

**SEPTEMBER
2026**

Executive Summary for Conducting Public Hearing

FOR

Expansion Project of

**“Thiru.A.Seethakumar Rough Stone and Gravel
Quarry over a total extent of 2.12.50 Ha”**

At

**S.F.Nos. 532/2C and 533/1, 2, 3 & 4 of Gopalapuram Village,
Vembakottai Taluk and Virudhunagar District, Tamil Nadu State.**

Project Proponent:

**Thiru.A. Seethakumar,
S/o.Arumugam
D No.543, Mappillai Subbiah Road,
Rajapalayam Town & Taluk,
Virudhunagar District - 626 117.**

Project termed under schedule 1(a) Category B₁

Prepared By:

Ecotech Labs Pvt. Ltd.



NABET Accredited EIA Consultant

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

EXECUTIVE SUMMARY

1. Project Background:

The Proposed project is an Expansion project with total extent area of 2.12.50 Ha, It is a Own Patta land (Dry land) S.F. No: 532/2C and 533/1,2,3 & 4 of Gopalapuram Village, Vembakottai Taluk and Virudhunagar District for the balance lease period of 7 years and 6 Months. The category of project is B1, It is a Rough Stone and Gravel Quarry. The lease area exhibits plain terrain and covered by 0.6m thick layer of sandy brownish red soil followed by gravel, weathered rock formation and massive Charnockite rock formations. The massive rock formation is noticed / occurred at an average depth of 5.6 mts from the surface i.e. below topsoil and weathered rock formation.

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. Quarrying operation is carried out Splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough stone from pithead to needy Crusher. Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting.

The quarry operation is proposed up to depth for 49.6m Below ground level for the proposed mining plan. The Total Geological reserve is about 28,22,787 Metric tons of Rough Stone, 1,62,100 Metric tons of Gravel and 19,158 Metric Tons of Topsoil. The Mineable Reserves are 8,72,919 Metric tons of Rough Stone, 1,29,988 Metric tons of gravel and 12968 Metric Tons of Topsoil for the balance period of 7 years and 6 Months. Production schedule is proposed production of 8,72,919 Metric Tons of Rough Stone and 1,29,988 Metric Tons of Gravel for the period of 7 Years and 6 Months only after leaving necessary safety distance from the lease boundary as indicated in the precise area letter and relevant mining laws in force.

The Precise area communication letter received from The Assistant Director, District Collectorate Office, Dept. of Geology & Mining, Virudhunagar vide Na.Ka.En.KV1/638/2020-Kanimam Dt: 02.02.2021 for lease period of 10 years and The

Lessee has obtained Environmental Clearance vide SEIAA-Chennai letter No. SEIAA-TN/F.No.8855/EC.No.5468/2022 dated 20.12.2022 and Quarry Lease was Granted vide Proceedings of the Assistant Director, Geology & Mining, Virudhunagar District Rc.KV1/638/2020 dated 06.04.2023 for quarrying & transportation of Rough Stone and Gravel over an area extent of 2.12.50 Hectares in SF. Nos.: 532/2C and 533/1,2,3 & 4 of Gopalapuram Village, Vembakottai Taluk, Virudhunagar District under Rule 19 & 20 of Tamil Nadu Minor Mineral Concession Rules 1959. As per the Proceedings of the Assistant Director, Geology & Mining, Virudhunagar District Rc.KV1/638/2020 dated 06.04.2023 and Registered Lease Deed vide document No.1488 of 2023 dated 24.04.2023 the Lease Period of the Quarry is from 11.04.2023 to 10.04.2023.

This Mining Plan for the proposed expansion was approved by the Assistant Director, Geology & Mining, Virudhunagar vide letter Roc.No.KV1/638/2020, Dated: 07.10.2025 for the period of 7 years & 6 Months. There is no CRZ zone, Western Ghats, notified Bird sanctuaries, wildlife sanctuaries as per Wildlife protection Act 1972, within the radius of 15Km.

The project does not require huge amount of water for quarry operation and total water requirement is 4.0 KLD. (1.0 KLD) Drinking water use only Packaged drinking water is available from the nearby approved water vendors and (1.0 KLD) for Greenbelt Development and (2.0 KLD) for dust suppression of water use only road tankers supply. Requirements will be arranged from nearby sources.

The project cost is about Rs.1,95,58,000/- (One Crore Ninety-Five Lakhs and Fifty-Eight Thousand Rupees Only). EMP (Environmental Management Plan) Cost is about Rs.3,66,26,560/- (Three Crore Sixty-Six Lakhs Twenty-Six Thousand and Five Hundred Sixty Rupees Only).

The quantity of removed and transported Rough stone and Gravel during the period from 11.04.2023 to 10.09.2025 is given below;

Period/Year	Rough stone – MT	Gravel-MT
I	34993	21750
II	3325	17400
III From 11.04.2025 to 10.09.2025	20255	15723
Total	88473	54873

2. Nature & Size of the Project

The Existing Rough Stone Quarry over an extent of 2.12.50 Hectares land is located at Gopalapuram Village of Vembakottai Taluk, Virudhunagar District. The lease granted area for mining lease is plain terrain and dry lands in nature.

Mineral intends to quarry : Rough stone and Gravel Quarry
District : Virudhunagar
Taluk : Vembakottai
Village : Gopalapuram
S. F. Nos. : 532/2C and 533/1,2,3 & 4
Extent : 2.12.50 Hectares

Table 1: Brief Description of the Project

S. No	Particulars	Details
1	Latitude	09°21'12.90" N to 09°21'18.70" N
2	Longitude	77°37'14.60" E to 77°37'20.50" E
3	Site Elevation above MSL	The Altitude of the lease area is 120 m above MSL.
4	Mining plan period	Balance Lease Period - 7 Years and 6 Months
5	Topography	Plain topography
6	Land use of the site	Own Patta Land (Dry land-under quarrying operation)
7	Extent of lease area	2.12.50 Ha
8	Nearest highway	SH 186 – Rajapalayam– Alagulam – Vembakottai Road – 4.70 Km, N
9	Nearest railway station	Rajapalayam Railway Station – 12.70 km, NW
10	Nearest airport	Madurai International Airport – 74.18 km, NE

11	Nearest town / city	Town - Rajapalayam – 11.01 Km, NW City - Rajapalayam – 11.01 Km, NW District - Virudhunagar – 42.00 Km, NE
12	Rivers / Canal / Dam / Reservoir	❖ Vembakottai Reservoir - 12.60 Km, E ❖ Vaippar River – 1.75 km, S ❖ Melanmarainadu Checkdam – 6.26 Km, SE
13	Lake/Pond/Odai/ Kanmai/ Kulam	❖ Vadakarai Periyakulam Kanmoi – 0.18 km, SW ❖ Puliyankulam Kanmoi – 0.57 km, SE ❖ Kadiyankulam Kanmoi – 1.14 Km, SE ❖ Kurichiarpatti Kanmoi – 1.96 Km, NW ❖ Muthanathi Periya Kanmoi – 2.64 Km, W ❖ Narikulam Kanmoi – 2.65 Km, SE ❖ Pappankulam Kanmoi – 3.35 Km, N ❖ Nathampatti Kanmoi – 4.07 Km, W ❖ Sangaralingapuram Kanmoi – 4.29 Km, NW ❖ Periyakulam Keelarajakularaman – 4.57 Km, N ❖ Cholapuram Periya Kanmoi – 5.22 Km, NW ❖ Kanmaipatti Kanmoi – 5.26 Km, E ❖ Pernaur Kanmoi – 5.62 Km – NW ❖ Vijayarengapuram Oorani – 6.58 Km, SW ❖ Vagaikulam – 6.68 Km, NW ❖ Periyakanmoi, Melanmarainadu – 6.98 Km, SE ❖ Keela iluppilakulam – 7.04 Km, NW ❖ Periyakanmoi Perumalpatti – 7.49 Km, SW ❖ Achangulam (Keezhakulam) Kanmoi – 7.61Km, NW ❖ Kaanaakulam – 7.90 Km, NW ❖ Melakulam Kanmoi – 8.20 Km, NW ❖ Periyakulam Muthugudi – 8.45 Km, NW ❖ Paruvakudi Kanmoi – 8.56 Km, SW ❖ Mangudi Kanmoi – 9.06 Km, W ❖ Sirukulam Kanmoi – 9.13 Km, NE ❖ Melamarathoni Kanmayi – 9.17 Km, S

		❖ Elanthirakondan Kanmoi – 9.19 Km, NW ❖ Kongalapuram Kanmoi – 9.22 Km - N ❖ Sengulam Kanmoi – 9.30 Km, NW ❖ Periyakulam Kanmoi, Atchamthavithan – 9.34 Km, NE ❖ Maruthankulam – 9.65 Km, SW
14	Hills / valleys	Nil in 15 km Radius from project site
15	Archaeologically places	Nil within 15 km Radius from project site
16	National parks / Wildlife Sanctuaries	❖ ESZ of SMTR – 16.01 km, NW ❖ SMTR – 17.90 Km - NW ❖ Eco-Sensitive zone of Nellai Sanctuary – 23.53 km, W ❖ Nellai Sanctuary – 24.58 km, W
17	Reserved/ Protected Forests	❖ Venkateswarapuram R.F – 22.51 Km, N
18	Seismicity	Proposed Lease area come under Seismic zone-II

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 and Gravel 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

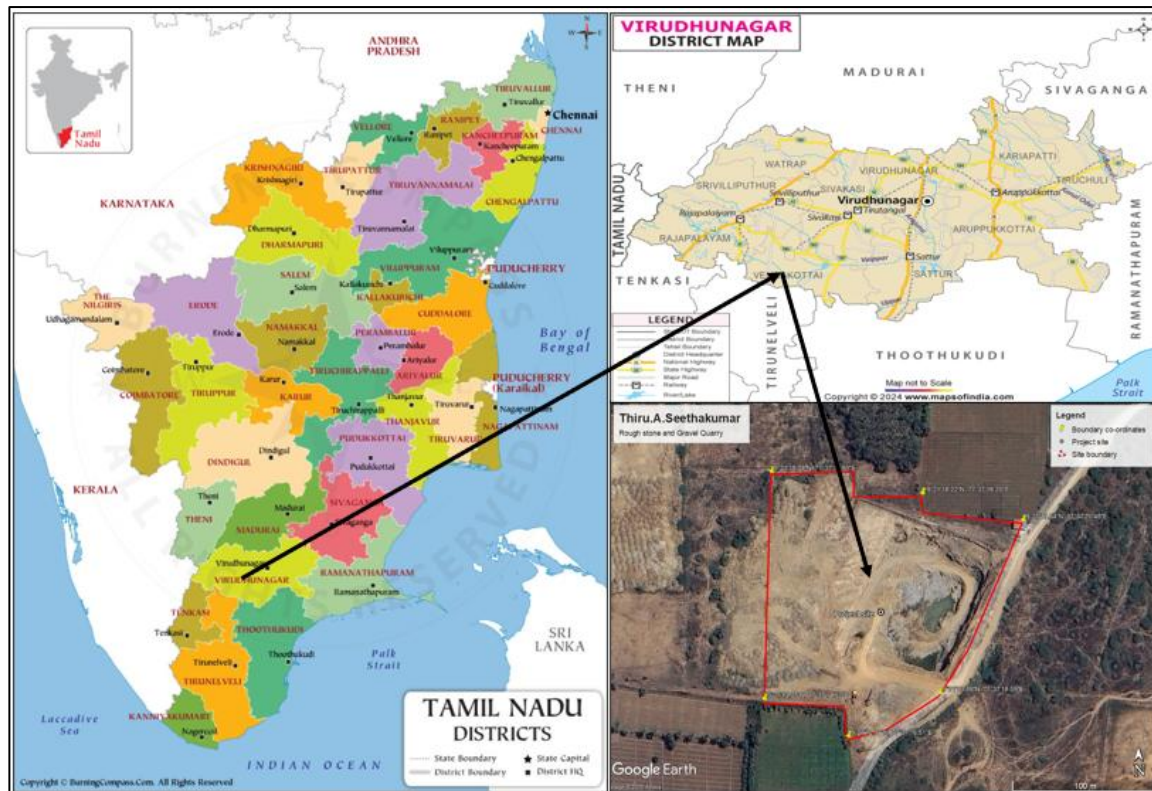
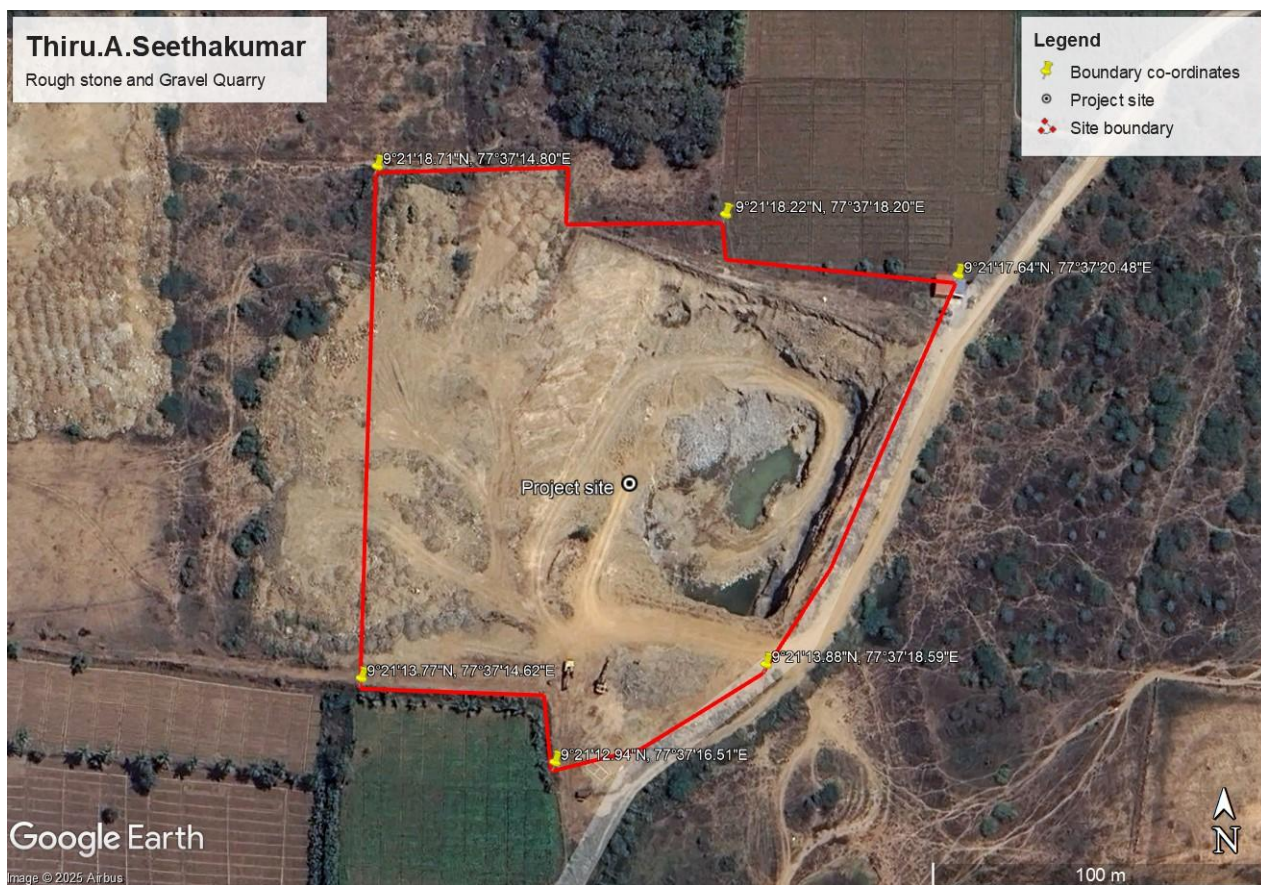


Figure 2: Google Image of the Project Site



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 lithounits. Charnockite is interbanded nature with crystalline carbonate rocks are observed in most of the limestone quarry in Pandalgudi, Lakshmipuram, Gopalapuram villages (Field photograph. 1), suggested a metasedimentary origin for the charnockite (V.R.Sowmi Narayanan, etal.,). 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. The specks of pyrites within the charnockite are seen in the Duraisampuram village. Banded charnockite is observed in Gopalapuram rough stone quarry.

5. Geological Resources

The geological reserves have been calculated based on the cross-section method and the availability of Geological Resources in this land is given below.

Table 2. Geological resources

Section	Length (m)	Width (m)	Depth (m)	Tonnage Factor	Rough stone MT	Gravel MT	Topsoil MT
A-A' & B-B'	60	161	0.6	2.0	-	-	11592
	60	161	0.5	2.0	-	96600	-
	60	161	44.0	2.75	1168860	-	-
A-A' & C-C'	96	150	0.6	2.0	-	-	17280
	96	150	5.0	2.0	-	144000	-
	96	150	44.0	2.75	1742400	-	-
Total Estimated Geological Reserves					2911260	240600	28872
Less: Already Quarried (Below Table)					(-) 88473	(-) 78500	(-) 9714
Balance Geological Reserves					2822787	162100	19158

Table 3. Already quarried reserves

Section	Length (m)	Width (m)	Depth (m)	Tonnage Factor	Rough stone MT	Gravel MT	Topsoil MT
A-A' & B-B'	50.0	99.0	0.6	2.0	-	-	5940
	49.0	98.0	5.0	2.0	-	48020	-
	44.0	92.0	5.0	2.75	55660	-	-
A-A' & C-C'	30.5	103.1	0.6	2.0	-	-	3774
	30.0	101.6	5.0	2.0	-	30480	-
	28.0	85.23	5.0	2.75	32813	-	-
Total Already Quarried Reserves			10.6		88473	78500	9714

Table 4. Available gravel stocks size& quantity:

Stock Piles	Length in m	Width in m	Height in m	Tonnage factor	Gravel in MT
I	54.1	32.0	3.6	2.0	12465
II	49.6	36.3	3.1	2.0	11163
Total Gravel in 2 Stocks Piles					23628

The available mineable reserves are calculated for the balance period of 7 years & 6 months against granted lease period of 10 years based on the total minable reserves calculated by safety distances of 10.0m at southern side for the nilaviyal odai, 10m to the cart track on eastern side & Boomithan land at northwest and 7.5m to the patta land on all other sides of the boundary side of the applied area and Bench losses.

Table 5. Mineable Reserves

Section	Bench	Length (M)	Width (M)	Height (M)	Tonnage Factor	Rough Stone (MT)	Gravel (MT)	Topsoil in (MT)
A-A' & B-B'	-	50.0	143.5	0.6	2.0	-	-	8610
	I	49.0	142.0	5.0	2.0	-	69580	-
	II	44.0	131.0	5.0	2.75	79255	-	-
	III	39.0	121.0	5.0	2.75	64886	-	-
	IV	34.0	111.0	5.0	2.75	51893	-	-
	V	29.0	101.0	5.0	2.75	40274	-	-

	VI	24.0	91.0	5.0	2.75	30030	-	-
	VII	19.0	81.0	5.0	2.75	21161	-	-
	VIII	14.0	71.0	5.0	2.75	13668	-	-
	IX	9.0	61.0	5.0	2.75	7549	-	-
	X	4.0	51.0	4.0	2.75	2244	-	-
A-A' & C-C'	-	88.5	132.5	0.6	2.0	-	-	14072
	I	88.0	131.0	5.0	2.0	-	115280	-
	II	82.0	120.0	5.0	2.75	135300	-	-
	III	77.0	110.0	5.0	2.75	116463	-	-
	IV	72.0	100.0	5.0	2.75	99000	-	-
	V	67.0	90.0	5.0	2.75	82913	-	-
	VI	62.0	80.0	5.0	2.75	68200	-	-
	VII	57.0	70.0	5.0	2.75	54883	-	-
	VIII	52.0	60.0	5.0	2.75	42900	-	-
	IX	47.0	50.0	5.0	2.75	32313	-	-
	X	42.0	40.0	4.0	2.75	18480	-	-
Total Estimated Mineable Reserves						961392	184860	22682
Less: Existing Pit – Total Quantity						(-) 88473	(-) 78500	(-) 9714
Addition: Available Gravel Stock Total						-	(+) 23628	-
Balance Mineable Reserves						872919	129988	12968

The available mineable reserves have been computed as 8,72,919 MT of Rough Stone 1,29,988 MT of Gravel and 12,968 MT of Topsoil up-to the depth of 49.6 m from the ground level.

Table 6. Year wise Production Plan

Section	Year	Bench	Length (M)	Width (M)	Height (M)	Tonnage Factor	Rough Stone in MT	Gravel in MT
A-A' & B-B'	III-Year	III	39	82.0	5.0	2.75	43,973	-
	6 months	III	23	75.0	5.0	"	23,719	-
Gravel available in 2 Stocks -Total							-	23,628
III – YEAR Balance Period 6-Months PRODUCTION							67,692	23,628
A-A' & B-B'	IV-Year	I	49	44.0	5.0	2.0	-	21,560
		II	44	39.0	5.0	2.75	23,595	-
		III	39	39.0	5.0	"	20,914	-

		IV	34	111.0	5.0	“	51,893	-
		V	29	101.0	5.0	“	40,274	-
A-A' & C-C'		I	30	29.4	5.0	2.00	-	8,820
		II	28	34.77	5.0	2.75	13,386	-
		III	23	35.0	5.0	“	11,069	-
		IV	18	100.0	5.0	“	24,750	-
IV – YEAR PRODUCTION							1,85,881	30,379
A-A' & B-B'		VI	24	91.0	5.0	2.75	30,030	-
A-A' & C-C'	V-YEAR	I	29	131.0	5.0	2.0	-	37,990
		II	25	120.0	5.0	2.75	41,250	-
		III	25	110.0	5.0	“	37,813	-
		IV	25	100.0	5.0	“	34,375	-
		V	38	90.0	5.0	“	47,025	-
V – YEAR PRODUCTION							1,90,493	37,990
A-A' & C-C'	VI-YEAR	I	29	131.0	5.0	2.0	-	37,990
		II	29	120.0	5.0	2.75	47,850	-
		III	29	110.0	5.0	“	43,863	-
		IV	29	100.0	5.0	“	39,875	-
		V	29	90.0	5.0	“	35,888	-
		VI	15	80.0	5.0	“	16,500	-
VI – YEAR PRODUCTION							1,83,976	37,990
A-A' & B-B'		VII	19	81.0	5.0	2.75	21,161	-
		VII	14	71.0	5.0	“	13,668	-
A-A' & C-C'	VII-YEAR	VI	47	80.0	5.0	“	51,700	-
		VII	57	70.0	5.0	“	54,863	-
		VIII	52	60.0	5.0	“	42,900	-
VII – YEAR PRODUCTION							1,84,292	-
A-A' & B-B'	VIII-YEAR	IX	9	61.0	5.0	2.75 “	7,549	-
A-A' & C-C'		IX	19	50.0	5.0		13,062	-
VIII – YEAR PRODUCTION							20,611	-

A-A' & B-B'	IX-YEAR	IX	28	50.0	5.0	2.75	19,250	-
IX – YEAR PRODUCTION							19,250	-
A-A' & B-B'	X-YEAR	X	4	51.0	4.0	2.75 “	2,244	-
A-A' & C-C'		X	42	40.0	4.0		18,480	-
X – YEAR PRODUCTION							20,724	-
TOTAL PRODUCTION FOR REMAINIG LEASE PERIOD							8,72,919	1,29,988

Table 7: Year wise Production summary

Year	Rough Stone (MT)	Gravel (MT)
III- remaining period	67692	23628
IV	185881	30379
V	190493	37990
VI	183976	37990
VII	184292	-
VIII	20611	-
IX	19250	-
X	20724	-
Total	8,72,919	1,29,988

6. Mining

Opencast Mining

Open cast Semi-Mechanized Mining with one 6.0-meter bench for Topsoil & Gravel followed by 5.0-meter vertical bench with a bench width not less than the bench height.

The Quarry operation involves shallow jack hammer drilling, blasting, loading and transportation.

Process Description

- The reserves and resources arrived based upon the Geological investigation
- Removal of Gravel by Excavators and directly Loaded into Tippers.
- Removal of Rough Stone by Excavators by Drilling and Blasting.

- Shallow Drilling With Jackhammer of 30-32 mm 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 4.0 KLD. Domestic water will be sourced from nearby Gopalapuram Village and other water will be source from nearby road tankers supply.

Table 8. Water Balance

Purpose	Quantity	Sources
Drinking Water	1.0 KLD	Packaged Drinking water vendors available in Gopalapuram village, which is about 0.40 km, N from the project site.
Afforestation & Green belt	1.0 KLD	Other domestic activities through road tankers supply
Dust suppression Sprinkling	2.0 KLD	From road tankers supply
Total	4.0 KLD	

8. Manpower

Total manpower required for the project is approximately 18 persons. The workers will be from nearby villages.

Table 9. Man Power

S. No.	Levels & Details		Persons
1.	Skilled	Operators	1
		Mechanic	1
		Blaster/Mate	2
2.	Semi-skilled	Drivers	2
3.	Unskilled	Musdoor/Labours	8
		Cleaners	2
		Office Boy	1
4.	Management & Supervisory staff		1
Total			18

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

9. Solid Waste Management

Table 10 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 11. 500m Radius Cluster Mine

1) Existing other quarries:

S. No.	Quarry details	Taluk & Village	S.F. Nos & Extent (Ha)	Proceeding No & Lease Period
I. Existing Quarries				
1	M/s.Lakshmi Blue Metals (Rajmohan), 540/B, Gopalapuram Main Road, E.B.Sub office, Nallamanayakkanpatti Post, Rajapalayam Taluk	Vembakottai / Gopalapuram	557/1, 558/1, 558/2, 559, 574, 557/2 Extent – 4.85.00 Hect	KVI1/232/2021 31.01.2023 Lease period – 01.02.2023 to 31.01.2028
II. Abandoned Quarry				
1.	Thiru.V.Rajmohan S/o.Venkatapathy, No:4A8/1, INTUC Nagar, Rajapalayam, Virudhunagar.	Vembakottai / Gopalapuram	556/2 Extent – 1.14.50 Hect.,	KV1/555/2020 09.11.2020 Lease period 20.01.2017 to 19.01.2022
2.	Thiru.Mayilsamy	Vembakottai / Gopalapuram	565, 566	Prior 2013
III. Present Proposed Quarry				
1.	Thiru.A.Seethakumar, S/o.Arumugam, D.No.543, Mappilai Subbaiah Road, Rajapalayam Town and	Vembakottai / Gopalapuram	532/2C and 533/1,2,3 & 4 Extent – 2.12.50 Hect.,	KV1/638/2020

	Taluk, Virudhunagar – 626 117.			
Total Cluster area			6.97.50 Ha	

10. Land Requirement

The total extent area of the project is 2.12.50 Ha, Patta Land in Gopalapuram Village of Vembakottai Taluk, Virudhunagar District.

Table 12 Land Use Breakup

S. No.	Land Use	Present Area (Hect)	Area after the quarrying period of 5 years (Hect)
1.	Area under quarrying	0.70.20	1.58.20
2.	Infrastructures	0.01.0	0.01.0
3.	Roads, cart tracks etc.,	0.03.0	0.03.0
4.	Green Belt	0.50.30	0.50.30
5.	Unutilized Area	0.88.00	0.00.00
Total		2.12.50	2.12.50

11. Human Settlement

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

Table 13 Habitation

Sl. No	Direction	Village	Population	Distance
1	North	Gopalapuram	1,461	0.4 Km
		Kannithevanpatti	-	2.0 Km
		Peyampatti	-	2.7 Km
		KeelaRajakularaman	8,986	3.5 Km
2	Northeast	Swaminathapuram	-	2.5 Km

		Andappanayakanpatti	-	2.5 Km
		Nallakammapuram (H)	-	3.0 Km
		Karisalkulam	1,500	4.0 Km
		Thombakulam	2,400	4.5 Km
3	Northwest	Varagunaramapuram	1,357	2.0 Km
		Nathampatti	2,143	3.5 Km
		Nallamanaickenpatti	2,806	4.5 Km
4	South	Vadakarai	3,454	1.5 Km
5	Southeast	Sivalingapuram	2,143	2.0 Km
6	Southwest	Thenkarai	918	2.2 Km
		Senthatiiyapuram	1,200	4.0 Km
7	East	Alangulam	1,924	4.5 Km
8	West	Kilavikulam	741	3.5 Km
		Cholapuram R. S	-	5.0 Km

12. Power Requirement

The proposed Rough stone quarrying does not require any power supply for the quarrying operation. **16 Litre** diesel per hour for excavator for mining and loading for Rough stone needed and **10 Litre** diesel per hour for excavator for mining and loading for Topsoil.

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 : 30° C

ii) Average Maximum Temperature: 38.5°C

iii) Average Annual Rainfall of the area: 820 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 PM₁₀ (41- 63 µg/m³), PM_{2.5} (16 - 30 µg/m³), SO₂ (5-16 µg/m³), NO₂ (8-52 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from June 2026 to August 2026.

13.3 Noise Environment

The maximum Day noise and Night noise were found to be 60 dB(A) and 52 dB(A) respectively in Valavaitha Amman Temple. The minimum Day Noise and Night noise were 40 dB (A) and 32 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 7.13 – 7.60.
- TDS value varied from 415 mg/l to 1395 mg/l
- Hardness varied from 245 to 798mg/l
- Chloride varied from 85.5 to 413 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 7.23 to 8.76 with organic matter 0.07 to 1.21 %. 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 mine is 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, Vilvam, Panai, etc will be planted along the lease boundary and avenues as well as over non-active dumps at a rate of 1100 trees will plant before commencement of mining operation with interval 5m.
4. The rate of survival expected to be 70% in this area

Table.14 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	70%	1100
Total		1100

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 1,95,58,000/-** 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 .15 Project Cost details

S. No.	Description	Cost (Rs.)
1	Investment Cost	8,00,000/-
2	Expenditure Cost	1,87,58,000/-
	Total	1,95,58,000/-

Total EMP Cost: Rs.3,66,26,560/- for 7.5 years, approximately (Rs. 366 Lakhs)

20. Corporate Environmental Responsibility

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

Table 16 CER Cost

S. No.	CER Activity	CER value (Rs)
1.	We have provided the CER activity at a total cost of Rs. 5,00,000/- (Rupees Five Lakhs only) by completing the work of laying paver block pavements within the premises of Panchayat Union Middle School, Gopalapuram, Virudhunagar District – 626136 , in accordance with the commitment made in the existing Environmental Clearance. Photographic evidence of the completed work is enclosed as Annexure.	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 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.

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