January 2024

Executive Summary for Conducting Public Hearing

FOR

"Thiru.K.P.Anand Rough Stone Quarry over a total extent of 4.50.0 Ha"

At

S.F.No. 637 (Part-2) of Thuppuganapalli Village, Shoolagiri Taluk, Krishnagiri District, Tamilnadu State

Project Proponent:

Thiru.K.P.Anand,
S/o. V.P. Perumal,
No.2/10, Velampatty Post,
Pennagaram Taluk,
Dharmapuri District 636 809

Project termed under schedule 1(a) Category B_1

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EXECUTIVE SUMMARY

1. Project Background:

The Proposed project is in Government Poramboke Land having total extent area of 4.50.0 Ha, located at S.F.No. 637 (Part-II) of Thuppuganapalli Village of Shoolagiri Taluk, Krishnagiri District and Tamil Nadu. The category of project is B1, it is an existing rough stone quarry in Thuppuganapalli 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 49 m Surface Ground Level Above. The Total Geological resources are about 14,17,155m^3 of Rough Stone and 26,980m^3 of Topsoil. The Mineable Reserves are about 8,20,955m^3 of Rough Stone and 22,440m^3 of Topsoil. The year wise production/recoverable resources of rough stone and Gravel is about 6,03,365m^3 and 22,440m^3 for the period of 5 years.

The Mining Plan was approved by the Deputy Director, Geology & Mining, Krishnagiri vide letter Rc.No.210/2018 Mines dated 07.05.2018. 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 4.50.0 Hectares land is located Thuppuganapalli Village of Shoolagiri Taluk, Krishnagiri District.

Mineral intends to quarry : Rough stone.

District : Krishnagiri

Taluk : Shoolagiri

Village : Thuppuganapalli

S. F. Nos. : 637 (Part-II)

Extent : 4.50.0 Hectares

Table 1: Brief Description of the Project

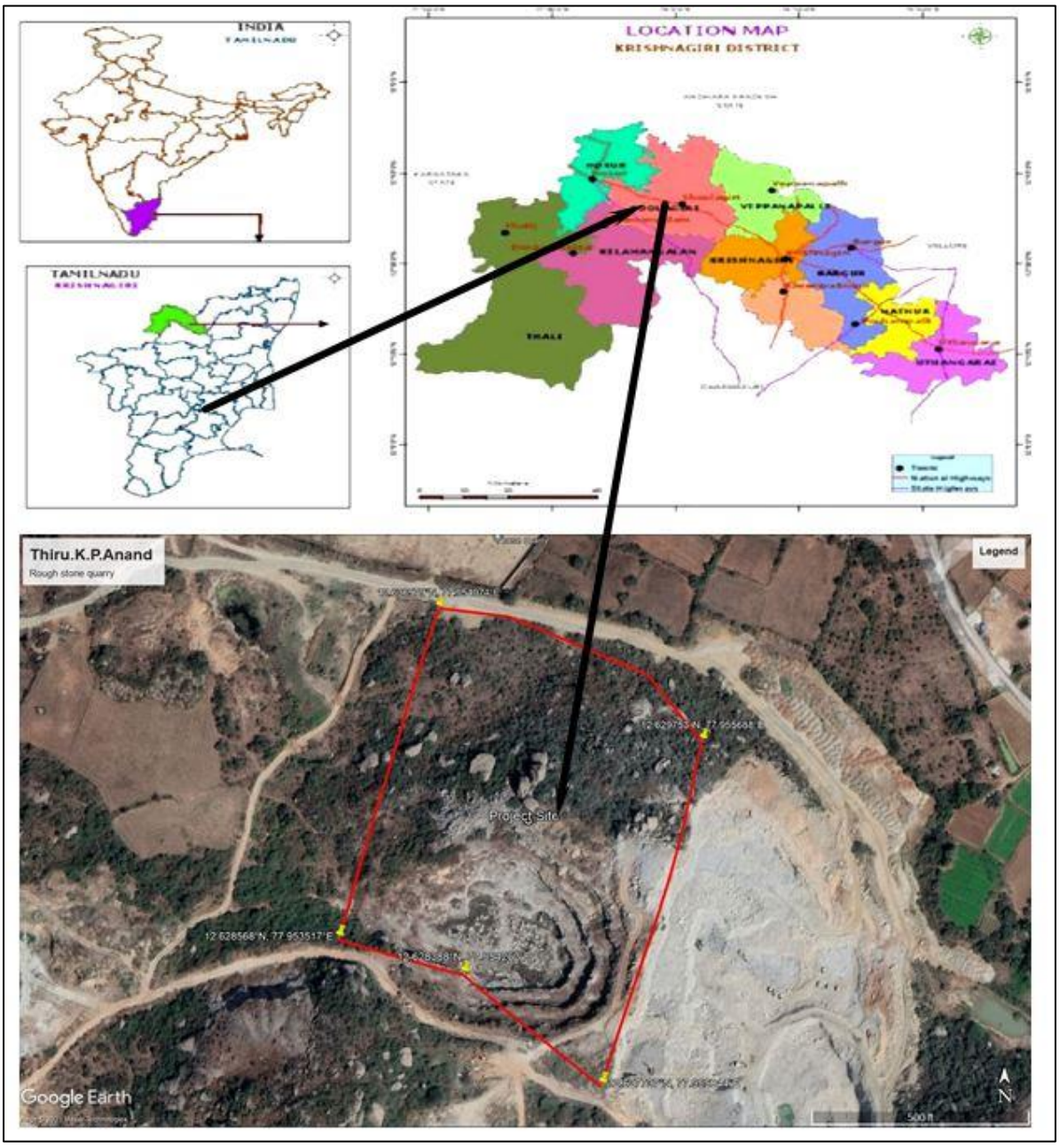
S. No	Particulars	Details
1	Latitude	12° 37' 39.82" N To 12° 37' 50.19" N
2	Longitude	77° 57' 12.63" E To 77° 57' 20.49" E
3	Site Elevation above MSL	Maximum 813m and Minimum 768m above MSL.
4	Topography	Hilly terrain
5	Land use of the site	Government Poramboke land
6	Extent of lease area	4.50.0 Ha
7	Nearest highway	AH-45: Chennai to Bengaluru Highway – 5.10 Km – NNE. SH-85: Kelamangalam Road – 10.78 Km - W
8	Nearest railway station	Kelamangalam Railway Station – 9.81Km - W
9	Nearest airport	Kempagowda International Airport – 68.49Km - NNW
10	Nearest town / city	Town - Shoolagiri – 6.78 Km - NE City - Krishnagiri – 28.71 Km - NE District - Krishnagiri – 28.71 Km - SE
11	Rivers / Canal	• Ponnaniyar River – 0.58Km - NE
12	Lake	➢ Chappadi Lake – 5.20Km – NE ➢ Konerapalli Lake - 5.48Km – N ➢ Kamandoddi Lake – 5.74Km – N ➢ Kamandoddi New Lake – 6.67 Km - NW ➢ Kamandoddi Old Lake – 5.63Km – NW ➢ Nagamangalam Lake – 7.23Km – S ➢ Anachandiram Lake – 7.67Km – NE ➢ Bukkasagaram Lake – 9.96 Km – N ➢ Doripalli Lake – 8.62 Km – N ➢ Thummanapalli Lake – 8.73 Km – NNE ➢ Gangapuram Lake – 8.06 Km – NW ➢ A. Kothur Lake – 7.21 Km – NNW

		➢ Subbagiri Lake – 6.67 Km – N ➢ Thiyagarsanapalli Lake – 5.73 Km – NE ➢ Obeapalayam Lake – 4.60 Km – W ➢ Addakurukki Lake – 3.89 Km – N ➢ Beerjapalli Lake – 4.03 Km - NW
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	➢ Sanamavu RF – 6.15 Km – W ➢ Perandapalli RF – 5.87Km – NW ➢ Settipalli RF – 6.95 Km - NE ➢ Udedurgam RF – 11.45 Km – S ➢ Denkanikaottai RF – 14.33 Km - SW
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



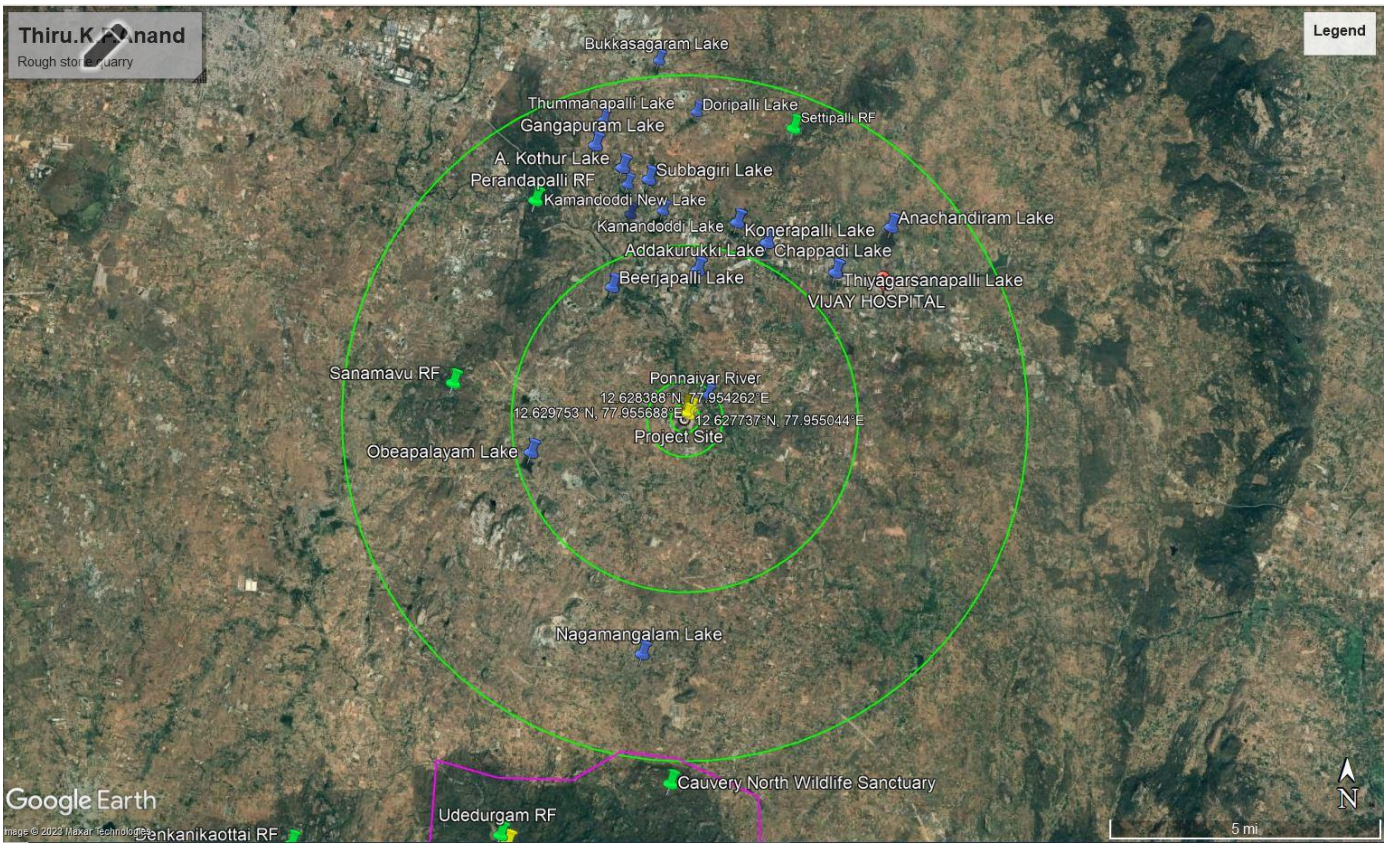


Figure 2: Google Image of the Project Site

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 color.

5. Geological resources

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

Table 2. Geological resources

GEOLOGICAL RESERVES							
Section	**Bench**	**L (m)**	**W (m)**	**D (m)**	**Volume in (Cu.m.)**	**Recoverable Reserve in Cbm (100%)**	**Topsoil**
XY-AB	I	190	142	1			26980
	II	61	40	5	12200	12200	
	III	86	48	5	20640	20640	
	IV	107	55	5	29425	29425	
	V	130	63	5	40950	40950	
	VI	157	71	5	55735	55735	
	VII	179	79	5	70705	70705	
	VIII	190	189	5	179550	179550	
	IX	190	197	5	187150	187150	
	X	190	204	5	193800	193800	
	XI	190	212	5	201400	201400	
	XII	190	220	5	209000	209000	
	XIII	190	228	5	216600	216600	
Total=					**1417155**	**1417155**	**26980**

Table 3. Mineable Reserves

MINEABLE RESERVES							
Section	**Bench**	**L (m)**	**W (m)**	**D (m)**	**Volume in (Cu.m.)**	**Recoverable Reserve in Cbm (100%)**	**Topsoil**
XY-AB	I	170	132	1			22440
	II	61	40	5	12200	12200	
	III	82	48	5	19680	19680	
	IV	91	55	5	25025	25025	
	V	109	63	5	34335	34335	
	VI	131	71	5	46505	46505	
	VII	148	79	5	58460	58460	
	VIII	138	178	5	122820	122820	
	IX	128	181	5	115840	115840	
	X	118	184	5	108560	108560	

	XI	108	186	5	100440	100440	
	XII	98	189	5	92610	92610	
	XIII	88	192	5	84480	84480	
Total=					**820955**	**820955**	**22440**

Table 4. Year wise Production Plan

YEARWISE DEVELOPMENT AND PRODUCTION								
Year	**Section**	**Bench**	**L (m)**	**W (m)**	**D (m)**	**Volume in (Cu.m.)**	**Recoverable Reserve in Cbm (100%)**	**Topsoil**
I-Year	XY-AB	I	170	132	1			22440
		II	61	40	5	12200	12200	
		III	82	48	5	19680	19680	
		IV	91	55	5	25025	25025	
		V	109	63	5	34335	34335	
II-Year		VI	131	71	5	46505	46505	
III-Year		VII	148	79	5	58460	58460	
IV-Year		VIII	138	178	5	122820	122820	
		IX	128	181	5	115840	115840	
V-Year		X	118	184	5	108560	108560	
		XI	108	185	3	59940	59940	
Total=						**603365**	**603365**	**22440**

6. Mining

Opencast mining

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, 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 Ayarnapalli Village and other water will be source from nearby road tankers supply.

Table 5. Water Balance

Purpose	Quantity	Source
Drinking Water	1.0 KLD	Packaged Drinking water vendors available in Thuppuganapalli which is about 0.54 km-N from the project site.
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 18 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	5 Nos
		Cleaners	3 Nos
		Office Boy	1 No
4.	Management & Supervisory staff		3 Nos
	Total		**18 Nos**

9. Solid Waste Management

Table 7 Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	3.24 kg/day	Municipal bin including food waste
2	Inorganic	4.86 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 lessee	ROC. No. dated	Village	S.F No	Extent in Het	Lease period
1.	M/s. AVS Building Solutions India Private Limited, Plot No.298, Sipcot Staff Housing Colony, Mookandapalli, Hosur 635 126	Rc.No.211 /2018/ Mines dated: 25.01.2018	Thuppuganapalli village, Shoolagiri Taluk	637 (Part - 3)	4.50.0	25.01.2019 to 24.01.2029
2.	S.Sundraiah, S/o Subramaniyam (Late), 14/5 Amman Nagar, Opp to Government ITI, HCF (Post), Hosur.	Rc. No. 98/2016/ Mines dated: 08.08.2016	Thuppuganapalli village, Shoolagiri Taluk	420 (Part - 2)	3.00.0	22.08.2016 to 21.08.2026

2) Details of abandoned/Old Quarries Proposed Quarries

S. No.	Name of the lessee	ROC. No. dated	Village & Taluk	S.F. No	Extent	Lease period
1.	Thiru.R.Rathinam, Manangkundram, Alagu Goundanapatti Post, Buthar Natham, Trichy.	Rc.No.91/ 2008/ Mines dated: 29.03.2018	Thuppuganapalli village, Shoolagiri Taluk	420 (Part-5)	5.00.0	03.07.2008 to 02.07.2018

3) Details of other Proposed/ applied Quarries

S. No.	Name of the lessee	ROC. No. dated	Village & Taluk	S.F. No	Extent	Lease period
1.	Thiru.Anand, V.P.Perumal, No.2/10, Velampatty Post, Pennagaram Taluk, Dharmapuri District 636809	Rc.No.210/ 2018/ Mines dated: 09.03.2018	Thuppuganapalli , Shoolagiri Taluk	637 (Part-2)	4.50.0	TCA E.C. Obtained Lease not yet granted
2.	Thiru.Anand, V.P.Perumal, No.2/10, Velampatty Post, Pennagaram Taluk, Dharmapuri District 636809	Rc.No.209/ 2018/ Mines dated: 09.03.2018	Thuppuganapalli , Shoolagiri Taluk	637 (Part-1)	4.00.0	TCA E.C. Obtained Lease not yet granted
3.	M/s. Sri Vari Infrastructure, Prop.Thiru.Adal Arasu S/o,Ramathilagan, D.No.2/389, Poosaripatti Village and Sogathur Post, A.Reddyhalli, Dharmapuri.	Rc.No.231/ 2019/ Mines dated: 13.06.2019	Thuppuganapalli and Agaram Agraharam Village, Shoolagiri Taluk	637 (Part) & 4 (Part)	2.95.0	Precise area given
4.	M/s.AVS Building Solutions India Private Limited, Plot No.298, Sipcot Staff Housing Colony, Mookandapalli, Hosur 635 126	Rc.No.230/ 2019/ Mines dated: 13.06.2019	Thuppuganapalli , Shoolagiri Taluk	420 (Part-5)	4.90.0	Precise area given

The Total extent of the Existing / Lease expired / Proposed quarries is 23.35.0 Ha

10. Land Requirement

The total extent area of the project is 4.50.0 Ha, Government Poramboke land in Thuppuganapalli Village of Shoolagiri 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	1.17.9	4.30.9
2.	Infrastructure	Nil	0.01.0
3.	Roads	0.01.0	0.02.0
4.	Green Belt	Nil	0.16.1
5.	Unutilized Area	3.31.1	Nil
	Total	**4.50.0**	**4.50.0**

11. Human Settlement

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

Table 10 Habitation

SL. NO.	DIRECTION	VILLAGE	POPULATION	DISTANCE
1	North	Ayarnapalli	4986	0.54 Km
2	South	Devasanapalli	1450	1.32 Km
3	East	Samanapalli	3198	2.29 Km
4	West	Thuppuganapalli	4281	1.38 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 scenarios 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 : 18 $^{\circ}$C

ii) Average Maximum Temperature : 3 8 $^{\circ}$C

iii) Average Annual Rainfall of the area: 800 mm to 900 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 10 km. radius, air quality survey has been conducted at 7 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} (69-39.8 µg/m³), $PM_{2.5}$ (26-16 µg/m³), SO_2 (9-5 µg/m³), NO_2 (37-9.3 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from October 2023 to December 2023.

13.3 Noise Environment

The maximum Day noise and Night noise were found to be 59 dB(A) and 47 dB(A) respectively in in Jama Masjid, Mosque, Thirumalaigowni kotta. The minimum Day Noise and Night noise were 39 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 7.25 – 7.92.
- TDS value varied from 198 mg/l to 962 mg/l
- Hardness varied from 164 to 557 mg/l
- Chloride varied from 20.5 to 243 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 6.87 to 7.87 with organic matter 0.31 to 1.04 %. 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 400 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%	2250
Total		**2250**

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.82,60,000/-** 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.62,60,000/-
2	Operational and Fencing Cost	Rs. 20,00,000/-
	Total	**Rs. 82,60,000/-**

EMP Cost: Rs.83,72,336/- (Rupees Eighty three lakhs seventy two thousand and three hundred thirty six only) for the period of five years.

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 Higher Secondary School, Uddanapalli, Krishnagiri – 635119, Provision of To construct Auditorium or Canteen for students And basic amenities such as Environmental awareness books (Tamil) in Library for students, Green Belt development, Hygienic Toilet and maintenance of toilet upto lease period. & Conservation activity to Cauvery North wildlife sanctuary	10,00,000/-
Total		**10,00,000/-**

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.