January 2024

Executive Summary for Conducting Public Hearing

FOR

"Tmt.V.Ellammal Rough Stone Quarry over a total extent of 1.40.0 Ha"

At

S.F.No. 54 (Part-3) of Soolamalai Village, Bargur Taluk, Krishnagiri District, Tamilnadu State.

Project Proponent:

Tmt.V.Ellammal,
W/o. Murugesan,
D.No.2/58, Melkottai,
Soolamalai Village,
Marudepalli Post,
Bargur Taluk,
Krishnagiri – 635 108.

Project termed under schedule 1(a) Category B_1

Prepared By:

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EXECUTIVE SUMMARY

1. Project Background:

The Proposed project is in Government Poramboke Land having total extent area of 1.40.00 Ha, located at S.F.No. 54 (Part-3) of Soolamalai Village of Bargur Taluk, Krishnagiri District and Tamil Nadu. The category of project is B1, it is a new rough stone quarry in Soolamalai village. The area is situated on hilly terrain sloping towards the Southeast covered with Rough Stone which does not sustain any type of vegetation.

The quarry operation is proposed to carry out with conventional open cast mechanized mining with a 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.

The quarry operation is proposed up to depth for 26 m below ground level (1.0m Topsoil + 25.0m Rough Stone) Above Ground Level. The Total Geological resources are about 3,73,975m^3 of Rough Stone and 14,959m^3 of Topsoil. The Mineable Reserves are about 1,66,475m^3 of Rough Stone and 12,139m^3 of Topsoil. The year wise production/recoverable resources of rough stone and Gravel is about 1,10,255m^3 and 12,108m^3 for 5 years.

The Mining Plan was approved by the Deputy Director, Geology & Mining, Krishnagiri vide letter Rc.No.532/2022 Mines dated 30.06.2022. The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats, notified Bird sanctuaries, wildlife sanctuaries as per Wildlife protection Act 1972, within a radius of 15 km.

2. Nature & Size of the Project

The Rough Stone Quarry over an extent of 1.40.00 Hectares land is located Soolamalai Village of Bargur Taluk, Krishnagiri District.

Mineral intends to quarry : Rough stone.
District : Krishnagiri
Taluk : Bargur
Village : Soolamalai
S. F. Nos. : 54 (Part-3)
Extent : 1.40.00 Hectares

Table 1: Brief Description of the Project

S. No	Particulars	Details
1	Latitude	12° 30' 39.02" N to 12° 30' 41.16" N
2	Longitude	77° 56' 43.17" E to 77° 56' 37.03" E
3	Site Elevation above MSL	590m Above MSL.
4	Topography	Elevated terrain
5	Land use of the site	Government Poramboke land
6	Extent of lease area	1.40.00 Ha
7	Nearest highway	NH-77: Tindivanam to Krishnagiri – 0.90Km – S AH-45: Chennai to Bengaluru Highway – 2.67Km - N
8	Nearest railway station	Rayakkottai Railway Station – 25.35Km - W
9	Nearest airport	Kempagowda International Airport – 95.76Km - NW
10	Nearest town / city	Town - Krishnagiri – 3.75 km - W City - Krishnagiri – 3.75 km – W District - Krishnagiri – 3.75 km - W
11	Rivers / Canal	Cauvery River – 3.00Km – W Then Pennai River – 8.50Km - SW
12	Lake	Marudepalli Lake – 1.91Km – NWW Marachandiram Lake – 3.92Km – NW Avathanapatti Lake – 5.34Km – SW Periya Lake – 5.92Km – NW Sundekuppam Lake – 7.05Km – SW Indira Nagar Lake – 7.21Km – W Krishnagiri (KRP) Dam – 8.02Km - W

13	Hills / valleys	Nil in 15 km radius
14	Archaeologically places	Nil in 15 km radius
15	National parks / Wildlife Sanctuaries	Nil in 15 Km radius
16	Reserved / Protected Forests	Thoragapalli RF – 8.78Km – SE Varatanapalli RF – 8.52Km – NE Bargur RF – 12.61Km - NWW
17	Seismicity	Proposed Lease area come under Seismic zone-II (low risk area)
18	Defense Installations	Nil in 15 Km radius

3. Need for the Project

❖ The mining activities as proposed are the backbone of all construction and infrastructure projects as the raw material for construction is available only from such mining. The Rough stone extracted will be transported to be Stone crusher of district Krishnagiri.

❖ The raw Rough stone as well as the crushed material of stone is in high demand in real estate, construction projects as well as in building construction projects.

❖ Rough stone is quarried for producing crusher aggregates to the nearby building contractors, road contractors and nearby villagers.

❖ After quarrying the entire reserves mined out, the area will be used as water reservoir to have an artificial recharge to the nearby wells.

❖ No damage to the land is caused, no reclamation or back filling is required.

Figure 1: Location Map of the Project Site

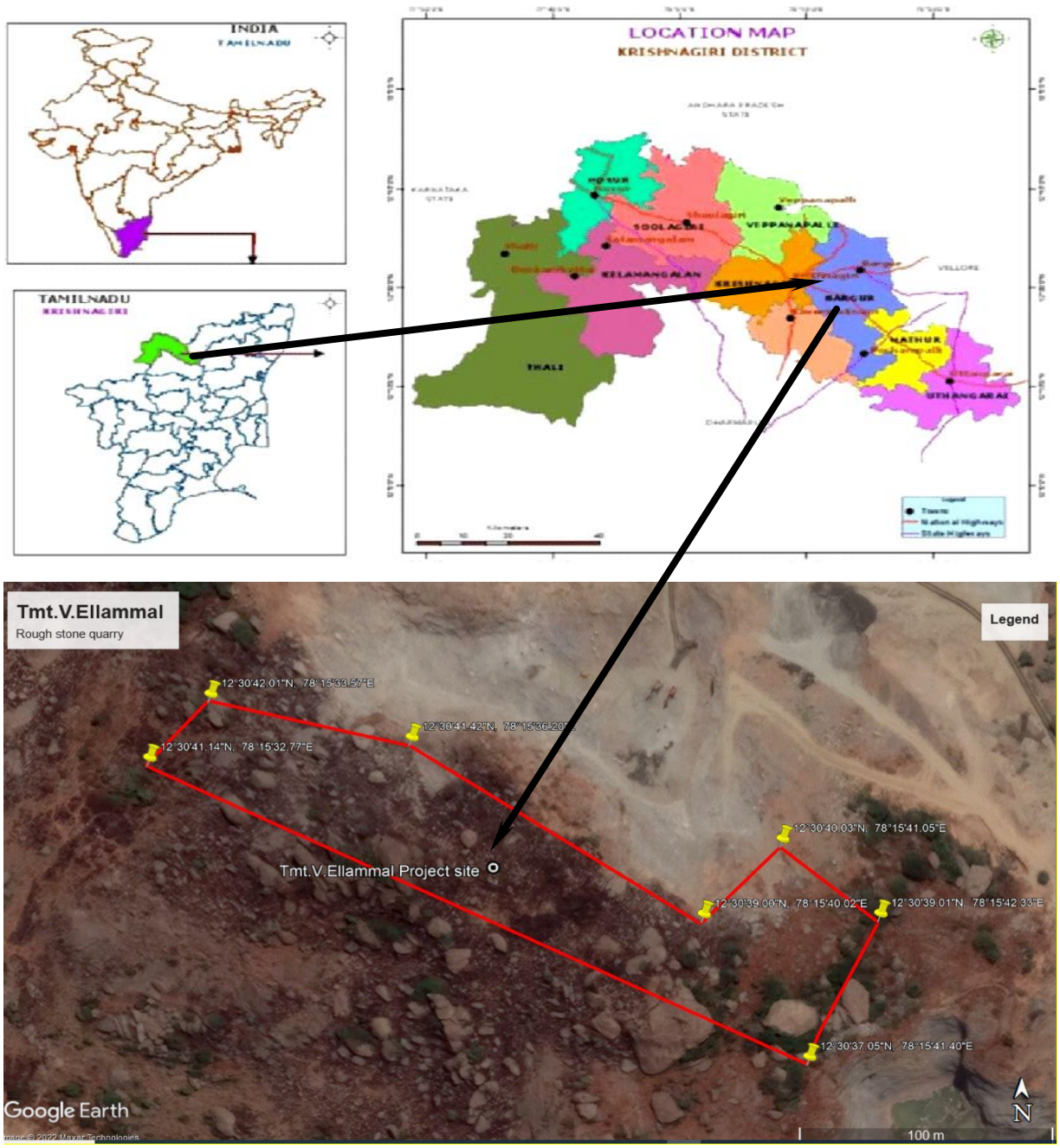
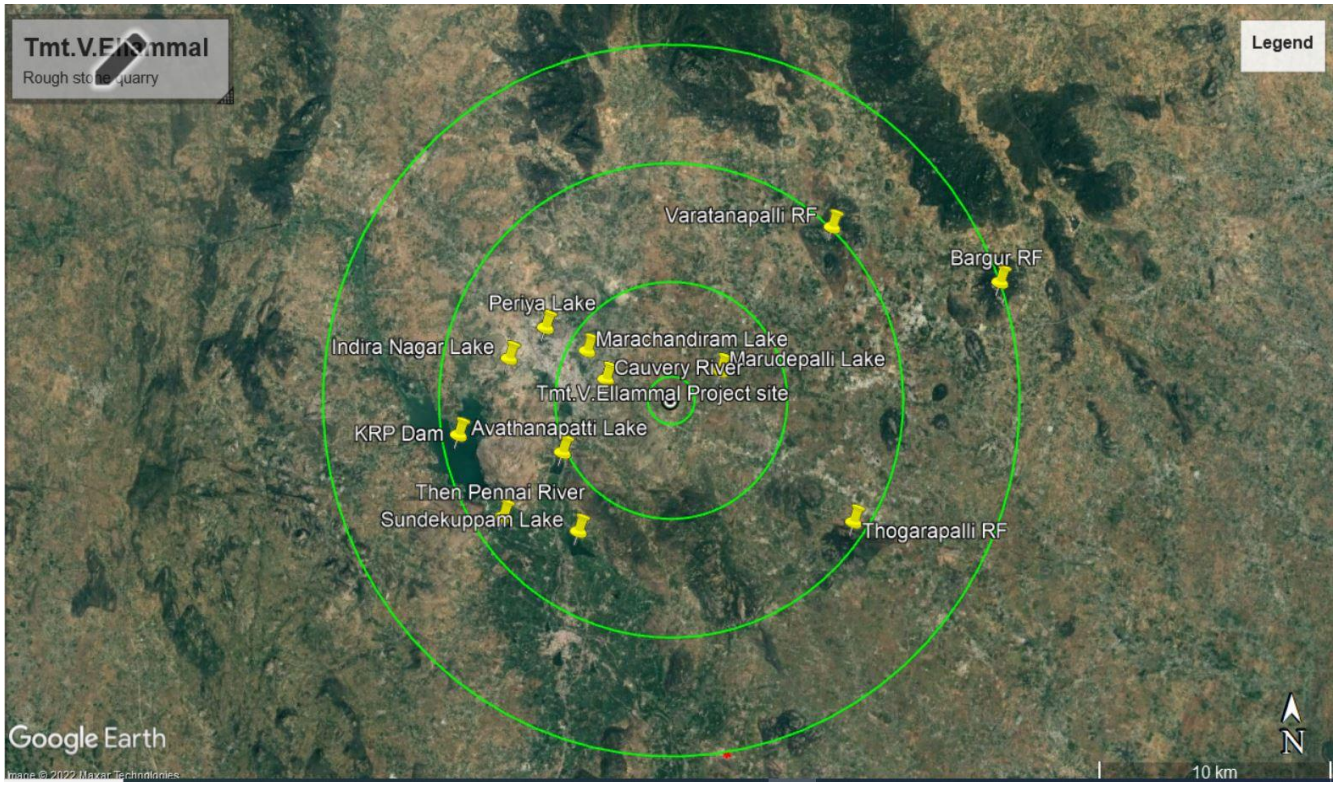


Figure 2: Google Image of the Project Site



4. Charnockite

Charnockite and granitic gneisses are extensively quarried as rough stone which is used as aggregates for construction of building, laying of roads and for preparation of value added products like hollow blocks, pillar stones, M-sand etc. Charnockite occurs as massive bodies, greyish colour, medium to coarse grained, composed quartz, feldspar and orthopyroxene. At places, metamorphic gneissic banding (alternate dark and black colour) in charnockite is noticed. Top portion, it gives gneissic appearance but 1-5m depth below it is typical charnockite of grey colour.

5. Geological resources

The geological resources have been calculated based on the cross-section method.

Table 2. Geological resources

GEOLOGICAL RESERVES							
Section	**Bench**	**Length in (m)**	**Width in (m)**	**Depth in (m)**	**Volume in (m^3)**	**Geological Reserves in m^3 (100%)**	**Topsoil (Gravel) in m^3**
XY-AB	I	100	45	1			4500

	II	100	45	5	22500	22500	
	III	100	45	5	22500	22500	
	IV	100	45	5	22500	22500	
	V	100	45	5	22500	22500	
	VI	100	45	5	22500	22500	
Total=					**112500**	**112500**	**4500**
XY-CD	I	100	44	1			4400
	II	100	44	5	22000	22000	
	III	100	44	5	22000	22000	
	IV	100	44	5	22000	22000	
	V	100	44	5	22000	22000	
	VI	100	44	5	22000	22000	
Total=					**110000**	**110000**	**4400**
XY-EF	I	83	73	1			6059
	II	83	73	5	30295	30295	
	III	83	73	5	30295	30295	
	IV	83	73	5	30295	30295	
	V	83	73	5	30295	30295	
	VI	83	73	5	30295	30295	
Total=					**151475**	**151475**	**6059**
Grand Total=					**373975**	**373975**	**14959**

Table 3. Mineable Reserves

MINABLE RESERVES							
Section	**Bench**	**Length in (m)**	**Width in (m)**	**Depth in (m)**	**Volume in (m^3)**	**Minable Reserves in m^3 (100%)**	**Topsoil (Gravel) in m^3**
XY-AB	I	90	33	1			2970
	II	90	33	5	14850	14850	
	III	85	23	5	9775	9775	
	IV	80	13	5	5200	5200	
Total=					**29825**	**29825**	**2970**

XY-CD	I	173	53	1			9169
	II	173	53	5	45845	45845	
	III	168	43	5	36120	36120	
	IV	163	33	5	26895	26895	
	V	158	23	5	18170	18170	
	VI	148	13	5	9620	9620	
Total=					**136650**	**136650**	**9169**
Grand Total=					**166475**	**166475**	**12139**

Table 4. Year wise Production Plan

YEARSWISE DEVELOPMENT AND PRODUCTION								
Year	**Section**	**Bench**	**Length in (m)**	**Width in (m)**	**Depth in (m)**	**Volume in (m^3)**	**Reserves in m^3 (100%)**	**Topsoil (Gravel) in m^3**
I-Year	XY-AB	I	73	33	1			2409
		II	73	33	5	12045	12045	
		III	73	23	5	8395	8395	
Total=						**20440**	**20440**	**2409**
II-Year	XY-CD	I	46	53	1			2438
		II	46	53	5	12190	12190	
		III	46	43	5	9890	9890	
Total=						**22080**	**22080**	**2438**
III-Year	XY-CD	I	46	53	1			2438
		II	46	53	5	12190	12190	
		III	46	43	5	9890	9890	
Total=						**22080**	**22080**	**2438**
IV-Year	XY-CD	I	46	53	1			2438
		II	46	53	5	12190	12190	
		III	46	43	5	9890	9890	
Total=						**22080**	**22080**	**2438**
V-Year	XY-CD	I	45	53	1			2385
		II	45	53	5	11925	11925	

		III	35	43	5	7525	7525	
		IV	25	33	5	4125	4125	
Total=						***23575***	***23575***	**2385**
Grand Total=						**110255**	**110255**	**12108**

6. Mining

Opencast mining

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

Process Description

- The reserves and resources are arrived based upon the Geological investigation.
- Removal of Topsoil by Excavators and directly Loaded into Tippers.
- Removal of Rough Stone by Excavators by Drilling and Blasting.
- Shallow Drilling With Jackhammer of 25.5mm Dia.
- Minimum Blasting With Class 3 Explosives.
- Loading of Rough Stone By Excavators Into Tippers.

7. Water Requirement

Total water requirement for the mining project is 2.0 KLD. Domestic water will be sourced from nearby Periyapanmudlu Village and other water will be source from nearby road tankers supply.

Table 5. Water Balance

Purpose	Quantity	Source
Drinking Water	1.0 KLD	Water will be supplied through tankers from Periyapanmudlu village which is about 1.56km - S
Green belt	0.5 KLD	Other domestic activities through road tankers supply
Dust suppression	0.5 KLD	From road tankers supply
Total	**2.0 KLD**	

8. Manpower

Total manpower required for the project is approximately 22 persons. Workers will be from nearby villages.

Table 6. Man Power

1.	Skilled	Operator	2 No.
		Mechanic	1 No.
		Blaster/Mat	1 No.
2.	Semi – skilled	Driver	2 Nos
3.	Unskilled	Musdoor / Labors	8 Nos
		Cleaners	3 Nos
		Office Boy	1No
4.	Management & Supervisory staff		4 Nos
	Total		**22 Nos**

9. Solid Waste Management

Table 7 Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	3.96 kg/day	Municipal bin including food waste
2	Inorganic	5.94 kg/day	TNPCB authorized recyclers

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

Table 8 500m Radius Cluster Mine

1) Details of Existing quarries:

S. No.	Name of the Owner	Village & Taluk	Mineral	S.F. No	Extent	GO No. & Date	Lease Period
1.	Tmt.Nathiya, W/o.Murugesan, Soolamalai, Melkottai, Bargur Taluk, Krishnagiri District.	Soolamalai Village, Bargur Taluk.	Rough stone	54 (Part-2)	2.00.0	Rc.No. 175/2018/ Mines dated: 26.11.2018	26.11.2018 to 25.11.2028

2) Details of abandoned/Old Quarries:

S. No.	Name of the lessee	Village	S.F. No	Extent	GO No. & Date	Lease period
1.	Thiru.V.Murugesan, S/o. Veerappan, D.No.25/8, Mekottai, Soolamalai Village, Krishnagiri.	Soolamalai village, Bargur Taluk	54 (Part - 1)	3.00.0	Rc.No. 617/2009/ Mines-1 Dated: 11.01.2010	11.01.2010 to 10.01.2020

3) Details of Proposed Quarries

S. No.	Name of the lessee	Village & Taluk	Mineral	S.F. No	Extent	GO No. & Date	Lease period
1.	Tmt.V.Ellammal, W/o. Murugesan, D.No.2/58, Melkottai, Soolamalai, Marudhandapalli, Bargur, Krishnagiri.	Soolamalai village, Bargur Taluk	Rough stone	54 (Part-3)	1.40.0	Rc.No. 532/2022/ Mines Dated:06.05. 2022	Instant proposal

The Total extent of the Existing / Lease expired / Proposed quarries is 6.40.00 Ha.

10. Land Requirement

The total extent area of the project is 1.40.00 Ha, Government Poramboke land in Soolamalai Village of Bargur Taluk, Krishnagiri District.

Table 9 Land Use Breakup

S. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Quarrying Pit	Nil	0.72.0
2.	Infrastructure	Nil	0.01.0
3.	Roads	Nil	0.01.0

4.	Green Belt	Nil	0.66.0
5.	Unutilized Area	1.40.0	Nil
	Total	**1.40.0**	**1.40.0**

11. Human Settlement

There are no habitations within 300m radius. There are villages located in this area within a 5km radius of the quarry.

Table 10 Habitation

SL. NO.	DIRECTION	VILLAGE	POPULATION	DISTANCE
1	N	Kammampalli	5759	1.77 Km
2	S	Periyapanmudlu	450	1.56 Km
3	E	Orappam	6796	2.12 Km
4	W	Vetmilli	260	1.77 km

12. Power Requirement

The 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.

13. Scope of the Baseline Study

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

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

13.1 Micro – Meteorology

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

i) Average Minimum Temperature : 17 °C

ii) Average Maximum Temperature : 39 °C

iii) Average Annual Rainfall of the area: 968 mm

13.2 Air Environment

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

The baseline levels of PM_{10} (58-33 µg/m³), $PM_{2.5}$ (30-13 µg/m³), SO_2 (15-4 µg/m³), NO_2 (29-8 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from January 2023 to March 2023.

13.3 Noise Environment

The maximum Day noise and Night noise were found to be 59 dB(A) and 49 dB(A) respectively in in RIMS vidyashram school. The minimum Day Noise and Night noise were 39 dB(A) and 34 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 6.98 – 8.17.
- TDS value varied from 348 mg/l to 1790 mg/l
- Hardness varied from 192 to 572 mg/l
- Chloride varied from 19 to 437 mg/l

13.5 Land Environment

The analysis results show that the majority of soil in the project and surrounding area is slightly alkaline in nature and pH value ranges from 6.68 to 7.65 with organic matter 0.26 to 1.51 %. The concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

13.6 Biological Environment

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

14. Rehabilitation/ Resettlement

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

15. Greenbelt Development

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. The Green belt has been recommended as one of the major components of the Environmental Management Plan, which will improve ecology, environment and quality of the surrounding area.
3. Local trees like Neem, Pungam, Naval etc will be planted along the lease boundary and avenues as well as over non-active dumps at a rate of 140 trees per annum with interval 5m.
4. The rate of survival expected to be 80% in this area

Table.11 Plantation/ Afforestation Program

Name of species proposed	Survival	No of species
Neem, Pungam, Poovarasu, Naval, Mantharai, Arasa Maram, Magizham, Vilvam, vaagai, Marudha maram, Thandri, Poovarasu, Manjadi, Usil, Aathi, Panai, Uzha, Illuppai, Eachai, Vanni Maram	80%	700
Total		700

16. Anticipated Environmental Impacts

16.1 Air Environment and Mitigation Measures

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

4. To control the emissions regular preventive maintenance of equipments will be carried out.

16.2 Noise Environment and Mitigation Measures

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

17. Responsibilities for Environmental Management Cell (EMC)

The responsibilities of the EMC include the following:

i. Environmental Monitoring of the surrounding area
ii. Developing the green belt/Plantation
iii. Ensuring minimal use of water
iv. Proper implementation of pollution control measures

18. Environmental Monitoring Program

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

19. Project Cost

The total project cost is **Rs 3,02,00,000/-** 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
1	Fixed Asset Cost	Rs.2,72,00,000/-
2	Operational and Fencing Cost	Rs. 30,00,000/-
	Total	**Rs. 3,02,00,000/-**

EMP cost: Rs.60,87,456/-

20. Corporate Environmental Responsibility

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

Table 13 CER Cost

S.No.	CER Activity	CER value (Rs)
1.	Government High School, Shoolamalai – Provision of Smart classrooms, Playground to improve sportsmanship of students, To build a footpath, Environmental books for library (in Tamil language), Greenbelt facilities and Basic amenities such as safe drinking water, Hygienic Toilets facilities and maintenance of toilet upto lease period and furniture.	5,00,000
Total		**5,00,000**

21. Benefits of the Project

- There is a positive impact on socioeconomics 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 the 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 nearby vicinity.

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