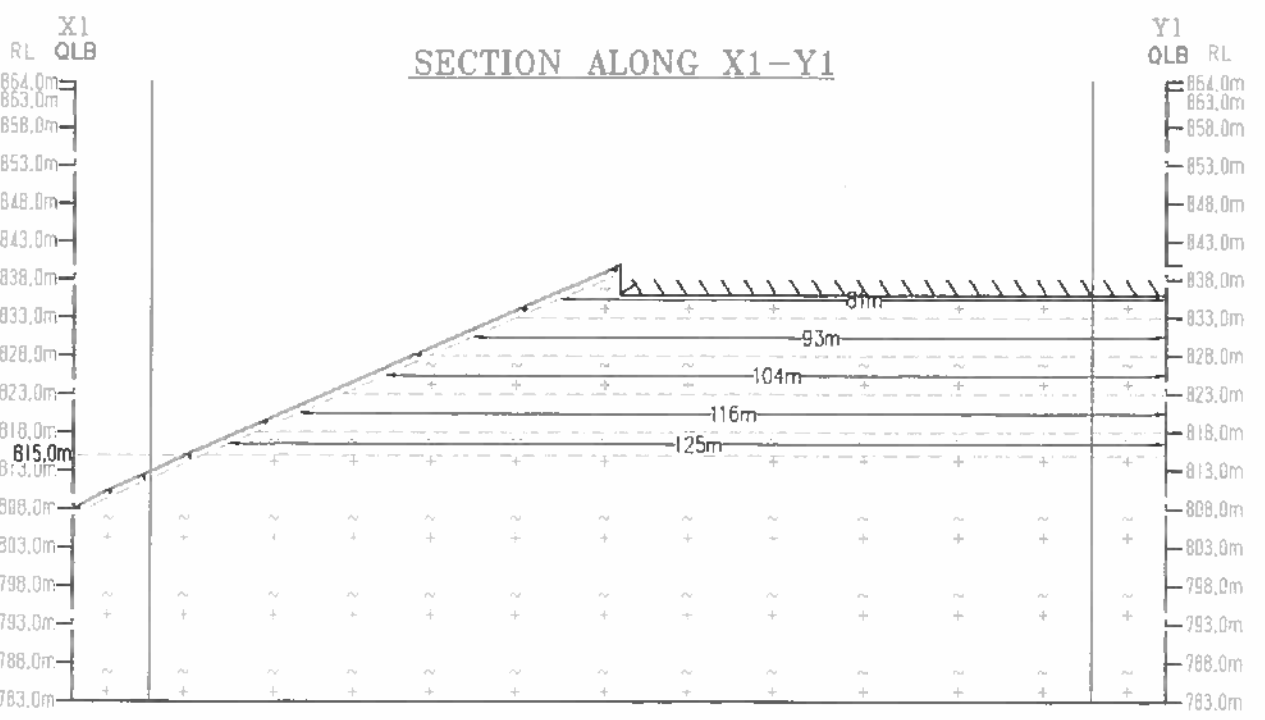
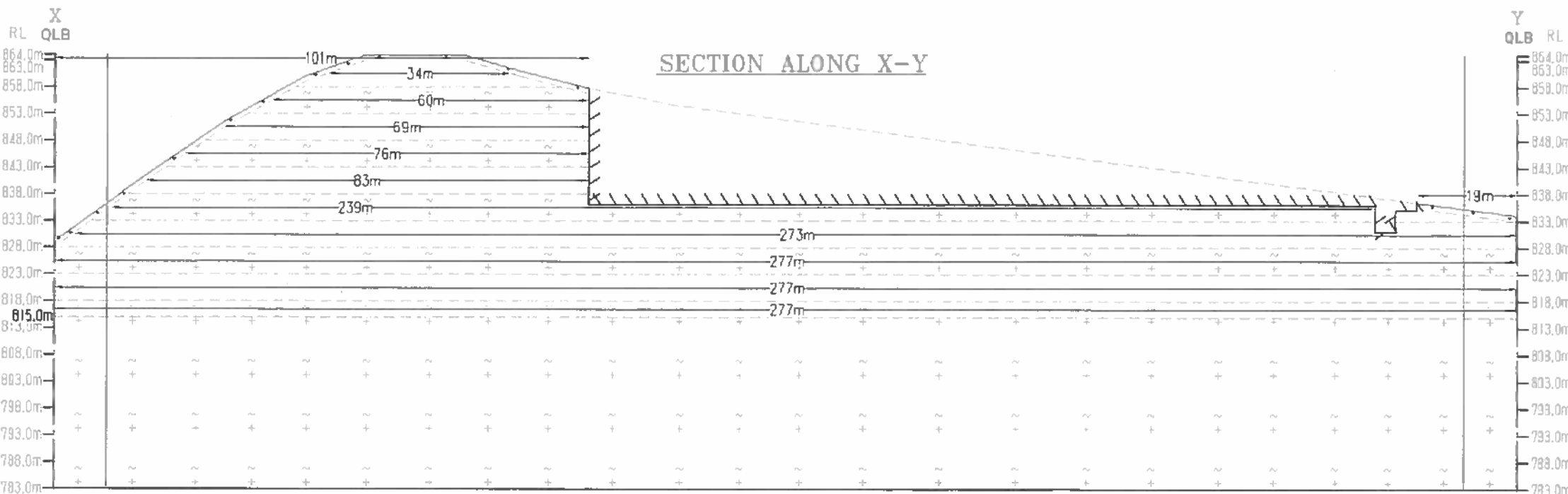
STRIKE & DIP 

PILLAR NO	LATITUDE	LONGITUDE
1	12° 36' 45.6499" N	77° 55' 18.3602" E
2	12° 36' 55.2922" N	77° 55' 16.8167" E
3	12° 36' 53.0353" N	77° 55' 25.4549" E
4	12° 36' 49.1047" N	77° 55' 25.2831" E
5	12° 36' 48.9992" N	77° 55' 21.7755" E
6	12° 36' 45.7495" N	77° 55' 21.6692" E

G. Perumal



TOTAL DEPTH = 49m



GEOLOGICAL RESERVES							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (m ³)	Geological Reserves in m ³ (100%)	Top Soil in m ³
XY-AB	I	120	77	1			9240
	II	34	35	5	5950	5950	
	III	60	45	5	13500	13500	
	IV	69	50	5	17250	17250	
	V	76	55	5	20900	20900	
	VI	83	59	5	24485	24485	
	VII	239	101	5	120695	120695	
	VIII	273	105	5	143325	143325	
	IX	277	110	5	152350	152350	
	X	277	114	5	157890	157890	
	XI	277	114	3	94734	94734	
Total=					751079	751079	9240
X1Y1-AB	I	1	131	1			131
	II	81	17	5	6885	6885	
	III	93	35	5	16275	16275	
	IV	104	52	5	27040	27040	
	V	116	70	5	40600	40600	
	VI	125	88	3	33000	33000	
Total=					123800	123800	131
Grand Total=					874879	874879	9371

PLATE NO-III-A
 DATE OF SURVEY: 22.09.2023
 LEESSE ADDRESS:
 THIRU.G.PERUMAL,
 S/o.GOPAL,
 A-14, THALLY HUDCO,
 THALLY ROAD,
 HOSUR TALUK,
 KRISHNAGIRI DISTRICT-635 109.

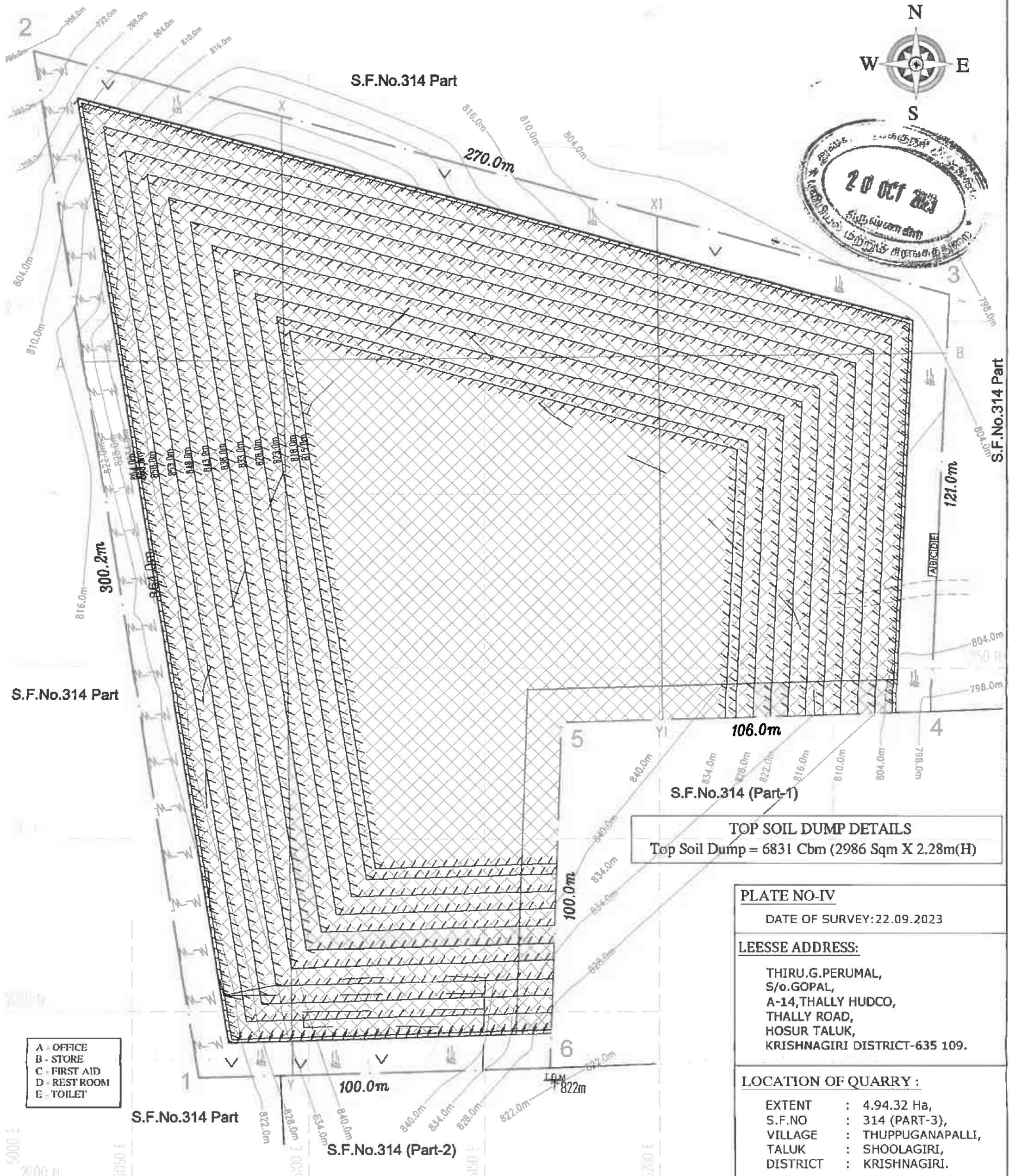
LOCATION OF QUARRY :
 EXTENT : 4.94.32 Ha,
 S.F.NO : 314 (PART-3),
 VILLAGE : THUPPUGANAPALLI,
 TALUK : SHOOLAGIRI,
 DISTRICT : KRISHNAGIRI.

INDEX
 QUARRY LEASE BOUNDARY
 10m SAFETY DISTANCE
 ROUGH STONE
 TOP SOIL

GEOLOGICAL SECTIONS
 SCALE 1 : 1000

Prepared By:
 I DO HEREBY CERTIFY THAT THE PLATE
 HAS BEEN CHECKED BY ME AND IS CORRECT
 TO THE BEST OF MY KNOWLEDGE

 S.DHANASEKAR, M.Sc.,
 QUALIFIED PERSON



TOP SOIL DUMP DETAILS
 Top Soil Dump = 6831 Cbm (2986 Sqm X 2.28m(H))

PLATE NO-IV
 DATE OF SURVEY: 22.09.2023

LEESSE ADDRESS:
 THIRU.G.PERUMAL,
 S/o.GOPAL,
 A-14,THALLY HUDCO,
 THALLY ROAD,
 HOSUR TALUK,
 KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :
 EXTENT : 4.94.32 Ha,
 S.F.NO : 314 (PART-3),
 VILLAGE : THUPPUGANAPALLI,
 TALUK : SHOOLAGIRI,
 DISTRICT : KRISHNAGIRI.

YEARWISE DEVELOPMENT AND PRODUCTION PLAN
 SCALE 1 : 1000

Prepared By:
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

 S.DHANASEKAR.M.Sc.,
 QUALIFIED PERSON

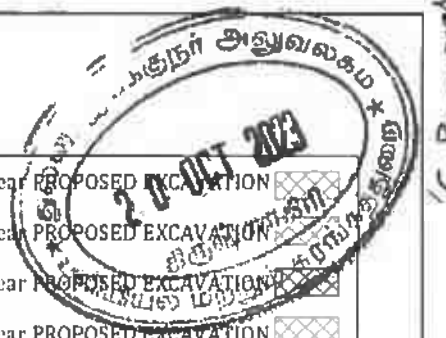
- A - OFFICE
- B - STORE
- C - FIRST AID
- D - REST ROOM
- E - TOILET

- QUARRY ROAD
- PROPOSED DUMP

- INDEX**
- QUARRY LEASE BOUNDARY
 - 10m SAFETY DISTANCE
 - TEMPORARY BENCH MARK
 - TOPSOIL
 - ROUGH STONE
 - CONTOUR LINE

- 06.12.2024 - 05.12.2025 Year PROPOSED EXCAVATION
- 06.12.2025 - 05.12.2026 Year PROPOSED EXCAVATION
- 06.12.2026 - 05.12.2027 Year PROPOSED EXCAVATION
- 06.12.2027 - 05.12.2028 Year PROPOSED EXCAVATION
- 06.12.2028 - 05.12.2029 Year PROPOSED EXCAVATION

G. Perumal



06.12.2024 - 05.12.2025 Year	PROPOSED EXCAVATION	
06.12.2025 - 05.12.2026 Year	PROPOSED EXCAVATION	
06.12.2026 - 05.12.2027 Year	PROPOSED EXCAVATION	
06.12.2027 - 05.12.2028 Year	PROPOSED EXCAVATION	
06.12.2028 - 05.12.2029 Year	PROPOSED EXCAVATION	

TOTAL DEPTH = 49m

PLATE NO-IV-A

DATE OF SURVEY: 22.09.2023

LEESSE ADDRESS:

THIRU.G.PERUMAL,
S/o.GOPAL,
A-14,THALLY HUDCO,
THALLY ROAD,
HOSUR TALUK,
KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :

EXTENT : 4.94.32 Ha,
S.F.NO : 314 (PART-3),
VILLAGE : THUPPUGANAPALLI,
TALUK : SHOOLAGIRI,
DISTRICT : KRISHNAGIRI.

INDEX

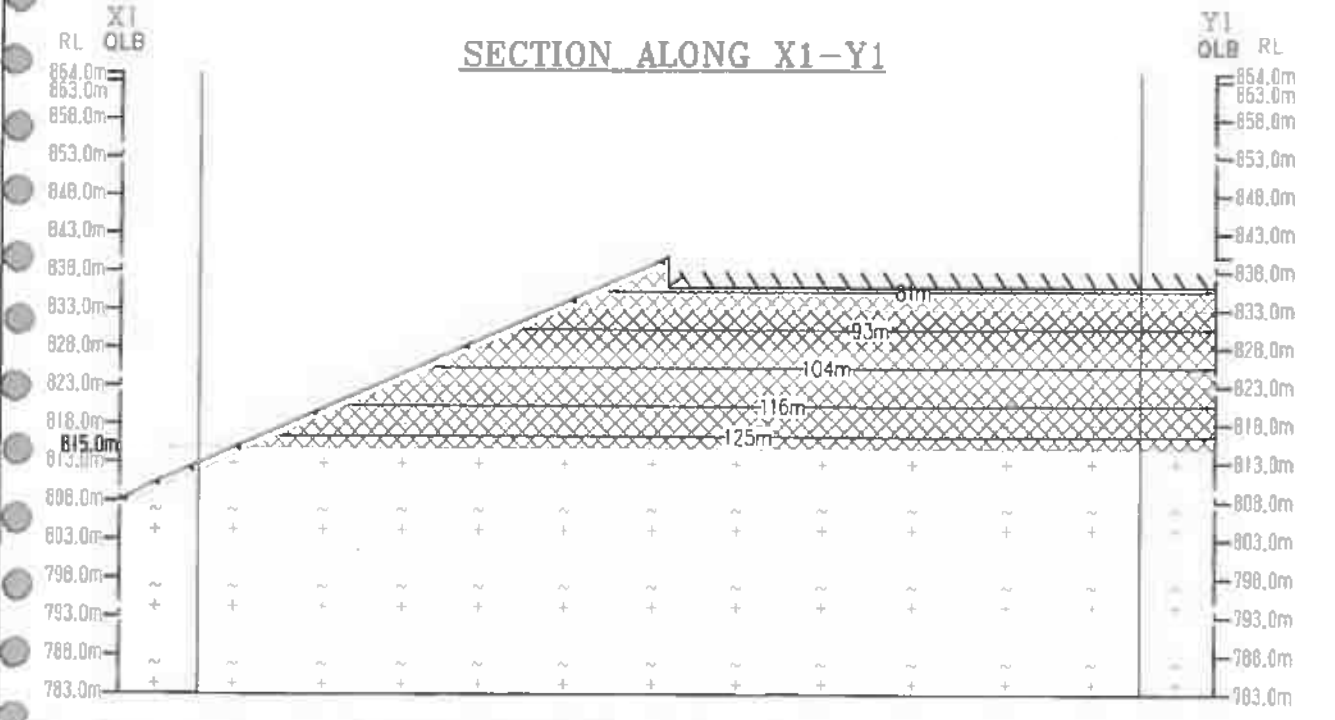
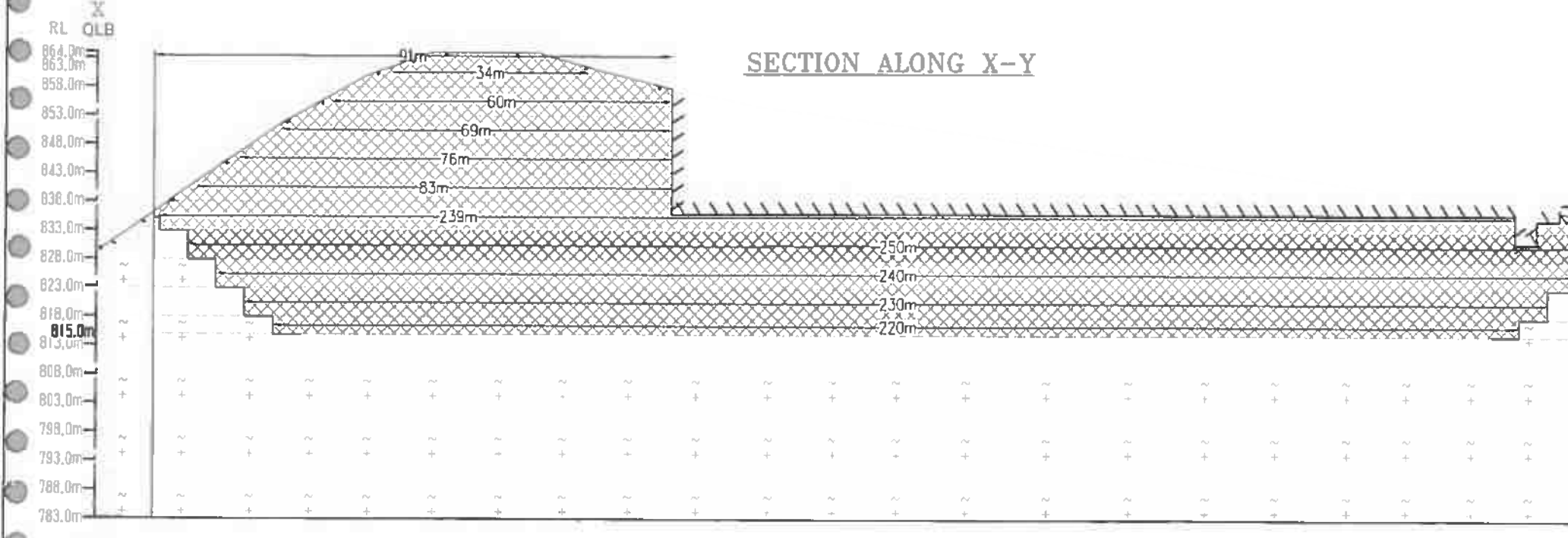
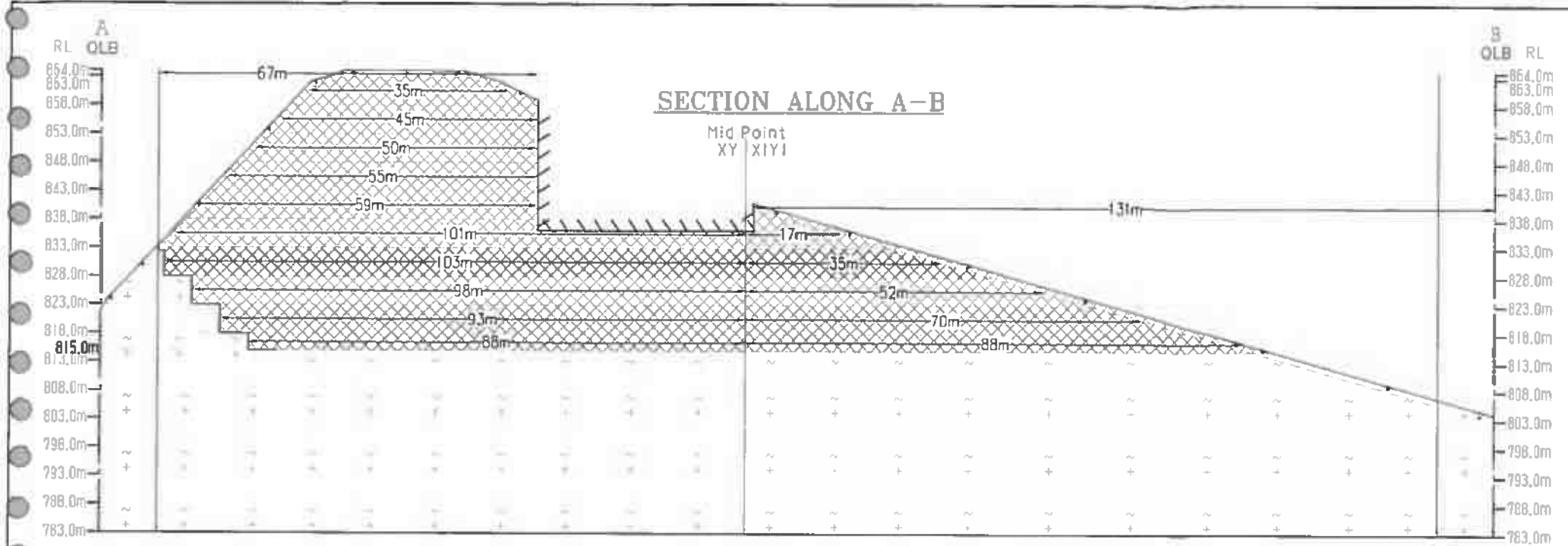
- QUARRY LEASE BOUNDARY
- 10m SAFETY DISTANCE
- TOPSOIL
- ROUGH STONE

YEARWISE DEVELOPMENT AND PRODUCTION SECTIONS

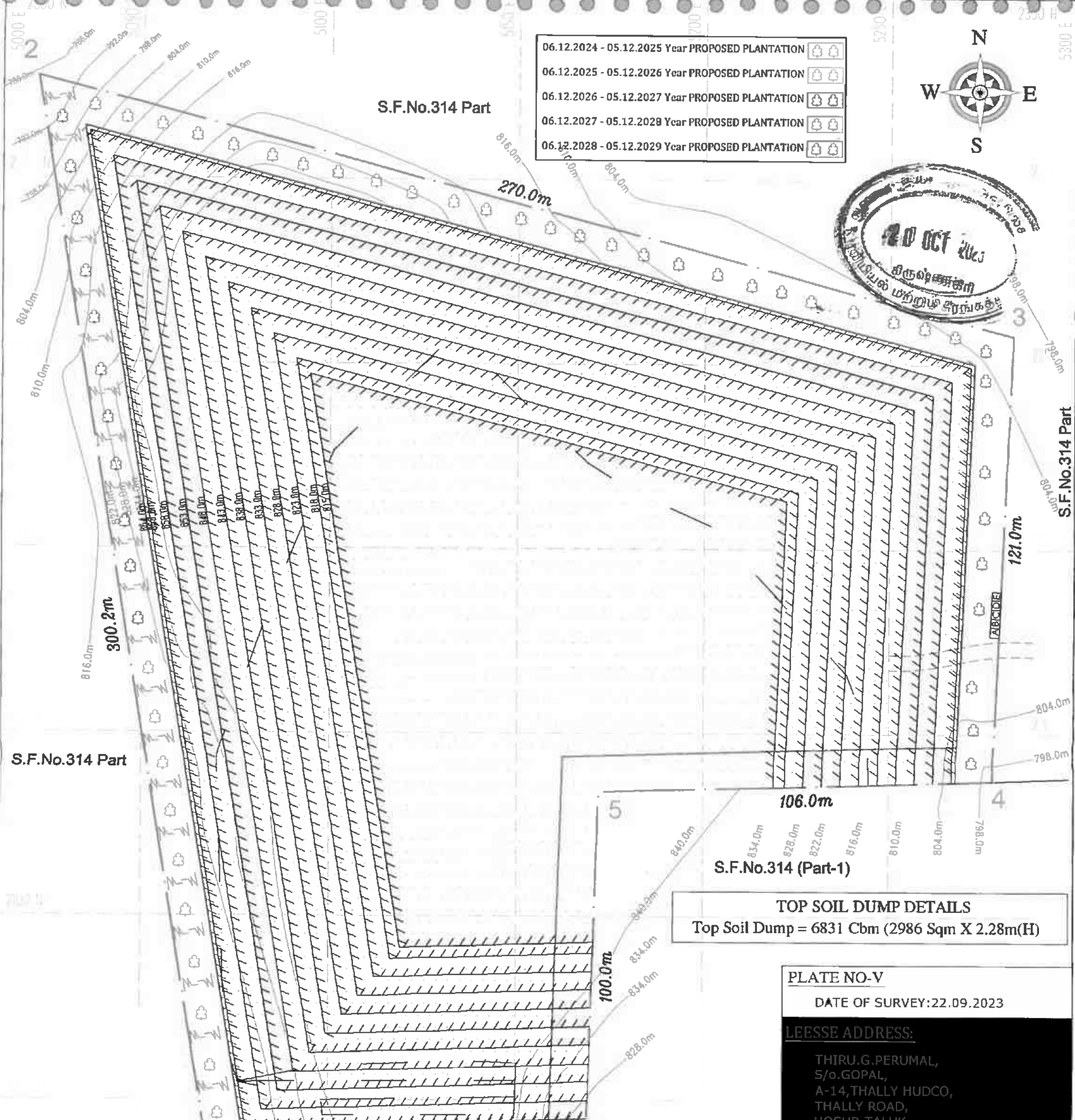
SCALE 1 : 1000

Prepared By:
I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE

S. Dhana
S.DHANASEKAR.M.Sc.,
QUALIFIED PERSON



YEARWISE DEVELOPMENT AND PRODUCTION								
Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (m ³)	Recoverable Reserves in m ³ (100%)	Top Soil in m ³
06.12.2024 05.12.2025	XY-AB	I	100	67	1	5950	5950	6700
		II	34	35	5	13500	13500	
		III	60	45	5	20900	20900	
		IV	69	50	5	24485	24485	
		V	76	55	5	82085	82085	
		VI	83	59	5	120695	120695	
Total =						145025	145025	
06.12.2025- 05.12.2026	X1Y1-AB	VII	239	101	5	128750	128750	131
		I	1	131	1	6885	6885	
		II	81	17	5	127580	127580	
Total =						145025	145025	
06.12.2026- 05.12.2027	XY-AB X1Y1-AB	VIII	250	103	5	16275	16275	145025
		IX	240	98	5	27040	27040	
		III	93	35	5	144640	144640	
Total =						145025	145025	
06.12.2027- 05.12.2028	XY-AB X1Y1-AB	IX	240	98	5	106950	106950	58080
		IV	104	52	5	40600	40600	
		V	116	70	5	33000	33000	
Total =						238630	238630	
06.12.2028 05.12.2029	XY-AB X1Y1-AB	X	230	93	5	58080	58080	33000
		XI	220	88	3	33000	33000	
		VI	125	88	3	238630	238630	
Total =						737960	737960	6831
GRAND Total =						737960	737960	6831



- 06.12.2024 - 05.12.2025 Year PROPOSED PLANTATION
- 06.12.2025 - 05.12.2026 Year PROPOSED PLANTATION
- 06.12.2026 - 05.12.2027 Year PROPOSED PLANTATION
- 06.12.2027 - 05.12.2028 Year PROPOSED PLANTATION
- 06.12.2028 - 05.12.2029 Year PROPOSED PLANTATION



S.F.No.314 Part

S.F.No.314 Part

S.F.No.314 Part

S.F.No.314 (Part-1)

TOP SOIL DUMP DETAILS
Top Soil Dump = 6831 Cbm (2986 Sqm X 2.28m(H))

PLATE NO-V

DATE OF SURVEY: 22.09.2023

LEESSE ADDRESS:

THIRU.G.PERUMAL,
S/o.GOPAL,
A-14,THALLY HUDCO,
THALLY ROAD,
HOSUR TALUK,
KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :

EXTENT : 4.94.32 Ha,
S.F.NO : 314 (PART-3),
VILLAGE : THUPPUGANAPALLI,
TALUK : SHOOLAGIRI,
DISTRICT : KRISHNAGIRI.

MINE LAYOUT, LAND USE PATTERN & AFFORESTATION PLAN

SCALE 1 : 1000

Prepared By:
I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S. Dhanasekar
S.DHANASEKAR, M.Sc.,
QUALIFIED PERSON

- A - OFFICE
- B - STORE
- C - FIRST AID
- D - REST ROOM
- E - TOILET

S.F.No.314 Part

S.F.No.314 (Part-2)

INDEX

- QUARRY LEASE BOUNDARY
- 10m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- TOPSOIL
- ROUGH STONE
- CONTOUR LINE
- QUARRY ROAD
- MINE LAYOUT
- PROPOSED DUMP

MINE LAYOUT LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA IN USE DURING THE QUARRYING PERIOD (Ha)	COLOR CODE
AREA UNDER QUARRYING	2.22.62	4.15.38	
INFRASTRUCTURE	Nil	0.01.00	
ROADS	0.01.00	0.01.00	
GREEN BELT & DUMP	Nil	0.76.94	
UN-UTILIZED AREA	2.70.70	Nil	
GRAND TOTAL	4.94.32	4.94.32	

G. Perumal

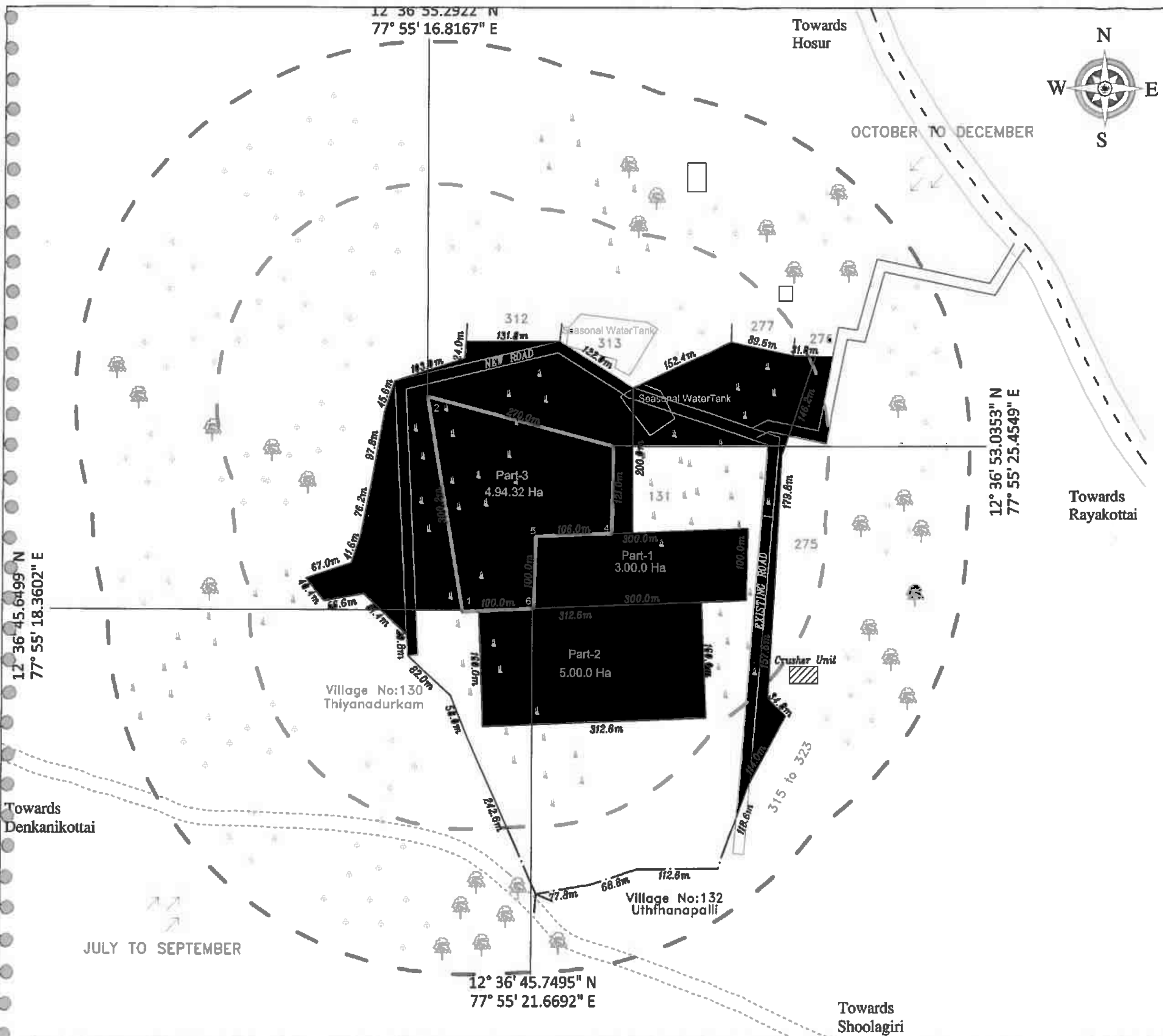
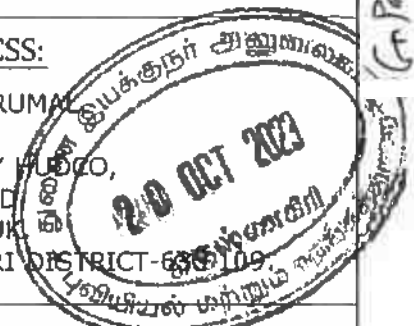


PLATE NO-VI
 DATE OF SURVEY:22.09.2023
 LEESSE ADDRESS:
 THIRU.G.PERUMAN
 S/o.GOPAL,
 A-14,THALLY HUBCO,
 THALLY ROAD,
 HOSUR TALUK,
 KRISHNAGIRI DISTRICT-635109



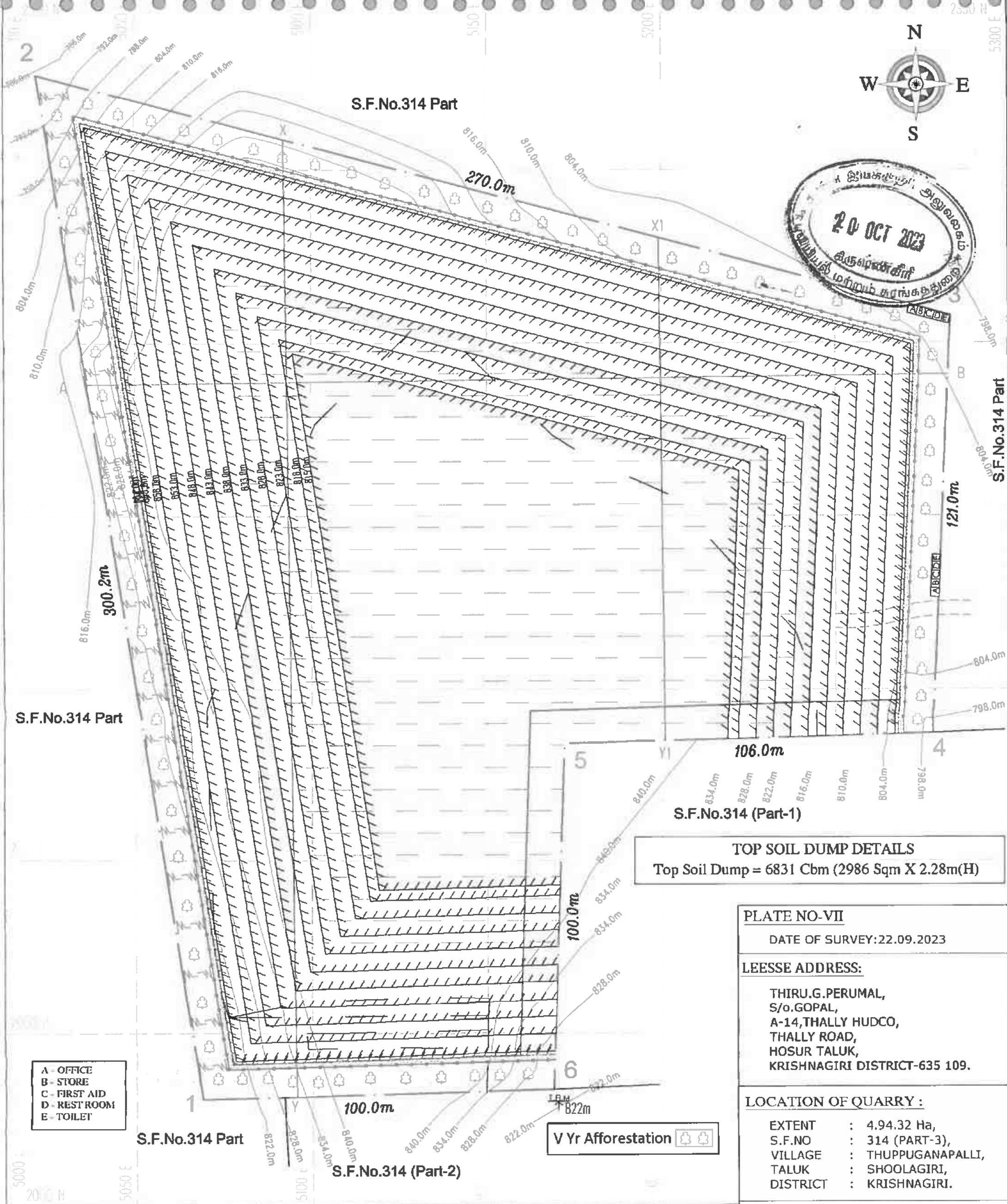
LOCATION OF QUARRY:
 EXTENT : 4.94.32 Ha,
 S.F.NO : 314 (PART-3),
 VILLAGE : THUPPUGANAPALLI,
 TALUK : SHOOLAGIRI,
 DISTRICT : KRISHNAGIRI.

INDEX	
Q.L.BOUNDARY	
500m RADIUS	
300m RADIUS	
TREES	
APPROACH ROAD	
VILLAGE ROAD	
WIND DIRECTION	
ADJACENT QUARRY	
INFRASTRUCTURES	
DRY AGRICULTURAL LAND	
SHRUB	
CRUSHER UNIT	
EXISTING QUARRY ROAD	
NEW QUARRY ROAD	

ENVIRONMENT PLAN
 SCALE 1 : 5000

Prepared By:
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

 S.DHANASEKAR,M.Sc.,
 QUALIFIED PERSON



S.F.No.314 Part

S.F.No.314 Part

S.F.No.314 Part

S.F.No.314 Part

S.F.No.314 (Part-2)

S.F.No.314 (Part-1)

- A - OFFICE
- B - STORE
- C - FIRST AID
- D - REST ROOM
- E - TOILET

TOP SOIL DUMP DETAILS
 Top Soil Dump = 6831 Cbm (2986 Sqm X 2.28m(H))

PLATE NO-VII
 DATE OF SURVEY: 22.09.2023

LEESSE ADDRESS:
 THIRU.G.PERUMAL,
 S/o.GOPAL,
 A-14, THALLY HUDCO,
 THALLY ROAD,
 HOSUR TALUK,
 KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :
 EXTENT : 4.94.32 Ha,
 S.F.NO : 314 (PART-3),
 VILLAGE : THUPPUGANAPALLI,
 TALUK : SHOOLAGIRI,
 DISTRICT : KRISHNAGIRI.

V Yr Afforestation

- QUARRY ROAD
- FENCING
- PARAPET WALL
- PROPOSED WATER STORAGE
- ULTIMATE PIT LIMIT
- PROPOSED DUMP

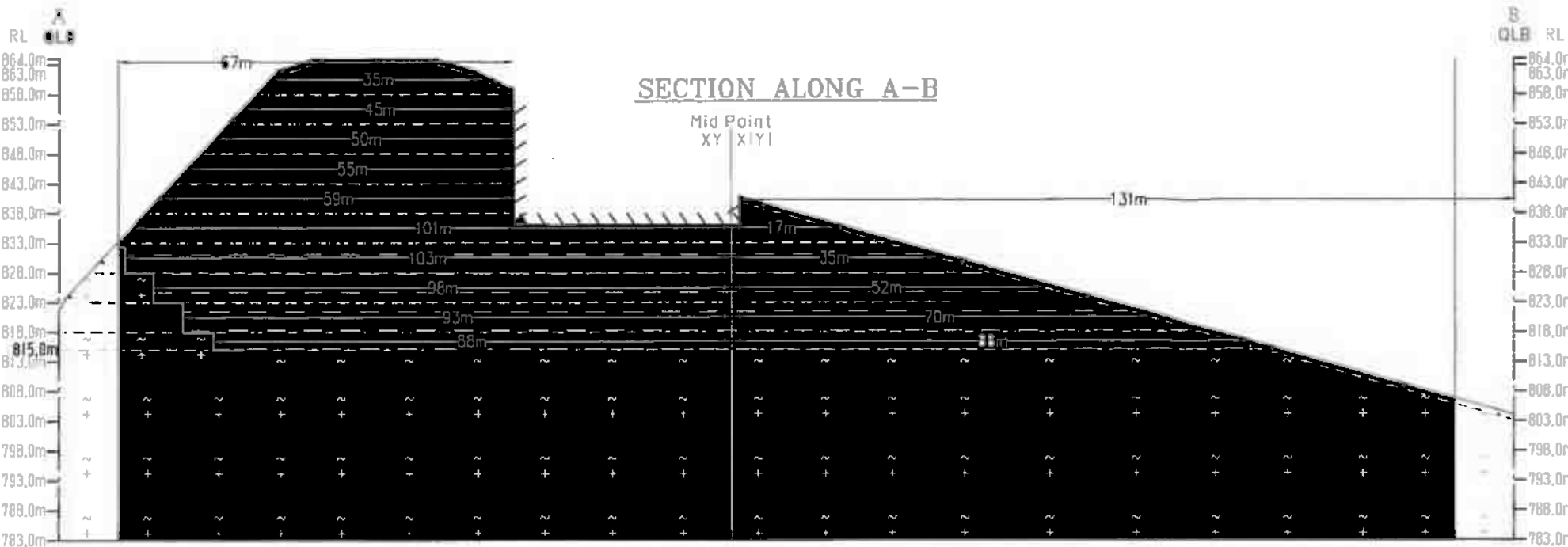
- INDEX**
- QUARRY LEASE BOUNDARY
 - 10m SAFETY DISTANCE
 - TEMPORARY BENCH MARK
 - TOPSOIL
 - ROUGH STONE
 - CONTOUR LINE

CONCEPTUAL / FINAL MINE CLOSURE PLAN
 SCALE 1 : 1000

Prepared By:
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR, M.Sc.,
 QUALIFIED PERSON

G. Perumal



ULTIMATE PIT DIMENSION
 = 226.0m(L) X 192.0m(W) Avg. 49.0m(D)
 20 OCT 2023
 திரு. அனுவலகர்
 விசுவநாதர்
 மருத்துவ கார்ப்பரேட்டர்

TOTAL DEPTH = 49m

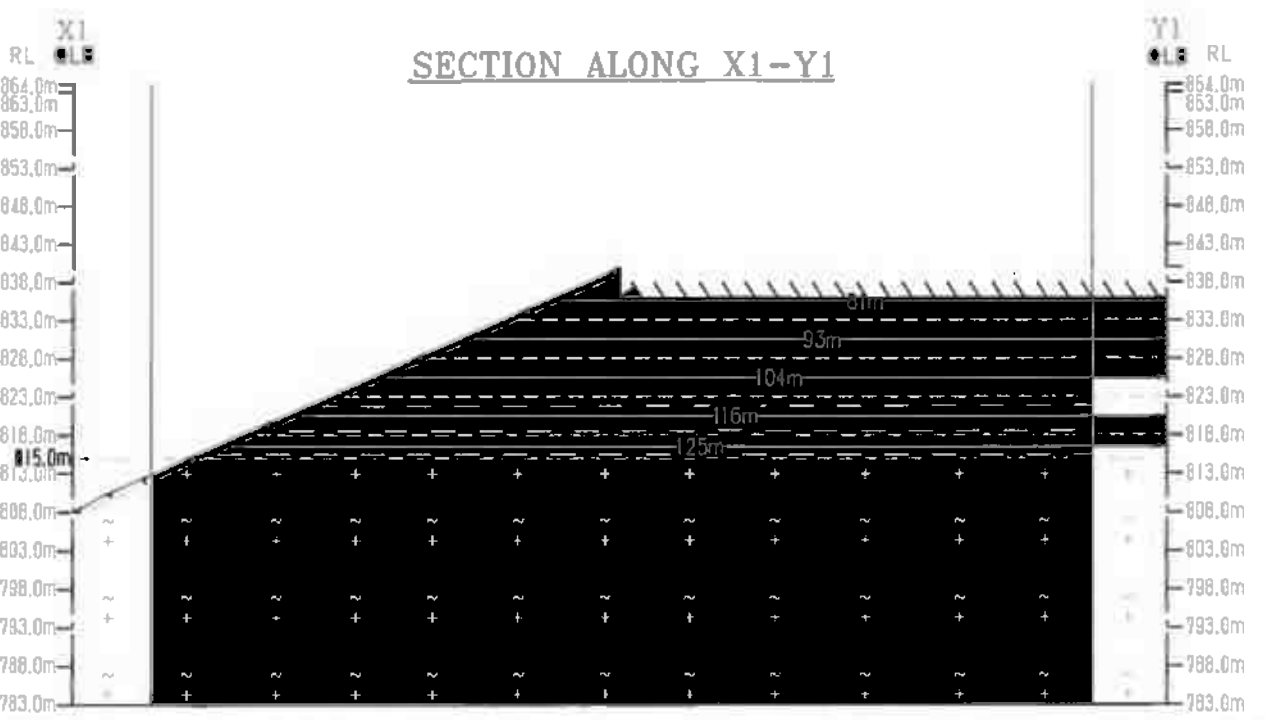
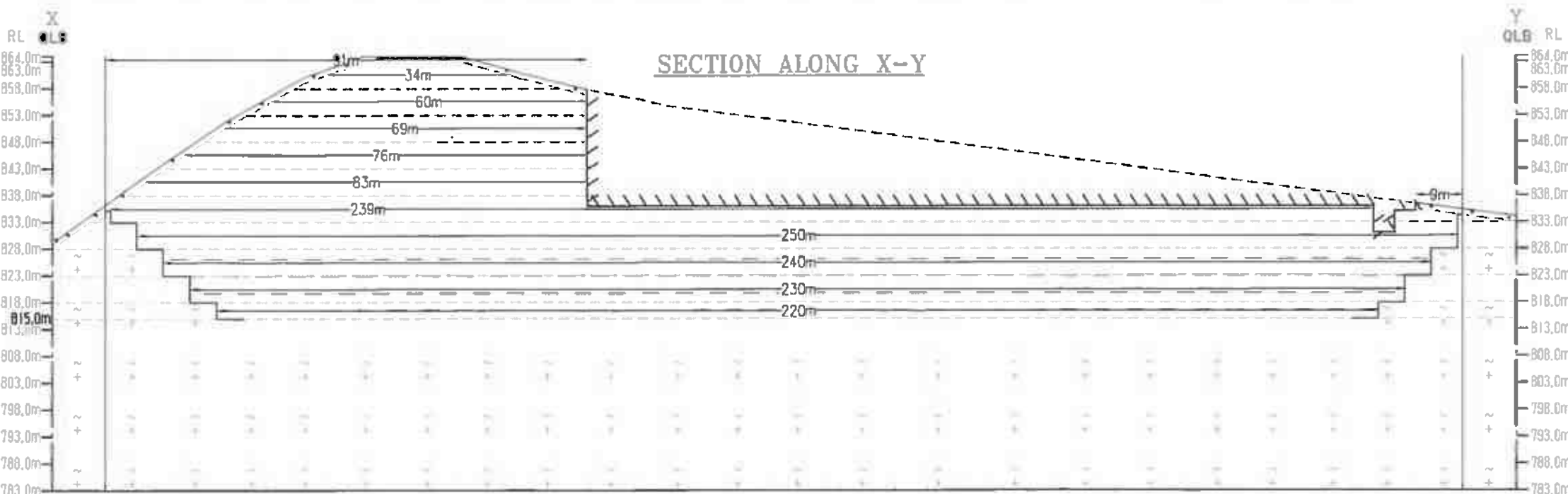


PLATE NO-VII-A

DATE OF SURVEY: 22.09.2023

LEESSE ADDRESS:

THIRU.G.PERUMAL,
 S/o.GOPAL,
 A-14,THALLY HUDCO,
 THALLY ROAD,
 HOSUR TALUK,
 KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :

EXTENT : 4.94.32 Ha,
 S.F.NO : 314 (PART-3),
 VILLAGE : THUPPUGANAPALLI,
 TALUK : SHOOLAGIRI,
 DISTRICT : KRISHNAGIRI.

INDEX

QUARRY LEASE BOUNDARY	
10m SAFETY DISTANCE	
TOPSOIL	
ROUGH STONE	
PROPOSED WATER STORAGE	
ULTIMATE PIT SLOPE	

CONCEPTUAL / FINAL MINE CLOSURE SECTIONS

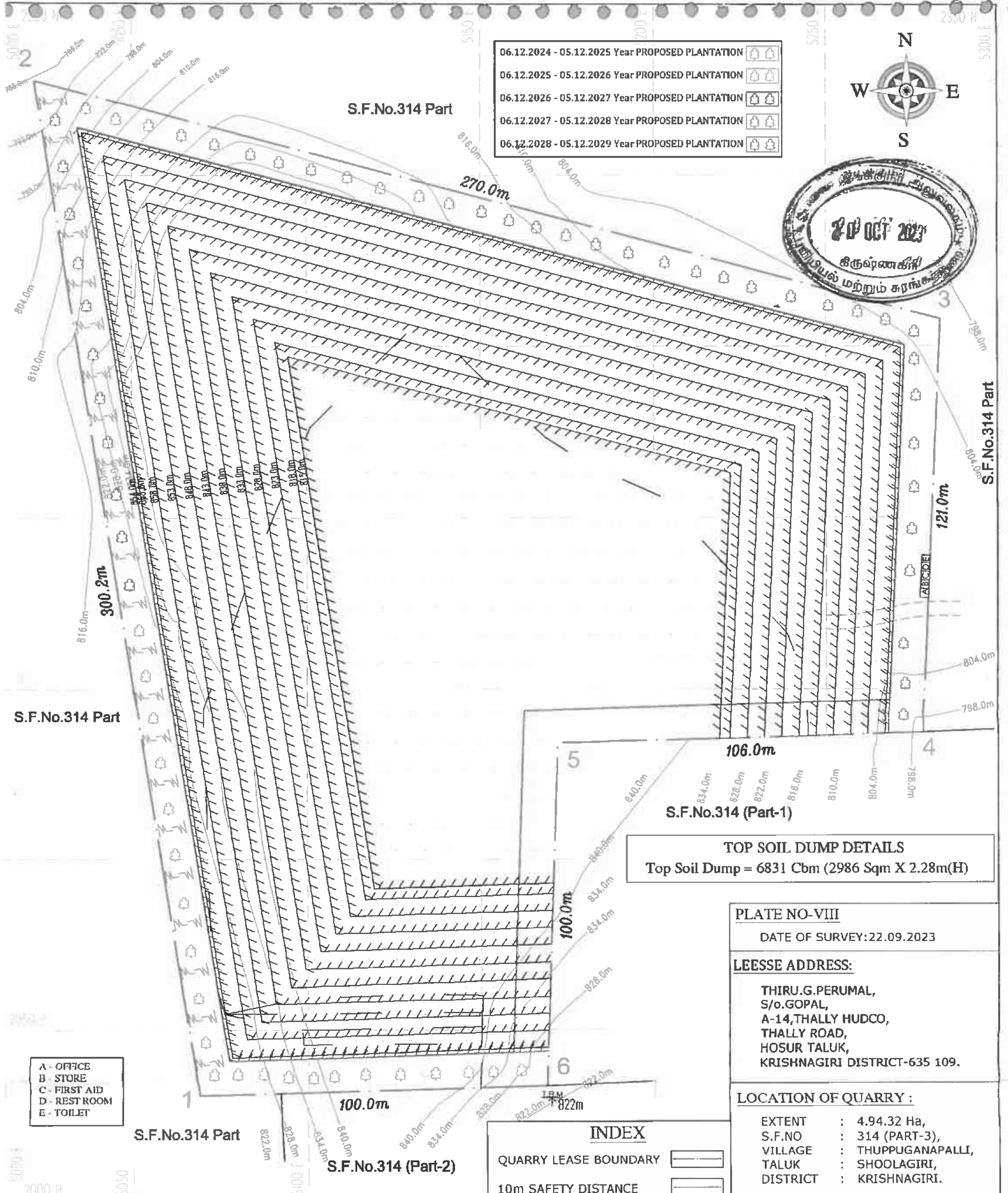
SCALE 1 : 1000

Prepared By:

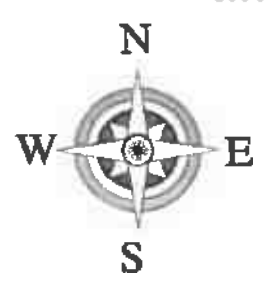
I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR, M.Sc.,
 QUALIFIED PERSON

MINEABLE RESERVES							
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in (m3)	Mineable Reserves in m3 (100%)	Top Soil in m3
XY-AB	I	100	67	1		5950	6700
	II	34	35	5	5950	5950	
	III	60	45	5	13500	13500	
	IV	69	50	5	17250	17250	
	V	76	55	5	20900	20900	
	VI	83	59	5	24485	24485	
	VII	239	101	5	120695	120695	
	VIII	250	103	5	128750	128750	
	IX	240	98	5	117600	117600	
	X	230	93	5	106950	106950	
	XI	220	88	3	58080	58080	
Total=					614160	614160	6700
X1Y1-AB	I	1	131	1		6885	131
	II	81	17	5	6885	6885	
	III	93	35	5	16275	16275	
	IV	104	52	5	27040	27040	
	V	116	70	5	40600	40600	
	VI	125	88	3	33000	33000	
Total=					123800	123800	131
Grand Total=					737960	737960	6831



- 06.12.2024 - 05.12.2025 Year PROPOSED PLANTATION
- 06.12.2025 - 05.12.2026 Year PROPOSED PLANTATION
- 06.12.2026 - 05.12.2027 Year PROPOSED PLANTATION
- 06.12.2027 - 05.12.2028 Year PROPOSED PLANTATION
- 06.12.2028 - 05.12.2029 Year PROPOSED PLANTATION



S.F.No.314 Part

S.F.No.314 Part

S.F.No.314 Part

S.F.No.314 Part

S.F.No.314 (Part-2)

S.F.No.314 (Part-1)

- A - OFFICE
- B - STORE
- C - FIRST AID
- D - REST ROOM
- E - TOILET

TOP SOIL DUMP DETAILS
Top Soil Dump = 6831 Cbm (2986 Sqm X 2.28m(H))

PLATE NO-VIII
DATE OF SURVEY: 22.09.2023

LEESSE ADDRESS:
THIRU.G.PERUMAL,
S/o.GOPAL,
A-14,THALLY HUDCO,
THALLY ROAD,
HOSUR TALUK,
KRISHNAGIRI DISTRICT-635 109.

LOCATION OF QUARRY :
EXTENT : 4.94.32 Ha,
S.F.NO : 314 (PART-3),
VILLAGE : THUPPUGANAPALLI,
TALUK : SHOOLAGIRI,
DISTRICT : KRISHNAGIRI.

- INDEX**
- QUARRY LEASE BOUNDARY
 - 10m SAFETY DISTANCE
 - TEMPORARY BENCH MARK
 - TOPSOIL
 - ROUGH STONE
 - CONTOUR LINE
 - QUARRY ROAD
 - MINE LAYOUT
 - PROPOSED DUMP

MINE LAYOUT LAND USE PATTERN

DESCRIPTION	PRESENT AREA (Ha)	AREA IN USE DURING THE QUARRYING PERIOD (Ha)	COLOR CODE
AREA UNDER QUARRYING	2.22.62	4.15.38	
INFRASTRUCTURE	NII	0.01.00	
ROADS	0.01.00	0.01.00	
GREEN BELT & DUMP	NII	0.76.94	
UN-UTILIZED AREA	2.70.70	NIL	
GRAND TOTAL	4.94.32	4.94.32	

PROGRESSIVE MINE CLOSURE PLAN
SCALE 1 : 1000

Prepared By:
I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR.M.Sc.,
QUALIFIED PERSON

ANNEXURE-VI
VAO CERTIFICATE

VAO காரணம்

கிராமத்தின் மரபுவழி குடிசை வட்டம்
 A/14 தர் அலகை, தர் மரபு அலகை
 தகவல்கள் அளிக்கும் தலைவர், உபதளபதி தலைவர் கையெழுத்து
 மரபுவழி கிராமத்தின் மரபுவழி கிராமத்தின் வட்டம்
 உத்தரவையின் மரபுவழி கிராமத்தின் மரபுவழி தகவல்
 40 மரபு 314 (பக்கம் 3) -ல் உத்தரவையின் 4.94.32 மரபுகள்
 மரபுவழியில் ~~கிராமத்தின்~~ மரபுவழியை அளிக்க
 கிராமத்தின் மரபுவழி கிராமத்தின் 500 ம² கிராமத்தின்
 மரபுவழி கிராமத்தின், கிராமத்தின், கிராமத்தின்
 மரபுவழி, மரபுவழி கிராமத்தின், மரபுவழி, மரபுவழி
 கிராமத்தின், மரபுவழி கிராமத்தின் மரபுவழி கிராமத்தின்
 கிராமத்தின் கிராமத்தின்

கிராமத்தின்
 VILLAGE ADMINISTRATIVE OFFICER
 131, THUPPUGANAPALLI (VIII)
 Shoolagiri (Tk), Krishnagiri Dt.

G. Perumal

ANNEXURE-VII
BLASTING AGREEMENT



VISHNU EXPLOSIVES



No.235/9, R.G. Nagar Engineer's Colony Extension, Jagir Reddipatty, Salem - 636 302.

Ref:

Date :

To

G. Perumal,
S/o. Gopal,
A-14, Thally Hudco,
Thally Road,
Hosur Taluk
Krishnagiri District- 635 109.

Sir,

Sub: Willingness to do Explosives Blasting Works – Reg.

With respect to the above subject, we would like to introduce myself as the Explosives Blasting Contractors, for which our LICENCE NO: E/HQ/TN/22/335(E64278) & E/SC/TN/22/463(E37227) S.F.No.344/3B, Paiyur Village, Krishnagiri Taluk magazine is situated in No.273-A, Keel Paiyur Village, Kaveripattinam, Krishnagiri, Tamilnadu-635 112.

We were engaged in professional blasting contract works with all facilities and License holders to carry out blasting works in specified time and period covered under Explosives Rules, 2008.

We kindly request yourself to engage us to do Explosives Blasting Works in your proposed Rough stone Quarry situated at S.F.No: 314(Part-3) in Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District over an extent of 4.94.32 hectares.

SERVING BEST AT ALL TIMES

Thanking you.

For VISHNU EXPLOSIVES,

K. Venkatesh
Authorised Signatory

Enclosure: Magazine License Copy.



भारत सरकार | Government of India

वाणिज्य और उद्योग मंत्रालय | Ministry of Commerce & Industry

पेट्रोलेियम तथा विस्फोटक सुरक्षा संगठन (पेसो) | Petroleum & Explosives Safety Organisation (PESO)

पूर्व नाम- विस्फोटक विभाग | Formerly- Department of Explosives

नंबर-3, पाँचवा ईस्ट क्रॉस रोड | No.3, 5th East Cross Road

गांधी नगर वेल्लूर | Gandhi Nagar Vellore 632006

फोन (Phone)- 2242513 | फेक्स (Fax)-

ई-मेल Email: dyceevellore@explosives.gov.in

संख्या (No.) : E/SC/TN/22/739(E109712)

संवा म | 16,

दिनांक (Date): 02/03/2023

GPT Blue Metal,

A-14, Thully HUDA, Thully Road, Town Village - Hosur

District-KRISHNAGIRI, State-Tamil Nadu, Pincode - 635109

विषय | Survey No.95/2, 108, 103, 107, 102/2, ग्राम Thiyarana Durgam Village, Uddanapalli Post, Shoola, जिला KRISHNAGIRI, राज्य Tamil Nadu में विस्फोटक के मैगजीन में उपयोग के लिए कब्जा हेतु विस्फोटक नियम, 2008 के अंतर्गत LE-3 में जारी अनुज्ञप्ति सं E/SC/TN/22/739(E109712) के नवीनीकरण संदर्भ में।
Subject: Possession for Use of of Explosives from magazine situated at Survey No.:95/2, 108, 103, 107, 102/2, Thiyarana Durgam Village, Uddanapalli Post, Shoola, Dist. KRISHNAGIRI, Tamil Nadu -Licence No.: E/SC/TN/22/739(E109712) granted in Form LE-3 of Explosives Rules, 2008 - Renewal regarding
महोदय | Sir,

आपका उपर्युक्त विषय पर पत्र संख्या 81578 दिनांक 02/03/2023 का संदर्भ ग्रहण करें। विस्फोटक नियम, 2008 के अंतर्गत प्ररूप LE-3 में जारी अनुज्ञप्ति दिनांक 31/3/2028 तक नवीनीकृत कर इस पत्र के साथ भेजी जा रही है।

Reference to your letter No. : 81578 dated: 02/03/2023, the subject licence duly renewed upto 31/3/2028 and issued in Form LE-3 of Explosives Rules, 2008 is forwarded herewith.

अनुज्ञप्ति के आगामी नवीकरण हेतु कृपया निम्नलिखित दस्तावेज दिनांक 31/03/2028 से पहले इस कार्यालय को भेजे जाएं

For further renewal of licence, please submit the following documents so as to reach this office on or before 31/3/2028.

- प्ररूप आरई-1 में विधिवत पूर्ण एवं हस्ताक्षरित आवेदन।
Application in Form RE-1 duly filled in and signed.
- एक से पाँच वर्ष के अनुज्ञप्ति शुल्को का, विस्फोटक नियम, 2008 के तहत ऑनलाइन आवेदन पोर्टल पर उपलब्ध ई-भुगतान सुविधा के माध्यम से लाइसेंस शुल्क ऑनलाइन जमा किया जाना है।
Licence fees renewable for one to five years, to be submitted online through e-payment facility available on online application portal under the Explosives Rules, 2008.
- अनुमोदित प्लान के साथ मूल अनुज्ञप्ति।
Original licence with approved plan.
- कृपया इस संबंध में विस्फोटक नियम, 2008 के नियम 112 का भी संदर्भ ग्रहण करें।
In this connection, please also refer to Rule 112 of Explosives Rules, 2008.
- विस्फोटकों के क्रय हेतु आरई-11 में मांगपत्र (इंडेंट) आपूर्तिकर्ता को दिया जाए और उसी की एक प्रति इस कार्यालय को भेजी जाए। आतिशबाजी गोदाम के लिए लागू नहीं है।
Indent for purchase of explosives shall be placed in RE-11 with the supplier and copy of the same shall be sent to this office. (Not applicable for fireworks store house)
- कृपया विस्फोटकों की त्रैमासीक विवरणी हर तिमाही के अंत में आरई-7 में प्रस्तुत की जाए। विवरणी इस कार्यालय के कार्यालय में आगामी तिमाही के 10 तारीख से पहले पहुंच जानी चाहिए। आतिशबाजी गोदाम के लिए लागू नहीं है। Please submit quarterly returns of explosives in RE-7 at the end of every quarter so as to reach this office by 10th of the succeeding quarter. (Not applicable for fireworks store house)
- सभी ब्लास्टिंग ऑपरेशन एक सक्षम द्वारा की जाएगी जो उपरोक्त नियमों के तहत एक वेध शॉट फायर प्रमाणपत्र धारक हो। हालांकि, खान अधिनियम 1952 के अधिन आने वाले खानों में ब्लास्टिंग ऑपरेशन करने वाले ब्लास्टर की योग्यता उसी अधिनियम से निर्धारित हो।
All blasting operations shall be carried out by a competent person holding a valid shot firer's permit granted under above rules. However, blasting operations in mines coming under the purview of the Mines Act 1952, the blaster shall have qualifications prescribed in the regulations framed under the said Act.

भवदीय | Your's faithfully

(डा.डी.एल.कांबले | Dr. Dashaarath Laxman Kamble)

विस्फोटक नियंत्रक | Controller of Explosives

कृते विस्फोटक नियंत्रक | For Controller of Explosives

वेल्लूर | Vellore

प्रतिलोप प्रेषित | Copy Forwarded to:

1. जिला मजिस्ट्रेट (District Magistrate), KRISHNAGIRI (Tamil Nadu)- सूचना के लिए (for information.)

विस्फोटक नियंत्रक, वेल्लूर

Controller of Explosives, Vellore

कृते विस्फोटक नियंत्रक | For The Controller of Explosives,

वेल्लूर | Vellore

(अधिक जानकारी जैसे आवेदन की स्थिति, शुल्क आदि के लिए हमारी वेबसाइट <http://peso.gov.in> देखें।)

(For more information regarding status, fees and other details please visit our website <http://peso.gov.in>)

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

G. Parimal

अनुज्ञापित प्ररूप एल. ई.-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) स (घ) देखें।)

(See article 3(a) to (d) of Part I of Schedule IV of Explosives Rules, 2008)

(ग) उपयोग के लिए एक समय पर वर्ग 1, 2, 3, 4, 5 या वर्ग 7 के विस्फोटक या किसी भेगजोन में वर्ग 6 के विस्फोटक रखने के लिए अनुज्ञापित Licence to possess - (c) for use, explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazine

अनुज्ञापित सं. (Licence No.) : E/SC/TN/22/739(E109712)
 वार्षिक फीस रेट (Annual Fee Rs): 9800/-



1. Licence is hereby granted to

GPT Blue Metal (अधिभागी / Occupier : G.Perumal), A-14, Thully HUDCO, Thully Road, Town/Village - Hosur, District-KRISHNAGIRI, State-Tamil Nadu, Pincode - 635109

को अनुज्ञापित अनुदस की जाती है।

2. अनुज्ञापितधारी की प्रास्थिति | Status of licensee - Proprietorship Firm

3. अनुज्ञापित निम्नलिखित प्रयोजनों के लिए विधिमान्य है।

Licence is valid only for the following purpose

4. अनुज्ञापित विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिमान्य है।

Licence is valid for the following kinds and quantity of explosives: -- (क) (a)

possess for use of Nitrate Mixture, Safety Fuse, Detonating Fuse, Electric and/or Ordinary Detonators, - के उपयोग के लिए

Sr. No.	नाम और विवरण Name and Description	वर्ग और प्रभाग Class & Division	उप-प्रभाग Sub-division	मात्रा किसी एक समय में Quantity at any one time
1	Nitrate Mixture	2.0	0	4150 Kg
2	Safety Fuse	0.1	0	10000 Mtrs
3	Detonating Fuse	0.2	0	20000 Mtrs
4	Electric and/or Ordinary Detonators	0.3	0	44000 Nos

(ख) किसी एक कलेंडर मास में खरीदे जाने वाले विस्फोटक की मात्रा (अनुच्छेद 3(ख) और (ग) के अधीन अनुज्ञापित के लिए)

(h) Quantity of explosives to be purchased in a calendar month applicable for licence under article 3(b) and (c)

10 times as above.

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुज्ञापित परिसर की पुष्टि होती है।

रेखाचित्र क्र. (Drawing No.) E/SC/TN/22/739(E109712)

दिनांक (Dated) 08/03/2019

The licensed premises shall conform to the following drawing(s)

6. अनुज्ञापित परिसर निम्नलिखित पते पर स्थित हैं। (The licensed premises are situated at following address

Survey No. 95/2, 108, 103, 107, 102/2, ग्राम (Town/Village) **Thiyarana Durgam Village, Uddanapalli Post, Shoola**

पोलिस थाना (Police Station) : Uddanapalli

ज़िला (District) **KRISHNAGIRI**

राज्य (State)

Tamil Nadu

पिनकोड (Pincode)

635109

दूरभाष (Phone)

ई मेल (E-Mail)

फैक्स (Fax)

7. अनुज्ञापित परिसर में निम्नलिखित सुविधाएं अंतर्भूत हैं।

The licensed premises consist of following facilities.

one RCC magazine

8. अनुज्ञापित समय - समय पर वषासंशोधित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपायवधों के अधीन रहते हुए अनुदस की जाती है।

The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions, additional conditions and the following Annexures

- उपरोक्त क्रम सं. 5 में यथा कथित रेखाचित्र (स्थान, सन्निर्माण संबंधी और अन्य विवरण दर्शाते हुए)।
Drawings (showing site, constructional and other details) as stated in serial No- 5 above
- अनुज्ञापित प्राधिकारी द्वारा हस्ताक्षरित इस अनुज्ञापित की शर्तों और अतिरिक्त शर्तों।
Conditions and Additional Conditions of this licence signed by the licensing authority
- दूरी प्ररूप DE-2 | Distance Form DE-2

9. यह अनुज्ञापित तारीख 31 मार्च 2023 तक विधिमान्य रहेगी। This licence shall remain valid till 31st day of March 2023.

यह अनुज्ञापित, अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट सेट-VIII के अधीन तथा उपवर्णित इस अनुज्ञापित की शर्तों का अधिकतम करने या यदि अनुज्ञापित परिसर योजना या उद्योग संलग्न उपबंध में दर्शित विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिसंहत की जा सकती है, जहां वह लागू हो।

This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexure attached hereto.

तारीख | The Date - 08/03/2019

Sd/-
संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives
South Circle, Chennai

नवीनीकरण के पृष्ठान्न के लिए स्थान
Space for Endorsement of Renewal

नवीनीकरण की तारीख
Date of Renewal

समाप्ति की तारीख
Date of Expiry

अनुज्ञापन प्राधिकारी के हस्ताक्षर और स्टाम्प
Signature of licensing authority and stamp

02/03/2023

31/03/2028

Controller of Explosives, Vellore

कानूनी चेतावनी : विस्फोटकों का गलत ढंग से चलाने या उनका दुरुपयोग विधे के अधीन गंभीर दंडित अपराध होगा।
Statutory Warning : Mishandling and misuse of explosives shall constitute serious offence under the law.

Note :- This is system generated document does not require physical signature. Applicant may take printout for their records.

G. Perumal

ANNEXURE-VIII
EC OBTAINED FROM DEIAA

THIRU C.KATHIRAVAN, I.A.S.,
CHAIRMAN/
DISTRICT COLLECTOR.

Krishnagiri District
Environment Impact
Assessment Authority,
Room No.30,
Collectorate,
Krishnagiri.

ENVIRONMENTAL CLEARANCE

Lr.No.03/DEIAA-KGI/EC No.60/2018 dated: .08.2018

To

Thiru. G.Perumal ,
S/o. Gopal,
A-14, Thally Hudco,
Thally Road, Hosur Taluk,
Krishnagiri District.

Sir,

Sub: DEIAA - Application for Environment Clearance for the Proposed quarrying and transportation of 2589553 cbm of Rough Stone generated in the rough stone quarry over an extent of 4.94.32 Hects. in Government land S.F.No. 314(part-3) of Thuppuganapalli village of Shoolagiri Taluk Krishnagiri District preferred by Thiru. G.Perumal , S/o. Gopal, A-14, Thally Hudco, Thally road, Hosur Taluk, Krishnagiri District - Issue of Environmental Clearance - Reg.

- Ref: 1. THIRU. G.PERUMAL , S/o. Gopal, Application for Environment Clearance dated 08.05.2018
2. Minutes of the DEAC meeting conducted on 25.08.2018
3. Minutes of the DEIAA meeting held on 27.08.2018

-o0o-

Details of Minor mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of minor mineral rough stone based on the particulars furnished in your application as shown below:

1.	Name of Project Proponent and address	THIRU. G.PERUMAL , S/o. Gopal, A-14, Thally Hudco, Thally road, Hosur Taluk, Krishnagiri District
----	---------------------------------------	--

2.	Location of the Proposed Activity		
	Survey Number and Extent		314(part-3) Extent :4.94.32 hecets
	Latitude and Longitude		12° 36' 45.64" N to 12° 36' 55.36" N 77° 55' 16.83 E to 77° 55' 25.45" E
	Topo Sheet No.		57 - H/14
	Village		Thuppuganapalli
	Taluk		Shoolagiri
	District		Krishnagiri District
3.	Proposed Activity		
	i.	Minor mineral	Rough Stone
	ii.	Mining Lease Area	4.94.32 Hecets.,
	iii.	Approved quantity	2589553 cbm of Rough Stone
	iv.	Depth of Mining	85 mts (including topsoil and burden) for a period of 5 years.
	v.	Type of mining	Open cast shallow mining method
	vi.	Category (B1/B2)	B2
	vii.	Precise Area Communication	The District Collector Roc.No.214/2018/Mines dated:09.03.2018
	viii.	Mining Plan approval	Mining Plan approved by the Deputy Director of Geology of Mining Krishnagiri Lr.No.214/2018/Mines Dt:07.05.2018
	ix.	Mining lease period	10 years Environment Clearance for 5 years
4.	Whether Project area attracts any general conditions specified in the EIA notification, 2006 as amended:-		Not attracted Affidavit furnished
5.	Man Power requirement per day		18 Employees
6.	Utilities		
	i.	Source of Water	a. For Drinking and Domestic purpose water will be purchased from approved water vendors. b. For dust suppression and green belt development water from the existing bore hole situated near by the quarry area will be used.
	ii.	Quantity of Water Requirement in KLD:	
		a. Domestic & Drinking	2.5 kilo litre
		b. Industrial	--
		c. Green Belt & Dust	1.600 kilo litre

		Suppression	
	iii.	Power requirement	
	a.	Domestic purpose	TNEB
	b.	Industrial purpose	Fuels is used for operating machineries and vehicles during the quarrying process and transportation and the fuel required for the entire project life is 2079912 Lts. of HSD.
7.		Cost	
	i.	Project Cost	Rs.4,84,60,000/-
	ii.	EMP Cost	Rs.3,70,000/-
8.		Public Consultation:-	Not required as per O.M. dated 24.12.2013 of MoEF, GOI
9.		Date of Appraisal by DEAC: Agenda No.	Agenda No.11 of 3 rd meeting of DEAC conducted on 25.08.2018
10.		Date of review / discussion by DEIAA and the Remarks:- The proposal was placed before the DEIAA in its 3 rd meeting on 27.08.2018 as agenda No.11 and the authority after careful consideration, decided to grant Environmental Clearance to the said project of quarrying of rough stone subject to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.	
11.		Validity: This Environmental Clearance is granted to quarry of Rough Stone for the production quantity of 2589553 Cbm of rough stone for the period of five years from the date of execution of the quarrying lease deed.	
12.		NBWL Clearance: The proposal area is situated 8.40 kms away from The Cauvery north Wild Life Sanctuary and it does not Attract NBWL clearance.	
13		Special Condition: i) Ground Water Quality test should be conducted periodically. ii) Water Sprinkling arrangement shall be maintained as proposed. iii) Environment Management plan should be submitted before the grant of permission.	

Conditions to be Compiled before / during commencing operations:-

(1) The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that

- i) The project has been accorded Environmental Clearance.
- ii) Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.

- iii) Environmental Clearance may also be seen on the website of the State Level Environment Impact Assessment Authority.
 - iv) The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the DEIAA.
- (2). The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.
 - (3). **NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 8.5 Km from the proposed project site. The CNWL Sanctuary so it is advised to get NBWL Clearance.**
 - (4). The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
 - (5). A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.
 - (6). Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
 - (7). The proponent shall ensure that First Aid Box is available at site.
 - (8). The excavation activity shall not alter the natural drainage pattern of the area.
 - (9). The excavated pit shall be restored by the project proponent for useful purposes.
 - (10). The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
 - (11). The quarrying operation shall be restricted between 7 AM and 5 PM.
 - (12). The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
 - (13). A minimum distance of 15 mts. From any civil structure shall be kept from the periphery of any excavation area.
 - (14). Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.

(15). The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.

(16). Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.

(17). Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.

(18). The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.

(19). Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.

(20). A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.

(21). The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, GoI on 16.11.2009. **(GLC = Ground Level Concentration), (NAAQ = Noise and Ambient Air Quality)**

(22). The following measures are to be implemented to reduce Air Pollution during transportation of mineral

(i). Roads shall be graded to mitigate the dust emission.

(ii). Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust.

(23). The following measures are to be implemented to reduce Noise Pollution

(i). Proper and regular maintenance of vehicles and other equipment.

(ii). Limiting time exposure of workers to excessive noise.

(iii). The workers employed shall be provided with protection equipment and earmuffs etc.

(iv). Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

(24). Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.

(25). Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Assistant Director, Ground Water Division, PWD, Dharmapuri.

(26) Rain water harvesting to collect and utilize the entire water falling in land area should be provided by construction of a storage tank with a capacity of 5,00,000 litres and the rain water harvested in the entire quarry area should be stored in it and used for the quarry purpose like dust prevention, wet drilling, providing water for green belt etc.

(27). Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.

(28). Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.

(29). The following measures are to be adopted to control erosion of dumps:-

- (i). Retention/ toe walls shall be provided at the foot of the dumps.
- (ii). Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.

(30). Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.

(31). Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(32). Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season. **Photographs of the silt trap should be furnished before commencing quarry operation.**

(33). The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the

mining operation. If at any stage, that the ground water is getting depleted due to the quarrying activity, necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Dharmapuri shall monitor.

(34). No tree-felling shall be done in the leased area, except only with the permission from competent Authority.

(35). To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution and it should be monitored by the District Environmental Engineer, TNPCB, Hosur on yearly basis.

(36). It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.

(37). It shall be ensured that there is no habitation is located within 500 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site

(38). Ground water quality monitoring should be conducted once in 3 Months.

(39). Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.

(40). Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI once in three months.

(41). Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI periodically once in six months.

(42). Bunds should be provided at the boundary of the project site and it should be properly maintained.

(43). The project proponent shall undertake plantation/ afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.

(44). At least 10 Neem trees should be planted around the boundary of the quarry site.

(45). Floor of excavated pit to be leveled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.

(46). The Project Proponent shall ensure a minimum of 2.5 of the annual turnover will be utilized for the CSR Activity.

(47). The Project Proponent shall provide solar lighting system to the nearby villages.

(48). The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.

(49). Rainwater shall be pumped out Via Settling Tank only

(50). Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.

(51). As per MoEF & CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry & Wild Life angle including clearance from obtaining committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.

(52). The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.

(53) Safety equipments to be provided to all the employees.

(54) Safety distance of 50 m has to be provided in case of railway, reservoir, canal/odai

(55) The Assistant / Deputy Director Department of Geology and Mining shall ensure that the proponent has engaged the blaster with valid Blasting license /certificate obtained from the competent authority before execution of mining lease.

(56) The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.

(57) The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.

(58) The proponent shall furnish the data obtained from the Public Works Department regarding the details of ground water table in the quarry site.

(59) The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh case before execution of mining lease.

(60) The proponent has to display the name board at the quarry site showing the details of proponent, leased period, extent etc., with respect to the existing activity before execution of mining.

(61) Heavy earth machinery equipments if utilized, after getting approval from the competent authority.

(62) The environmental norms shall be monitored by the District Environmental Engineer, Tamil Nadu Pollution Control Board, Hosur .

(63) The Assistant Director Public Works Department, Ground Water Division Dharmapuri shall monitor whether the quarrying activity is carried out above the ground water level on yearly basis.

(64) NOC for sanitary certificate shall be obtained from the Deputy Director of Health Services, Krishnagiri.

(65) Yearly medical examination of the quarry workers should be carried out by a registered medical practitioner and the report should be filed in the quarry office in a separate file and copy should be sent to the Deputy Director, Health Services, Krishnagiri.

(66) Closed circuit camera should be erected at the quarry site and the passage of vehicles in and out of the quarry should be recorded and the footage of the recordings of the camera should be maintained and should be produced before the enforcing officials when ever called for.

(67) Vehicles used for transportation of quarried materials should be fitted with GPS and monitored.

(68) Pit Mouth register should be maintained in online

(69) Auditor report on the annual turnover amount should be submitted to the District Collector within one month from the end of the financial year.

(70) 02.5% of the turn over amount should be utilized for the CSR activity after consultation with the District Collector.

B. General Conditions:

(1) EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.

(2) The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.

(3) No change in mining technology and scope of working should be made without prior approval of the DEIAA, Tamil Nadu.

(4) No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.

- (5) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
- (6) Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
- (7) A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
- (8) Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
- (9) Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying them mineral shall not be overloaded.
- (10) Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
- (11) All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
- (12) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
- (13) Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
- (14) The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
- (15) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its regional office located at Chennai.

- (16) The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
- (17) This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance
- (18) The DEIAA, Krishnagiri may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
- (19) The DEIAA, Krishnagiri may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this DEIAA.TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the environmental clearance.
- (20) Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
- (21) The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
- (22) The Applicant must provide dust arresting mesh to prevent dust control.
- (23) Quarrying recommended up to a depth of 7m below ground level. Ground water quality test to be done periodically.
- (24) Regular medical checkups to be conducted once in 3 months. Take action to remove water stagnation.
- (25) NOC shall be obtained from DGMS for working common boundary with quarries.
- (26) Water bodies to be protected.
- (27) Ground water table has to be assured.
- (28) All other conditions stipulated by other Statutory/ Government authorities shall be complied.

(29) As per the Hon'ble supreme court order since area is locate with in 10 kms from the Cauvery north wild life sanctuary national board of wildlife clearance should be obtained before starting the quarrying operations.

(30) 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

OIL

4/278
CHAIRMAN DEIAA-KGI/
DISTRICT COLLECTOR,
KRISHNAGIRI.

Copy to

- 27/8/18 27/8/18 22/09/18
1. The Secretary, Ministry of Mines, Government of India , Shastri Bhawan, New Delhi
 2. The Principal Secretary, Environment and Forest Department, Government of Tamil Nadu, Tamil Nadu.
 3. The Principal Secretary to Government, Industries Department, Government of Tamil Nadu, Tamil Nadu.
 4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai-34.
 5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex East Arjun Nagar, New Delhi 110 032.
 6. The Member Secretary, State Level Environmental Impact Assessment Authority Tamil Nadu Panagal Building Saidapet, Chennai
 7. The Chairman Tamil Nadu Pollution Control Board, 76.Mount Salai (Guindy, Chennai-32)
 8. The Commissioner of Geology and Mining, Guindy, Chennai-32
 9. E1 Division, Ministry of Environment and Forests Paryavaran Bhawan, New Delhi.
 10. File No.31/ DEIAA/KGI/2018.

ANNEXURE-IX
EXISTING PIT DIMENSION
LETTER

From

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

To

Thiru.G.Perumal,
S/o Gopal A-14,
Thally Hudco, Thally road,
Hosur Taluk - 635 109,
Krishnagiri Dist.

Roc. No. 214/2018/Mines dated: .10.2023

Sir,

Sub: Mines and Minerals - Krishnagiri District - Rough Stone - Thuppuganapalli village - Government Poramboke land in S.F.No.314 (Part-3) over an extent 4.94.32 Hect of Rough Stone quarry lease granted to Thiru.G.Perumal - Quarry pit dimension details - Furnished - reg.

- Ref
1. The District Collector, Krishnagiri Proc.Rc.No. 214/2018/Mines dated: 09.03.2018.
 2. Mining Plan approved by the Deputy Director of Geology and Mining, Krishnagiri vide letter Rc.No. 214/2018/Mines dated: 07.05.2018.
 3. Thiru.G.Perumal letter dated: 04.08.2023.
 4. Sub-Inspector of Survey Report dated : 04.10.2023

-o0o-

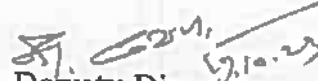
Kind attention is invited to the references cited above.


2) Thiru.G.Perumal, Krishnagiri has been granted Rough Stone quarrying lease over an extent of 4.94.32 hecets of Government Poramboke land S.F.No.314 (Part-3) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District for a period of 10 years vide The District Collector, Krishnagiri Proc. Rc.No. 214/2018/Mines dated: 06.12.2019, under the provisions of Rule 8 of Tamil Nadu Minor Mineral Concession Rule 1959. The lease deed was executed on 06.12.2019 and the lease period is valid upto 05.12.2029.

3) The Mining plan for Rough Stone in Thuppuganapalli Village, Shoolagiri Taluk was approved by the Deputy Director of Geology and Mining, Krishnagiri vide letter Rc.No. 214/2018/Mines dated: 07.05.2018.

4) The pit dimension of the subject quarry requested by the applicant to furnish the same before SEIAA in order to get Environmental Clearance. In this connection the quarry pit dimension measured by Sub-Inspector of Survey, Dept of Geology & Mining, Krishnagiri is furnished as below.

Existing Pit Dimension as on 04.10.2023			
Sl.No.	PIT NO.	Area in Sq.Mtr.	Depth in (m)
1.	Pit - I	240	3
2.	Pit - II	295	5
3.	Pit - II	312	9
4.	Pit - IV	21415	16
	TOTAL	22262	


Deputy Director
Dept of Geology and Mining,
Krishnagiri.


17/10/23

ANNEXURE-X
APPROVED & PERMIT ISSUED
QUANTITY LETTER

From

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

To

Thiru.G.Perumal,
S/o Gopal A-14,
Thally Hudco, Thally road,
Hosur Taluk - 635 109,
Krishnagiri Dist.

Roc. No. 214/2018/Mines dated: 17.10.2023

Sir,

Sub: Mines and Minerals - Krishnagiri District - Rough Stone - Thuppuganapalli village - Government Poramboke land in S.F.No.314 (Part-3) over an extent 4.94.32 Hect of Rough Stone quarry lease granted to Thiru.G.Perumal - Details of quantity approved and permit issued quantity - requested by the lessee - Details furnished - regarding.

- Ref
1. The District Collector, Krishnagiri Proc.Rc.No. 214/2018/Mines dated: 09.03.2018.
 2. Mining Plan approved by the Deputy Director of Geology and Mining, Krishnagiri vide letter Rc.No. 214/2018/Mines dated: 07.05.2018.
 3. Thiru.G.Perumal letter dated: 04.08.2023.

-o0o-

Kind attention is invited to the references cited above.

Thiru.G.Perumal, Krishnagiri has been granted Rough Stone quarrying lease over an extent of 4.94.32 hecets of Government Poramboke land S.F.No.314 (Part-3) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District for a period of 10 years vide The District Collector, Krishnagiri Proc. Rc.No. 214/2018/Mines dated: 06.12.2019, under the provisions of Rule 8 of Tamil Nadu Minor Mineral Concession Rule 1959. The lease deed was executed on 06.12.2019 and the lease period is valid upto 05.12.2029.

The Mining plan for Rough Stone in Thuppuganapalli Village, Shoolagiri Taluk was approved by the Deputy Director of Geology and Mining, Krishnagiri vide letter Rc.No. 214/2018/Mines dated: 07.05.2018.

In this connection, the lessee Thiru.G.Perumal, has requested vide letter dated: 04.08.2023 to issue the details of permit issued quantity to the subject quarry to furnish the same to apply for SEIAA.

In this connection, it is informed that the approved quantity of approved mining plan and permit issued quantity upto 21.08.2023 is furnished below.

	Approved Quantity	Permit Issued Quantity
As per Mining Plan Period 06.12.2019 to 05.12.2024 (upto 05.09.2023)	25,89,553	3,49,800

[Handwritten signature]
17/10/23

[Handwritten signature]
17.10.23
Deputy Director,
Dept of Geology and Mining,
Krishnagiri.

[Handwritten signature]
17/10/23

ANNEXURE-XI
BASELINE MONITORING REPORTS



ECO TECH LABS PVT LTD

ISO 9001:2015 and OHSAS-ISO 45001:2018 Certified Company

Plot No.48A, 2nd Main Road, Ram Nagar South Extension,
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

TEST REPORT

Report No : ETLS/A/129/260124

Report Date: 03.02.2024

Page 1 of 1

Name of the Client : **Thiru. G. Perumal, Rough Stone Quarry**
Address of the Project Site : **S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District**
Sample Name : **Air Quality** Sample Description : **Ambient air**
Sample Drawn By : **Eco Tech Labs P.Ltd** Sample Duration : **24Hrs**
Sampling Procedure : **ETL/QAD/SOP/09** Received date : **26-01-2024 to**
Sample Location : **Project Site** Completed on : **01-02-2024**

Test Method	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³
Date of Monitoring	IS: 5182 (P-23) :2006(RA:2012)	ETL/CHL/SOP/001	IS: 5182 (P- 2) 2001(RA:2012)	IS: 5182 (P- 6) :2006(RA :2012)
06.11.2023	50	22	10	19
08.11.2023	45	19	9	16
13.11.2023	44	18	8	15
15.11.2023	45	17	10	21
20.11.2023	48	22	9	18
22.11.2023	46	20	8	16
27.11.2023	47	20	10	19
29.11.2023	50	22	10	21
04.12.2023	47	21	10	21
06.12.2023	45	19	9	17
11.12.2023	45	21	8	15
13.12.2023	43	18	7	14
18.12.2023	46	21	9	18
20.12.2023	44	20	7	13
25.12.2023	45	17	9	17
27.12.2023	44	18	7	13
02.01.2024	44	18	7	14
04.01.2024	43	16	6	12
09.01.2024	41	16	7	16
11.01.2024	39	15	8	17
14.01.2024	41	16	9	20
18.01.2024	53	21	6	14
23.01.2024	43	17	7	15
25.01.2024	45	18	6	13
CPCB Standard	100	60	80	80

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

End of Report



Authorised Signatory - Chemical

S. Kokila
S. Kokila
Lab Manager

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TEST REPORT

Report No : ETLS/A/130/260124

Report Date: 03.02.2024

Page 1 of 1

Name of the Client : **Thiru. G. Perumal, Rough Stone Quarry**
Address of the Project Site : **S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District**

Sample Name : **Air Quality** Sample Description : **Ambient air**
Sample Drawn By : **Eco Tech Labs P.Ltd** Sample Duration : **24Hrs**
Sampling Procedure : **ETL/QAD/SOP/09** Received date : **26-01-2024 to**
Sample Location : **Masjid Thirumalai** Completed on : **01-02-2024**

Test Method	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³
Date of Monitoring	IS: 5182 (P-23) :2006(RA:2012)	ETL/CHL/SOP/001	IS: 5182 (P- 2) 2001(RA:2012)	IS: 5182 (P- 6) :2006(RA :2012)
06.11.2023	56	26	13	25
08.11.2023	54	25	10	18
13.11.2023	55	26	11	20
15.11.2023	51	23	9	17
20.11.2023	50	22	8	14
22.11.2023	53	24	11	22
27.11.2023	52	23	10	20
29.11.2023	54	25	9	16
04.12.2023	51	23	9	20
06.12.2023	54	24	10	22
11.12.2023	52	23	9	18
13.12.2023	52	23	11	24
18.12.2023	48	21	8	16
20.12.2023	46	19	7	14
25.12.2023	51	22	9	18
27.12.2023	47	20	7	15
02.01.2024	44	18	9	21
04.01.2024	47	20	8	17
09.01.2024	48	21	9	13
11.01.2024	51	23	7	14
14.01.2024	49	22	8	15
18.01.2024	49	21	7	13
23.01.2024	48	21	8	15
25.01.2024	50	21	9	19
CPCB Standard	100	60	80	80

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

End of Report



Authorised Signatory - Chemical

S. Kokila
Lab Manager

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TEST REPORT

Report No : ETLS/A/131/260123

Report Date: 03.02.2024

Page 1 of 1

Name of the Client : **Thiru. G. Perumal. Rough Stone Ouarrv**
Address of the Project Site : **S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District**

Sample Name : **Air Quality** Sample Description : **Ambient air**
Sample Drawn By : **Eco Tech Labs P.Ltd** Sample Duration : **24Hrs**
Sampling Procedure : **ETL/QAD/SOP/09** Received date : **26-01-2024 to**
Sample Location : **Govt. Hr. Sec School, devasanapalli** Completed on : **01-02-2024**

Test Method	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³
Date of Monitoring	IS: 5182 (P-23) :2006(RA:2012)	ETL/CHL/SOP/001	IS: 5182 (P- 2) 2001(RA:2012)	IS: 5182 (P- 6) :2006(RA :2012)
06.11.2023	60	28	13	21
08.11.2023	60	26	12	19
13.11.2023	62	30	14	23
15.11.2023	58	24	12	18
20.11.2023	61	27	13	20
22.11.2023	64	32	17	29
27.11.2023	62	29	16	27
29.11.2023	61	27	15	26
04.12.2023	57	26	12	23
06.12.2023	56	23	11	18
11.12.2023	60	27	13	24
13.12.2023	59	27	12	21
18.12.2023	61	28	14	26
20.12.2023	58	25	11	20
25.12.2023	58	27	12	22
27.12.2023	56	23	11	21
02.01.2024	57	27	10	20
04.01.2024	55	23	9	16
09.01.2024	54	21	8	15
11.01.2024	58	25	9	17
14.01.2024	57	25	10	18
18.01.2024	58	26	10	19
23.01.2024	54	23	8	15
25.01.2024	57	25	9	16
CPCB Standard	100	60	80	80

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

End of Report



Authorised Signatory - Chemical

S. Kokila
Lab Manager

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TEST REPORT

Report No : ETLS/A/132/260123

Report Date: 03.02.2024

Page 1 of 1

Name of the Client : **Thiru. G. Perumal, Rough Stone Quarry**
Address of the Project Site : **S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District**
Sample Name : **Air Quality** Sample Description : **Ambient air**
Sample Drawn By : **Eco Tech Labs P.Ltd** Sample Duration : **24Hrs**
Sampling Procedure : **ETL/QAD/SOP/09** Received date : **26-01-2024 to**
Sample Location : **Church, Nagamangalam** Completed on : **01-02-2024**

Test Method	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³
Date of Monitoring	IS: 5182 (P-23) :2006(RA:2012)	ETL/CHL/SOP/001	IS: 5182 (P- 2) 2001(RA:2012)	IS: 5182 (P- 6) :2006(RA :2012)
06.11.2023	58	26	11	19
08.11.2023	57	26	10	18
13.11.2023	55	23	9	15
15.11.2023	57	26	10	17
20.11.2023	56	25	12	22
22.11.2023	58	28	11	20
27.11.2023	54	23	12	20
29.11.2023	58	27	13	23
04.12.2023	59	26	11	18
06.12.2023	55	25	10	16
11.12.2023	57	27	11	18
13.12.2023	52	24	10	15
18.12.2023	51	24	9	15
20.12.2023	54	25	11	19
25.12.2023	56	24	12	20
27.12.2023	54	25	10	17
02.01.2024	53	25	9	18
04.01.2024	48	21	8	15
09.01.2024	51	22	7	14
11.01.2024	52	22	8	15
14.01.2024	54	25	9	18
18.01.2024	53	24	8	16
23.01.2024	52	22	7	15
25.01.2024	54	25	9	17
CPCB Standard	100	60	80	80

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

End of Report



Authorised Signatory - Chemical

S. Kokila
Lab Manager

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TEST REPORT

Report No : ETLS/S/136/081123

Report Date :03.02.2024

Page 1 of 2

Name of the Client : Thiru. G. Perumal, Rough Stone Quarry

Address of the Project Site : S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoolagiri Taluk,
Krishnagiri District

Sample Name : Noise Monitoring-

Sample Description : Ambient Noise

Sample Location : Project Site , 2, Masjid Thirumalai
3, Govt. Hr. Sec School,
devasanapalli 4, Church,
Nagamangalam 5, Nagamuniswarar
Temple

Sample Drawn By : Eco Tech Labs P. Ltd

Sampling date : 08.11.2023

Sampling Procedure : ETL/CHL/IOP/035

S. No	DAY NOISE (hrs)		Noise level in dB (A)				
	TIME ON	TIME OFF					
1	06.00	07.00	38	43	46	44	49
2	07.00	08.00	41	46	50	45	53
3	08.00	09.00	44	48	51	44	55
4	09.00	10.00	45	49	54	48	56
5	10.00	11.00	46	47	54	47	54
6	11.00	12.00	46	48	50	46	52
7	12.00	13.00	45	46	54	45	51
8	13.00	14.00	44	45	52	43	53
9	14.00	15.00	43	47	51	45	54
10	15.00	16.00	42	48	49	44	55
11	16.00	17.00	44	50	52	47	56
12	17.00	18.00	45	51	54	48	58
13	18.00	19.00	44	48	52	46	55
14	19.00	20.00	42	45	51	43	52
15	20.00	21.00	39	43	50	42	51
16	21.00	22.00	36	41	45	38	50



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TEST REPORT

Report No : : ETLS/S/136/081123

Report Date :03.02.2024

Page 2 of 2

S.No	NIGHT NOISE (hrs)		Noise level in dB (A)				
	TIME ON	TIME OFF					
17	22.00	23.00	35	39	43	37	49
18	23.00	24.00	33	36	40	36	45
19	24.00	01.00	32	34	37	33	44
20	01.00	02.00	30	31	36	31	42
21	02.00	03.00	31	32	38	30	41
22	03.00	04.00	30	33	37	33	44
23	04.00	05.00	32	34	39	36	46
24	05.00	06.00	34	38	42	38	48


CPCB Limits:

- | | | |
|------|------------------|---|
| i) | Industrial Area | : Day Time - 75 dB (A); Night Time - 70 dB(A) |
| ii) | Commercial Area | : Day Time - 65 dB (A); Night Time - 55 dB(A) |
| iii) | Residential Area | : Day Time - 55 dB (A); Night Time - 45 dB(A) |
| iv) | Silence Zone | : Day Time - 50 dB (A); Night Time - 40 dB(A) |
| v) | Working Zone | : Day Time - 90 dB (A) |

End Report



Authorised Signatory - Chemical


S. Kokila
Lab Manager

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TEST REPORT

Report No : ETLS/S/137/081123

Report Date :03.02.2024

Page 1 of 2

Name of the Client : **Thiru. G. Perumal, Rough Stone Quarry**
Address of the Project Site : **S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District**
Sample Name : **Noise Monitoring-** Sample Description : **Ambient Noise**
Sample Location : **Polytecnic College, Thimmasamy**
Sample Drawn By : **Eco Tech Labs P. Ltd** Sampling date : **08.11.2023**
Sampling Procedure : **ETL/CHL/IOP/035**

S. No	DAY NOISE (hrs)		Noise level in dB (A)	
	TIME ON	TIME OFF		
1	06.00	07.00	50	46
2	07.00	08.00	54	49
3	08.00	09.00	57	51
4	09.00	10.00	59	52
5	10.00	11.00	58	51
6	11.00	12.00	57	50
7	12.00	13.00	56	49
8	13.00	14.00	55	47
9	14.00	15.00	53	50
10	15.00	16.00	55	51
11	16.00	17.00	56	51
12	17.00	18.00	57	51
13	18.00	19.00	55	49
14	19.00	20.00	54	47
15	20.00	21.00	53	45
16	21.00	22.00	50	44



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TEST REPORT

Report No : ETLS/S/137/081123

Report Date :03.02.2024

Page 2 of 2

S.No	NIGHT NOISE (hrs)		Noise level in dB (A)	
	TIME ON	TIME OFF		
17	22.00	23.00	47	42
18	23.00	24.00	44	40
19	24.00	01.00	41	38
20	01.00	02.00	39	37
21	02.00	03.00	42	35
22	03.00	04.00	43	37
23	04.00	05.00	46	40
24	05.00	06.00	48	43

CPCB Limits:

- i) Industrial Area : Day Time - 75 dB (A); Night Time - 70 dB(A)
- ii) Commercial Area : Day Time - 65 dB (A); Night Time - 55 dB(A)
- iii) Residential Area : Day Time - 55 dB (A); Night Time - 45 dB(A)
- iv) Silence Zone : Day Time - 50 dB (A); Night Time - 40 dB(A)
- v) Working Zone : Day Time - 90 dB (A)

End Report



Authorised Signatory - Chemical


S. Kokila
Lab Manager

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TEST REPORT

Report No : ETLS/S/138/260124

Report Date : 03.02.2024

Page 1 of 1

Name of the Client : **Thiru. G. Perumal, Rough Stone Quarry**
 Address of the Project Site : **S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District**
 Sample Name : **Soil** Sample Description : -
 Sample Condition : **Good**
 Sample Drawn By : **Eco Tech Labs P.Ltd** Sampling date : **26.01.2024**
 Sampling Procedure : **ETL/QAD/SOP/08** Received date : **26.01.2024**
 Sample Location : **1, Project Site 2, Masjid Thirumalai 3 Govt. Hr. Sec School, devasanapalli** Commenced on : **26.01.2024**
 Customer Reference : - Completed on : **01.02.2024**

S. No	Parameters	Units	SQ-1	SQ-2	SQ-3	Test Method
1	pH	-	7.39	8.29	7.43	IS:2720(P-26)1987
2	Electrical Conductivity	ms/cm	0.08	0.17	0.25	IS:14767: 2016
3	Water holding Capacity	ml/L	3.11	4.94	4.8	ICARDA Page No:28
4	Chloride	mg/Kg	73.7	158	148	FAO 2007 Page No:35
5	Calcium	mg/Kg	51.2	95.4	116	FAO 2007 Page No:44
6	Sodium	mg/Kg	671	648	692	FAO 2007 Page No:44
7	Potassium	mg/Kg	603	696	609	FAO 2007 Page No:44
8	Organic matter	%	0.24	0.13	0.15	IS:2720 (P-22) 1972, RA:2010
9	Magnesium	mg/Kg	51.8	19.7	46.2	FAO 2007 - 44
10	Sulphate	mg/Kg	37.6	46.9	53.5	IS 14864-1999;RA:2008
11	CEC	meq/100g	11.1	10.5	9.8	FAO 2007 Page No:73
12	Carbonate	mg/Kg	nil	nil	nil	FAO 2007 Page No:25
13	BiCarbonate	mg/Kg	36.9	52.4	75.3	FAO 2007 Page No:25
14	TKN	%	0.06	0.23	0.18	FAO 2007 Page No:25
15	Bulk dencity	g/cm ³	1.58	1.21	1.47	IS:2720(P-24):1976 RA: 2010
16	Phosphorous	mg/Kg	39.6	53.1	31.5	ETL/CHL/SOP/004
17	Sand	%	75.0	68.0	64.3	ICARDA Page No:160
18	Clay	%	12.0	6.0	21.4	FAO 2007 Page No:48
19	Silt	%	13.0	26.0	14.3	FAO 2007 - 46
20	SAR	meq/Kg	15.8	15.8	13.8	FAO 2007 - 46
21	Silicon	%	0.098	0.085	0.099	IS : 14684 -1999

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

End of Report



Authorised Signatory - Chemical

S. Kokila
S. Kokila
Lab Manager

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- Unless specifically requested by customer the test items will not be retained more than 15 days from the date of issue of test report.
- The test results relate only to the test items.



ECO TECH LABS PVT LTD

ISO 9001:2015 and OHSAS-ISO 45001:2018 Certified Company

Plot No.48A, 2nd Main Road, Ram Nagar South Extension,
Pallikaranai, Chennai - 600 100.

Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

TEST REPORT

Report No : ETLS/S/139/260124

Report Date : 03.02.2024

Page 1 of 1

Name of the Client : Thiru. G. Perumal, Rough Stone Quarry

Address of the : S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoologiri Taluk, Krishnagiri District

Project Site

Sample Name : Soil

Sample Description : -

Sample Drawn By : Eco Tech Labs P.Ltd

Sample Condition : Good

Sampling date : 26.01.2024

Sampling Procedure : ETL/QAD/SOP/08

Receiveddate : 26.01.2024

Sample Location : 4, Church, Nagamangalam 5, Nagamuniswarar Temple 6,

Commenced on : 26.01.2024

Polytechnic College 7, Thimmasamy

Customer Reference : -

Completed on : 01.02.2024

S. No	Parameters	Units	SQ-4	SQ-5	SQ-6	SQ-7	Test Method
1	pH	-	7.14	8.42	6.98	7.82	IS:2720(P-26)1987
2	Electrical Conductivity	ms/cm	0.19	0.24	0.41	0.31	IS:14767: 2016
3	Water holding Capacity	ml/L	4.57	4.4	5.0	4.74	ICARDA Page No:28
4	Chloride	mg/Kg	118	56.4	148	31.1	FAO 2007 Page No:35
5	Calcium	mg/Kg	85.9	71.5	74.6	53.2	FAO 2007 Page No:44
6	Sodium	mg/Kg	706	749	634	635	FAO 2007 Page No:44
7	Potassium	mg/Kg	614	627	636	558	FAO 2007 Page No:44
8	Organic matter	%	0.26	0.19	0.33	0.46	IS:2720 (P-22) 1972,
9	Magnesium	mg/Kg	56.7	35.4	26.4	23.6	FAO 2007 - 44
10	Sulphate	mg/Kg	39.5	40.1	162	41.5	IS 14864-1999;RA:2008
11	CEC	meq/100g	10.3	9.5	10.8	9.5	FAO 2007 Page No:73
12	Carbonate	mg/Kg	nil	16.4	NIL	NIL	FAO 2007 Page No:25
13	BiCarbonate	mg/Kg	63.9	146	58.5	71.4	FAO 2007 Page No:25
14	TKN	%	0.22	0.1	0.19	0.21	FAO 2007 Page No:25
15	Bulk dencity	g/cm ³	1.28	1.25	1.18	1.27	IS:2720(P-24):1976 RA:
16	Phosphorous	mg/Kg	45.1	18.6	8.44	15.7	ETL/CHL/SOP/004
17	Sand	%	57.2	80.1	66.6	61.1	ICARDA Page No:160
18	Clay	%	21.4	13.3	6.22	5.6	FAO 2007 Page No:48
19	Silt	%	21.4	6.6	27.18	33.3	FAO 2007 - 46
20	SAR	meq/Kg	14.5	18.1	16.1	18.2	FAO 2007 - 46
21	Silicon	%	0.089	0.092	0.097	0.098	IS : 14684 -1999

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

End of Report



Authorised Signatory - Chemical

S. Kokila
Lab Manager

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Phone : 8144115515, Email : info@ecotechlabs.in / lab@ecotechlabs.in, Web : www.ecotechlabs.in

TEST REPORT

Report No : **ETLS/SW/142/260124** Report Date : **03.02.2024** Page 1 of 1

Name of the Client : **Thiru. G. Perumal, Rough Stone Quarry**
 Address of the Project Site : **S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District**
 Sample Name : **Water** Sample Description : **Surface Water**
 Sample Condition : **Good**
 Sample Drawn by : **Eco Tech Labs P.Ltd** Sampling date : **26.01.2024**
 Sampling Procedure : **ETL/QAD/SOP/07** Received date : **26.01.2024**
 Sample Location : **1. Obeapalayam Lake2 , Ponnaiyar River** Commenced on : **26.01.2024**
 Customer Reference : **-** Completed on : **01.02.2024**

I.CHEMICAL TESTING

1. Water

S.	Parameters	Test Method	SW - 1	SW - 2	Units
1	pH (at 25°C)	IS:3025(P -11)1983 RA: 2012	6.47	7.59	-
2	Electrical Conductivity	IS:3025(P -14) 2013	250	1180	µS/cm
3	Colour	IS:3025 (P -4)1983 RA: 2012	40	20	Hazen Unit
4	Turbidity	IS:3025(P -10)1984 RA: 2012	12.5	5.9	NTU
5	Total Dissolved Solids	APHA 23rd Edn.2017-2540-	145	699	mg/L
6	Total Suspended Solids	IS:3025(P-17)-1984 RA:2012	24.4	12.5	mg/L
7	Total Hardness as CaCO3	APHA 23rd Edn.2017-2340-	72.7	335	mg/L
8	Calcium Hardness as	APHA 23rd Edn2017.3500	50.5	222	mg/L
9	Magnesium Hardness as	APHA 23rd Edn.2017-3500	22.2	113	mg/L
10	Calcium as Ca	APHA 23rd Edn2017.3500	20.2	89.1	mg/L
11	Magnesium as Mg	APHA 23rd Edn.2017-3500	5.4	27.5	mg/L
12	Chloride as Cl	IS:3025(P -32)-1988 RA:	27.1	196	mg/L
13	Sulphate as SO4	APHA 23rd Edn.2017-4500	12.5	67.5	mg/L
14	Total Alkalinity as CaCO3	APHA 23nd Edn.2017-2320-	72.7	157	mg/L
15	Iron as Fe	IS:3025(P -53):2003 RA: 2014	1.03	0.43	mg/L
16	Silica as SiO2	IS:3025(P -35)1988 RA: 2014	9.52	21.3	mg/L
17	Fluoride as F	APHA 23rd Edn.2012-4500-	0.32	0.64	mg/L
18	Nitrate as NO3	IS:3025(P -34):1988 RA: 2014	5.21	25.4	mg/L
19	Potassium as K	IS:3025(P -45):1993 RA: 2014	5.5	15.2	mg/L
20	Sodium as Na	IS:3025(P -45):1993 RA: 2014	17.5	173	mg/L
21	Total Kjeldahl Nitrogen as	APHA 23rd Edn.2012-4500	12.8	37.8	mg/L
22	Biochemical oxygen	IS:3025(P -45):1993 RA: 2014	11.2	12.2	mg/L
23	Chemical Oxygen Demand	IS:3025(P -45):1993 RA: 2014	39.0	42.9	mg/L
24	Dissolved Oxygen	IS:3025(P -45):1993 RA: 2014	4.80	3.52	mg/L

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification,

End of Report



Authorised Signatory - Chemical

S. Kokila
Lab Manager

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TEST REPORT

Report No : ETL/W/140/260124

Report Date : 03.02.2024

Page 1 of 1

Name of the Client : Thiru. G. Perumal, Rough Stone Quarry

Address of the Project Site : S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District

Sample Name : Water

Sample Description : Bore Well

Sample Drawn by : Eco Tech Labs P.Ltd

Sample Condition : Good

Sampling Procedure : ETL/QAD/SOP/07

Sampling date : 26.01.2024

Sample Location : 1, Project Site 2, Masjid Thirumalai 3 Govt. Hr. Sec School, devasanapalli

Received date : 26.01.2024

Commenced on : 26.01.2024

Customer Reference : -

Completed on : 01.02.2024

I.CHEMICAL TESTING

1. Water

S. No	Parameters	Test Method	GW-1	GW-2	GW-3	Units
1	pH (at 25°C)	IS:3025(P -11)1983 RA: 2012	7.81	7.93	7.83	-
2	Electrical Conductivity	IS:3025(P -14) 2013	740	1520	1306	µS/cm
3	Colour	IS:3025 (P -4)1983 RA: 2012	4	4	4	Hazen Unit
4	Turbidity	IS:3025(P -10)1984 RA: 2012	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)	NTU
5	Total Dissolved Solids	APHA 23rd Edn.2017-2540-C	472	975	755	mg/L
6	Total Suspended Solids	IS:3025(P-17)-1984 RA:2012	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)	mg/L
7	Total Hardness as CaCO ₃	APHA 23rd Edn.2017-2340-C	238	529	368	mg/L
8	Calcium Hardness as	APHA 23rd Edn.2017.3500 Ca-B	174	408	210	mg/L
9	Magnesium Hardness as	APHA 23rd Edn.2017-3500 Mg-B	64.5	121	158	mg/L
10	Calcium as Ca	APHA 23rd Edn.2017.3500 Ca-B	69.6	164	84.2	mg/L
11	Magnesium as Mg	APHA 23rd Edn.2017-3500 Mg-B	15.7	29.4	38.3	mg/L
12	Chloride as Cl	IS:3025(P -32)-1988 RA: 2014	93.1	208	177	mg/L
13	Sulphate as SO ₄	APHA 23rd Edn.2017-4500 SO ₄ --E	45.2	148	85.3	mg/L
14	Total Alkalinity as CaCO ₃	APHA 23rd Edn.2017-2320-B	204	290	283	mg/L
15	Iron as Fe	IS:3025(P -53):2003 RA: 2014	BQL(LOQ:0.1)	BQL(LOQ:0.1)	BQL(LOQ:0.1)	mg/L
16	Silica as SiO ₂	IS:3025(P -35)1988 RA: 2014	16.4	29.4	21.7	mg/L
17	Fluoride as F	APHA 23rd Edn.2012-4500-F-D	0.394	0.42	0.65	mg/L
18	Nitrate as NO ₃	IS:3025(P -34):1988 RA: 2014	17.3	15.5	9.33	mg/L
19	Sodium as Na	IS:3025(P -45):1993 RA: 2014	75.8	195	148	mg/L
20	Potassium	IS:3025(P -45):1993 RA: 2014	19.1	10	22.5	mg/L

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification

End of Report



Authorised Signatory - Chemical

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TEST REPORT

Report No : ETLS/W/141/260124

Report Date : 03.02.2024

Page 1 of 1

Name of the Client : Thiru. G. Perumal, Rough Stone Quarry

Address of the Project Site : S.F. No. 314 (Part III) in Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District

Sample Name : Water

Sample Description : Bore Well

Sample Drawn by : Eco Tech Labs P.Ltd

Sample Condition : Good

Sampling Procedure : ETL/QAD/SOP/07

Sampling date : 26.01.2024

Sample Location : 4, Church, Nagamangalam 5, Nagamuniswarar Temple 6,
Polytechnic College 7, Thimmasamy

Received date : 26.01.2024

Commenced on : 26.01.2024

Customer Reference : -

Completed on : 01.02.2024

I.CHEMICAL TESTING

1. Water

S. No	Parameters	Test Method	GW-4	GW-5	GW-6	GW-7	Units
1	pH (at 25°C)	IS:3025(P -11)1983 RA: 2012	7.55	7.38	7.56	7.54	-
2	Electrical Conductivity	IS:3025(P -14) 2013	1310	660	690	830	µS/cm
3	Colour	IS:3025 (P -4)1983 RA: 2012	3	3	4	3	Hazen Unit
4	Turbidity	IS:3025(P -10)1984 RA: 2012	BQL(LOQ :1)	BQL(LOQ :1)	BQL(LOQ :1)	BQL(LOQ:1)	NTU
5	Total Dissolved Solids	APHA 23rd Edn.2017-2540-C	735	392	436	456	mg/L
6	Total Suspended Solids	IS:3025(P-17)-1984 RA:2012	BQL(LOQ :1)	BQL(LOQ :1)	BQL(LOQ :1)	BQL(LOQ:2)	mg/L
7	Total Hardness as CaCO ₃	APHA 23rd Edn.2017-2340-C	400	283	274	202	mg/L
8	Calcium Hardness as CaCO ₃	APHA 23rd Edn.2017.3500 Ca-B	255	174	238	133	mg/L
9	Magnesium Hardness as	APHA 23rd Edn.2017-3500 Mg-B	145	109	36.4	68.6	mg/L
10	Calcium as Ca	APHA 23rd Edn.2017.3500 Ca-B	102	69.6	95.5	53.4	mg/L
11	Magnesium as Mg	APHA 23rd Edn.2017-3500 Mg-B	35.3	26.5	8.84	16.7	mg/L
12	Chloride as Cl	IS:3025(P -32)-1988 RA: 2014	125	50.1	48.2	38.5	mg/L
13	Sulphate as SO ₄	APHA 23rd Edn.2017-4500 SO ₄ --	137	16.4	15.6	38.4	mg/L
14	Total Alkalinity as CaCO ₃	APHA 23rd Edn.2017-2320-B	279	248	317	386	mg/L
15	Iron as Fe	IS:3025(P -53):2003 RA: 2014	BQL(LOQ :0.1)	BQL(LOQ :0.1)	BQL(LOQ :0.1)	BQL(LOQ:0.1)	mg/L
16	Silica as SiO ₂	IS:3025(P -35)1988 RA: 2014	25.7	13.7	15.9	15.2	mg/L
17	Fluoride as F	APHA 23rd Edn.2012-4500-F-D	0.366	0.502	0.314	0.31	mg/L
18	Nitrate as NO ₃	IS:3025(P -34):1988 RA: 2014	20.3	14.6	15.4	10.3	mg/L
19	Sodium as Na	IS:3025(P -45):1993 RA: 2014	105	47.8	45.1	37.5	mg/L
20	Potassium	IS:3025(P -45):1993 RA: 2014	15.5	2.5	1.8	1.1	mg/L

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification, MPN- Most Probable number

End of Report



Authorised Signatory - Chemical

S. Kokila
S. Kokila
Lab Manager

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ANNEXURE-XII
PHOTOGRAPHS OF BASELINE
MONITORING



Ambient Air Quality Monitoring Photographs



Noise Monitoring Photographs



Water Sampling Photographs

ANNEXURE-XIII
NABET CERTIFICATE



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.

NABET

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.





QCI/NABET/ENV/ACO/23/3062

December 11, 2023

To,

Eco Tech Labs Pvt Ltd.,
48, 2nd main road, Ram Nagar South Extn,
Pallikaranai, Chennai-600100, Tamil Nadu
(**Kind Attention:** Mr. A Dhamodharan)

Sub.: Extension of Validity of Accreditation till March 10, 2024– regarding
Ref.: 1. Certificate no. NABET/EIA/2124/SA 0147
2. Request e-mail dated December 08, 2023

Dear Sir,

This has reference to the Accreditation of your organization under the QCI-NABET EIA Scheme and your request email dated December 08, 2023. It is to inform your good self that the validity of **Eco Tech Labs Pvt Ltd.,** is hereby extended till **March 10, 2024,** or the completion of the accreditation process, whichever is earlier.

2. The above extension is subject to the submission of required documents/information concerning your existing application, timely submission/closure of NC/Obs (if any), and applicable fee (pending if any) during the application process.
3. You are requested not to use this letter after the expiry of the above-stated date.

With best regards.

(A K Jha)
Senior Director
QCI-NABET