

July

2025

Executive Summary for Conducting Public Hearing

FOR

**“Thiru.C.Palanisamy Rough Stone Quarry
over a total extent of 2.80.33 Ha”**

At

**S.F.No. 94 (Part-1) in Sithannavasal Village, Illuppur
Taluk, Pudukottai District, Tamil Nadu State**

Project Proponent:

**Thiru.C.Palanisamy,
S/o.Chinnakannu,
No.129, Edatheru,
Sithannavasal, Illuppur Taluk,
Pudukkottai District – 622 101.**

Project termed under schedule 1(a) Category B₁

Prepared By:

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NABET Accredited EIA Consultant

**48, 2nd Main Road, Ram Nagar South Extension,
Pallikaranai, Chennai - 600100**

EXECUTIVE SUMMARY

1. Project Background:

The New Rough Stone Quarry over an extent of 2.80.33 Ha, Government Poramboke land S.F. No: 94 (Part-1) of Sithannavasal Village, Illuppur Taluk, Pudukkottai District. The category of the project is B1 (cluster), the lease area exhibits plain terrain covered by massive charnockite rough stone formation.

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

The quarry operation is proposed up to depth for 47.0m (Topsoil 2.0m & Rough stone 40.0m). The Total Geological reserve is about 116m³ of Topsoil and 6,85,630m³ of Rough Stone. The Mineable Reserves are 96m³ of Topsoil and 2,77,305m³ of Rough stone. Production schedule is proposed an average production of 96m³ of Topsoil and 2,77,305m³ of Rough stone for (Sixty months) Five years only.

The Mining Plan was approved by the Assistant Director, Geology & Mining, Pudukkottai vide letter Rc.No.1062/2023 (G&M) dated 14.03.2024. There is no CRZ zone, Western Ghats, notified Bird sanctuaries, wild life sanctuaries as per Wild life protection Act 1972, within the radius of 15Km.

2. Nature & Size of the Project

The Rough Stone Quarry over an extent of 2.80.33 Hectares land is located Sithannavasal Village, Illuppur Taluk, Pudukkottai District.

Mineral intends to quarry	: Rough stone.
District	: Pudukkottai
Taluk	: Illuppur
Village	: Sithannavasal
S. F. Nos.	: 94 (Part-1)
Extent	: 2.80.33 Hectares

Table 1: Brief Description of the Project

S. No	Particulars	Details
1	Latitude	10°27'49.9231"N to 10°27'43.2157"N
2	Longitude	78°44'07.9289"E to 78°44'01.1168"E
3	Site Elevation above MSL	135.0m above MSL.
4	Topography	Plain terrain
5	Land use of the site	Government Poramboke land
6	Extent of lease area	2.80.33 Ha
7	Nearest highway	NH 336 – Trichy to Pudukkottai Road – 4.97 Km - E SH 71 – Manapparai to Pudukkottai Road – 2.70 Km - SW
8	Nearest railway station	Vellanur Railway Station – 6.87 km - E
9	Nearest airport	Tiruchirapalli International Airport – 33.59 km - N
10	Nearest town / city	Town - Pudukkottai – 10.20 km - SE City - Pudukkottai – 10.20 km - SE District - Pudukkottai – 10.20 km - SE
11	Rivers / Canal	Vellar River – 10.04 Km - SW
12	Lake/Pond	❖ Vellar River – 10.04 Km - SW ❖ Periya Kulam – 0.43 Km – W ❖ Sithannavalal boating pond – 2.04 Km – SW ❖ Temple Pond – 2.16 Km – SE ❖ Panangudi Periya kulam – 2.83 Km - SW ❖ Periya vellala kulam – 2.91 Km – E ❖ Alankulam – 3.49 Km – E ❖ Mel kulam – 3.65 Km - E ❖ Pai Kulam – 3.71 Km – E ❖ Mela Kulam – 3.72 Km - S ❖ Annavalal Periyakulam Lake – 3.75 Km – W ❖ Melur oorani – 4.05 Km – E ❖ Kalamuthi Kulam – 4.24 Km – E ❖ Kila Kulam – 4.62 Km – SE ❖ Perunjunai Lake – 4.92 Km - SE ❖ Thottiya kulam – 5.10 Km – E

		<ul style="list-style-type: none"> ❖ Kili Kulam – 5.39 Km – E ❖ Kundu Pallam Lake – 5.75 Km - S ❖ Vellanur Local Pond – 5.91 Km – E ❖ Thiruvengainathar Lake – 6.54 Km – SE ❖ Kavinadu Kanmai – 9.96 Km – SE ❖ Ponnappan Urani – 11.39 Km - SE ❖ Adappan kulam – 11.54 Km - SE ❖ Keerankudi Kanmai – 11.77 Km – SSW ❖ Akkachiyar Kulam – 12.08 Km - SE ❖ Old Keerankudi Kanmai – 12.86 Km – SSW ❖ Melathemuthupatti Pond – 13.62 Km – SE ❖ Kotti Kanmai – 14.42 Km – S
13	Dams	<ul style="list-style-type: none"> ❖ Senthamangalam Dam – 11.18 Km – S ❖ Holdsworth Anaicut – 18.57 Km - SE
14	Hills / valleys	<ul style="list-style-type: none"> ❖ Ancient Jain Cave Hills – 1.59 Km - SW ❖ Ural Hills – 2.57 Km – NE
15	Archaeologically places	<ul style="list-style-type: none"> ❖ Rock cut Jain Temple – 1.32 Km – SW ❖ Natural Cavern with stone beds – Eladipattam – 1.81 Km – SW ❖ Jain Image, Annavasal – 4.23 Km – W ❖ Siva Temple, Ariyur – 4.50 Km - S ❖ Kailasanatha temple, Agastisvara temple – Vellanur – 6.38 Km – E ❖ Devar Malai Rock cut cave Temple – 11.82 Km - S
16	National parks / Wildlife Sanctuaries	<ul style="list-style-type: none"> ❖ Vettangudi Birds Sanctuary – 45.88 Km - SW
17	Reserved / Protected Forests	<ul style="list-style-type: none"> ❖ Narthamalai RF – 4.30 Km – NE ❖ Kudumiyanmalai RF – 6.29 Km – SW ❖ Perungudipatti RF – 7.30 Km - NE ❖ Permabur RF – 7.36 Km - SW ❖ Aladukkadu RF – 8.89 Km – NE ❖ Chinna valakkad RF – 10.62 Km – SE ❖ Vellar RF – 12.26 Km – S

		❖ Mallangudi RF – 13.26 Km - S
18	Seismicity	Proposed Lease area come under Seismic zone-II (Moderate risk area)

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 Pudukkottai.
- ❖ 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 artificial recharge to the nearby wells.
- ❖ No damage to the land is caused, no reclamation or backfilling is required.

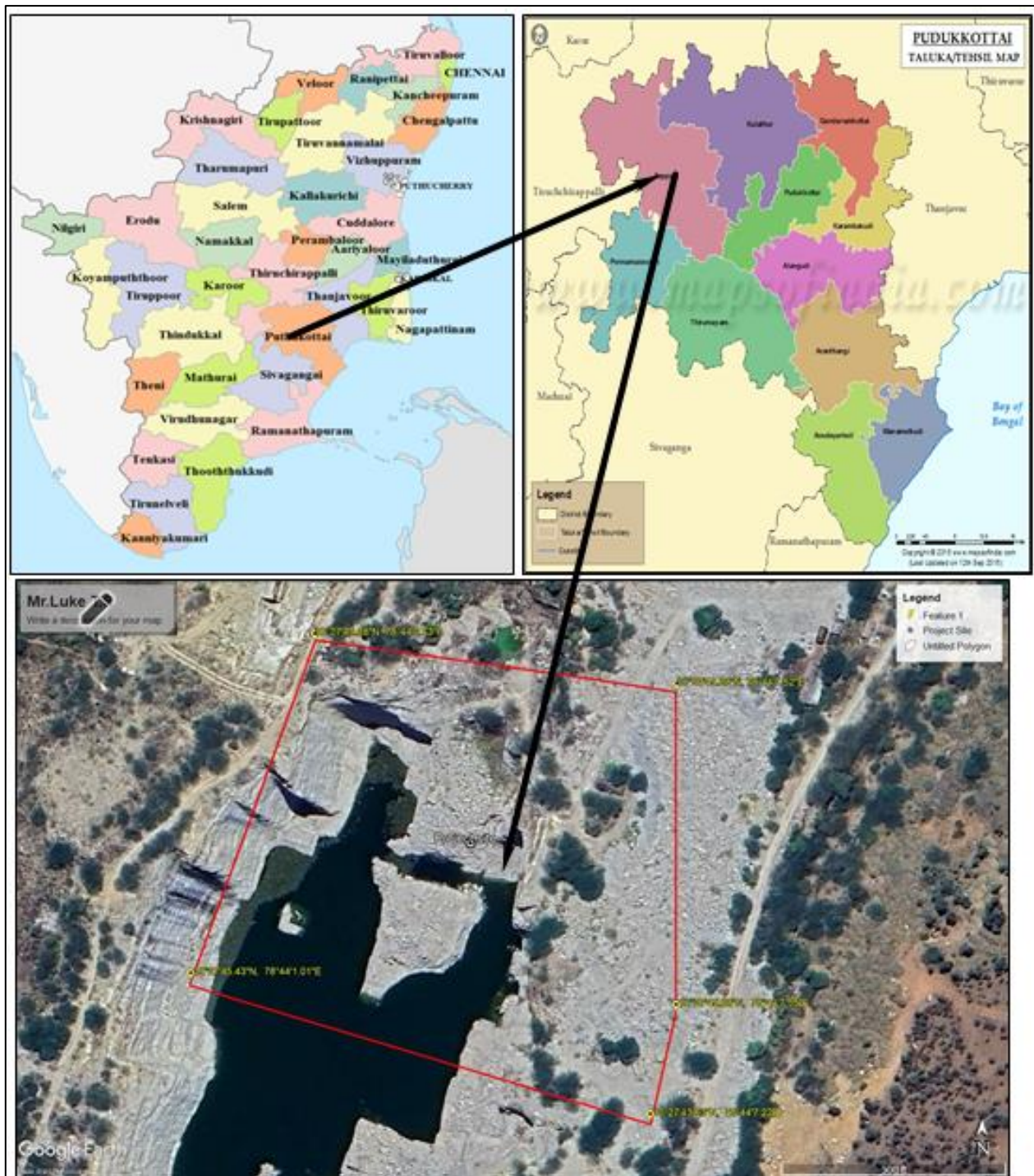


Figure 1: Location Map of the Project Site



Figure 2: Google Image of the Project Site

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 the areas of Kunnandavarkoil, Thirumayam, Kulathur, 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

Top Soil :

The Thickness of Topsoil in this area is 2.0m and the total volume of Topsoil will be 116m³.

Rough Stone :

The Available Geological Reserve is estimated as 685630m³ respectively at the rate of 100% recovery upto the permissible depth. Topsoil is calculated up to a depth of 2m and Rough Stone at a depth of 45m. **Total Depth - 47m.**

Table 2. Geological resources

GEOLOGICAL RESOURCES							
Section	Bench	L (m)	W (m)	D (m)	Volume in (Cu.m.)	Geological Reserve in Cu.m(100%)	Topsoil in Cu.m.
XY-AB	I	58	1	2			116
	II	77	4	5	1540	1540	
	III	77	13	5	5005	5005	
	IV	77	13	5	5005	5005	
	V	138	112	5	77280	77280	
	VI	138	112	5	77280	77280	
	VII	191	112	5	106960	106960	
	VIII	191	120	5	114600	114600	
	IX	191	156	5	148980	148980	
	X	191	156	5	148980	148980	
Total					685630	685630	116

Table 2.1 Mineable Resources

MINEABLE RESERVES							
Section	Bench	L (m)	W (m)	D (m)	Volume in (Cu.m.)	Mineable Reserve in Cu.m (100%)	Topsoil in Cu.m.
XY-AB	I	48	1	2			96
	II	65	1	5	325	325	
	III	60	1	5	300	300	
	IV	55	1	5	275	275	
	V	99	90	5	44550	44550	
	VI	94	85	5	39950	39950	
	VII	131	80	5	52400	52400	
	VIII	121	83	5	50215	50215	
	IX	111	89	5	49395	49395	
	X	101	79	5	39895	39895	
Total=					277305	277305	96

Table 3. Year wise Production Plan

YEARWISE DEVELOPMENT AND PRODUCTION								
Year	Section	Bench	L (m)	W (m)	D (m)	Volume in (m³)	Recoverable Reserve in m³ (100%)	Topsoil in m³
I-Year	XY-AB	I	48	1	2			96
		II	65	1	5	325	325	
		III	60	1	5	300	300	
		IV	55	1	5	275	275	
		V	99	90	5	44550	44550	
TOTAL						45450	45450	96
II-Year	XY-AB	VI	94	85	5	39950	39950	
TOTAL						39950	39950	
III-Year	XY-AB	VII	131	80	5	52400	52400	
TOTAL						52400	52400	
IV-Year	XY-AB	VIII	121	83	5	50215	50215	
TOTAL						50215	50215	
V-Year	XY-AB	IX	111	89	5	49395	49395	
		X	101	79	5	39895	39895	
TOTAL						89290	89290	
GRAND TOTAL						277305	277305	96

6. Mining

Opencast Mining

The quarry operation is proposed to be carried out with conventional open cast mechanized mining with 5.0meter 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 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 1.675 KLD. Domestic water will be sourced from nearby Sithannaval Village and other water will be source from nearby road tankers supply.

Table 4. Water Balance

Purpose	Quantity	Source
Drinking Water	0.675 KLD	Packaged Drinking water vendors available in Sithannaval village which is about 1.04 km W 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	1.675 KLD	

8. Manpower

Total manpower required for the project is approximately 15 persons. The workers will be from nearby villages.

Table 5. Man Power

1.	Skilled	Operators	2 Nos
		Mechanic	1 No
		Blaster/Mat	1 No
2.	Semi – skilled	Drivers	2 Nos
3.	Unskilled	Musdoor/Labours	4 Nos
		Cleaners	2 Nos
		Office Boy	1 No
4.	Management & Supervisory staff		2 Nos
Total			15 Nos

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

9. Solid Waste Management

Table 6 Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	4.05 kg/day	Municipal bin including food waste
2	Inorganic	2.70 kg/day	TNPCB authorized recyclers

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

Table 7 500m Radius Cluster Mine

1) Existing other quarries:					
S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
1.	Tmt.D.Adaikalamary W/o. Durai Diviyanathan, 205, Housing Unit, Rajagopalapuram, Pudukkottai – 622003	Kulathur Irumbali	80/1 76/2	1.38.0	01.2015 to 31.02.2035
2.	Thiru.R.Sathiyamoorthy, S/o.Ramasamy, Ellaiyapatti, Mathiyanallur village, Illuppur Taluk, Pudukkottai Dt	Illuppur Sithannavasal	95/22 & etc.,	0.94.5	31.07.2023 to 30.07.2028
Total				2.32.5	
2) Proposed Area:					
S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent	
1.	Thiru.C.Palanisamy, S/o.Chinnakannu,	Illuppur Sithannavasal	94 (Part-1)	2.80.33	

	No.129, Edatheru, Sithannavasal, Illuppur Taluk, Pudukkottai Dt			
2.	Thiru.K.Muthukumar, S/o.Karuppaiah, No.94, North street, Sithannavasal, Illuppur Taluk, Pudukkottai Dt	Illuppur Sithannavasal	94 (Part-2)	2.50.0
3	Thiru.Bennet Antony Raj, S/o.Durai Dhiviyathan, No.205, Housing Unit, Periyar Nagar, Rajagopalapuram, Pudukkottai District.	Irumbali, Kulathur	75/2 (P) (1.02.5) & 75/4 (P) (1.05.5)	2.08.0
4	Tmt.K.Indirani W/o.Karuppaiah, Door No.45, Thayinipatti, Vilathupatti Post, Illuppur Tk, Pudukkottai Dt.	Illuppur Sithannavasal	95/12, 95/16, 95/18, 95/20 (P) & 95/21 (P)	1.44.0
Total				8.82.33

3) Lease Expired

S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
1.	Thiru.C.Ponnusamy, S/o.Chinnaiya, Sithannavasal post, Illuppur Taluk, Pudukkottai District.	Illuppur Sithannavasal	210/12B etc.,	2.50.0	28.06.2017 to 27.06.2022
2.	Thiru.Poosairaj, S/o.Mariyappan Sithannavasal post, Illuppur Taluk, Pudukkottai District.	Illuppur Sithannavasal	211 (Q.No.1)	2.50.0	28.06.2017 to 27.06.2022
3.	Thiru.R.Radha, S/o.Ramesh,	Illuppur Sithannavasal	211 (Part)	2.00.0	28.06.2017 to 27.06.2022

	Thayinipatti village, Illuppur Taluk, Pudukkottai District.				
4.	Thiru.K.R.N.Ramesh, S/o.Rasu Nattar, Thayinipatti, Vilathupatti post, Illuppur Taluk, Pudukkottai Dt	Illuppur Sithannvasal	95/1 & etc	0.96.0	11.08.2017 to 10.08.2022
5.	Thiru.G.Murugesan, S/o.Ganesan, Pudupatti, Mathiyanallur Taluk, Pudukkottai District.	Irumbali Kulathur	98/1,2	0.70.0	24.11.2017 to 23.01.2022
6.	L.Soosainathan, S/o.Loordhusamy, 448, Housing Unit, Rajagopalapuram, Pudukkottai District	Illuppur Sithannvasal	95/8 & 97/32	0.93.5	14.03.2010 to 13.03.2015
7.	Thiru.A.S.Pichai, S/o.Subbiah, 21/22, Old Perumalkoil street, Annavaasal, Illuppur Taluk, Pudukkottai District.	Illuppur Mathiyanallur	241/3 (p)	1.21.5	29.05.2015 to 28.05.2020
8.	Tmt.S.Sooriya, W/o.Sathiya-moorthy, Ellaiyapatti, Mathiyanallur (post), Illuppur Taluk, Pudukkottai District.	Mathiyanallur Illuppur	280 (part)	1.00.0	14.10.2016 to 13.10.2021
Total				11.81.0	

The Total extent of the Existing / Lease expired / Proposed quarries is **11.14.83 Ha.**

10. Land Requirement

The total extent area of the project is 2.80.33 Ha, Government Poramboke land in Sithannavasal Village of Illuppur Taluk, Pudukkottai District.

Table 8 Land Use Breakup

S. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Area under quarrying	2.08.0	2.64.67
2.	Infrastructure	Nil	0.01.0
3.	Roads	0.01.0	0.01.0
4.	Green Belt & Dump	Nil	0.13.66
5.	Unutilized Area	0.71.33	Nil
	Total	2.80.33 Ha	2.80.33 Ha

11. Human Settlement

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

Table 9 Habitation

SL. NO.	DIRECTION	VILLAGE	DISTANCE	POPULATION
1	North	Meivazhi	3.0Kms	300
2	East	Irumbali	2.0Kms	180
3	South	Madiyanallur	2.0Kms	200
4	West	Annavasal	3.2Kms	1200

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 : 33.7 °C
- ii) Average Maximum Temperature. : 24 °C
- iii) Average Annual Rainfall of the area : 922.8 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, an air quality survey has been conducted at 5 locations. Major air pollutants like Particulate Matter (PM₁₀), Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂) were monitored, and the results are summarized below.

The baseline levels of PM₁₀ (57 – 36 µg/m³), PM_{2.5} (26 - 10 µg/m³), SO₂ (18 – 4 µg/m³), NO₂ (30 - 10 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from February to April 2025.

13.3 Noise Environment

Ambient noise levels were measured at 7 locations around the proposed project site. The maximum Day noise and Night noise were found to be 66 dB(A) and 53 dB(A) respectively in Vinayagar Temple, Sithuppatti. The minimum Day Noise and Night noise were 41 dB(A) and 35 dB(A) respectively, which was observed in Project Site and Government Higher Secondary School in Maruthanthalai.

13.4 Water Environment

- The average pH ranges from 7.77 – 8.22.
- TDS value varied from 410 mg/l to 1836 mg/l
- Hardness varied from 232 to 864 mg/l
- Chloride varied from 30.5 to 580 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 7.12 to 8.51 with organic matter 0.48 % to 0.71 %. The concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

13.6 Biological Environment

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

14. Rehabilitation/ Resettlement

- The overall land of the mine is private patta land. There 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. 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, Pungam, Naval etc will be planted along the lease boundary and avenues as well as over non-active dumps with intervals of 5m.
4. The rate of survival expected to be 80% in this area

Table.10 Plantation/ Afforestation Program

Scientifical Name	Common Name	Planted trees
<i>Azadirachta indica</i>	Neem	150
<i>Pongamia pinnata</i>	Pungam	120
<i>Mimusops elengi</i>	Magizhamaram	100
<i>Albizia lebbbeck</i>	Vaagai	150
<i>Pterocarpus marsupium</i>	Vengai	130
<i>Madhuca longifolia</i>	Iluppai	100
<i>Thespesia populnea</i>	Poovarasu	100
<i>Syzygium cumini</i>	Naaval	100
<i>Lannea coromandelica</i>	Odham	100
<i>Limonia acidissima</i>	Vila maram	150
TOTAL		1200

16. Anticipated Environmental Impacts

16.1 Air Environment and Mitigation Measures

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

16.2 Noise Environment and Mitigation Measures

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

17. Responsibilities for Environmental Management Cell (EMC)

The responsibilities of the EMC include the following:

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

18. Environmental Monitoring Program

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

19. Project Cost

The total project cost is **Rs. 1,23,50,000/-** for deployment of machinery and creation of infrastructural facilities like approach road, Mine office / Workers Shed, First Aid Room etc., including electrifications and water supply.

Table.11 Project Cost details

S. No.	Description	Cost
1	Investment cost	83,25,000/-
2	Operational Cost	40,00,000/-
	Total	1,23,50,000/-

Environmental Management Plan Cost –Rs. 2,60,05,407/-

20. Corporate Environmental Responsibility

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

Table 12 CER Cost

S.No.	CER Activity	CER Cost (Rs.)
1.	<p>Panchayat Union Middle School in Sithannavasal, Illuppur (Taluk), Pudukkottai (Dt).</p> <p>Providing facilities are:</p> <ul style="list-style-type: none"> ➤ Construction of Classroom, Floor tile & Painting work and ➤ Basic amenities such as Environmental awareness books (Tamil) in Library for students, Green Belt development, RO water purifiers, Hygienic Toilet and maintenance of toilet upto lease period. 	5,00,000/-
Total		5,00,000/-

21. Benefits of the Project

- There is a positive impact on socio-economics of people living in the villages. Mining operations in the subject area has a 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 near vicinity.