

**November
2022**

Executive Summary

Sri Vari Infrastructures Rough stone quarry- 2.95.0 Ha

For

PUBLIC HEARING

At

**S.F Nos : 637(P) and 4(P) of Thuppuganapalli & Agaram
Agraharam Village, Shoolagiri Taluk, Krishnagiri District,
Tamil Nadu**

PROJECT PROPONENT

**Sri Vari Infrastructure,
Proprietor Thiru R. Adalarasu
D.No. 2/389, PoosaripattiVillage,
Sogathur Post, Reddyhalli,
Dharmapuri Taluk,
Dharmapuri District.
Pin Code: 636809.**

EIA Notification 2006 Schedule 1(a) Category B1 (Cluster)

Prepared By:

Ecotech Labs Pvt. Ltd.



NABET Accredited EIA Consultant

No.48, 2nd Main Road,

Ram Nagar South Extension,

Pallikaranai, Chennai-600100

EXECUTIVE SUMMARY

1. Project Background:

The proposed rough stone quarry over an extent of 2.95.0 Ha, Government Poromboke land in Thuppuganapalli & Agaram Agraharam Village, Shoolagiri Taluk, Krishnagiri District. The category of the project is B1 (cluster), the lease area exhibits hilly terrain and sloping towards Eastern side covered with Rough Stone.

The quarry operation is proposed to carry out with open cast mechanized mining with 7.0 meter vertical bench with a bench width of 5.0 meter. The Quarry operation involves 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 of 43m (1m Top Soil + 42m Roughstone) Surface ground level above is 25m and surface ground level below is 18m. Geological Resources is estimated at 1365154 Cum of Rough stone. Mineable and Recoverable Reserves is estimated as 983304 Cum & 934140 Cum of Rough Stone and after leaving necessary safety distance from the lease boundary as indicated in the precise area letter and relevant mining laws in force. Production Schedule is production of 705061 Cum of Rough Stone for the period of Five years.

The Mining Plan was approved by Assistant Director, Geology and Mining, Krishnagiri vide letter Rc.No. 231/2019/Mines dated: 29.11.2019. There is no interstate boundary, 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 Existing Rough Stone Quarry over an extent of 2.95.0 Hectares land is located at Thuppuganapalli & Agaram Agraharam Village, Shoolagiri Taluk, Krishnagiri District.

Mineral intends to quarry : Rough stone

District : Krishnagiri

Taluk : Shoolagiri
 Village : Thuppuganapalli & Agaram Agraharam
 S. F. Nos. : 637 (p) and 4 (P)
 Extent : 2.95.0 Hectares

Table 1 Brief Description of the Project

S. No	Particulars	Details
1	Latitude	12°37'34.9863"N to 12°37'32.5392"N
2	Longitude	77°57'29.6170"E to 77°57'24.3969"E
3	Site Elevation above MSL	766 m AMSL
4	Topography	Hilly Terrain
5	Land use of the site	Government Poromboke land
6	Extent of lease area	2.95.0 Ha
7	Nearest highway	NH 844 (Hosur - Dharmapuri) – 2.6km, S NH- 44 (Bangalore - Krishngiri) – 6km, N
8	Nearest railway station	Kelamangalam Railway Station – 10 km, W
9	Nearest airport	Bangalore Airport – 45km, NNW
10	Nearest town / city	Town - Shoolagiri - 8 Km -NE City - Krishnagiri – 30km, E District - Krishnagiri – 30km, E
11	Rivers / Canal	River Ponnaiyar – 650m, E
12	Lake	Chappadi Lake – 5.5km, N Kamandoddi Lake – 6.2 km N Old Lake – 6.2 km, N Nagamangalam Lake – 7.2km, S

		Bathapalli Lake – 14km, 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	Udedurgam RF – 11km, S Sanmavu RF – 5.4km, NNW
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 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 an artificial recharge to the nearby wells.
- ❖ No damage to the land is caused, no reclamation or back filling is required.

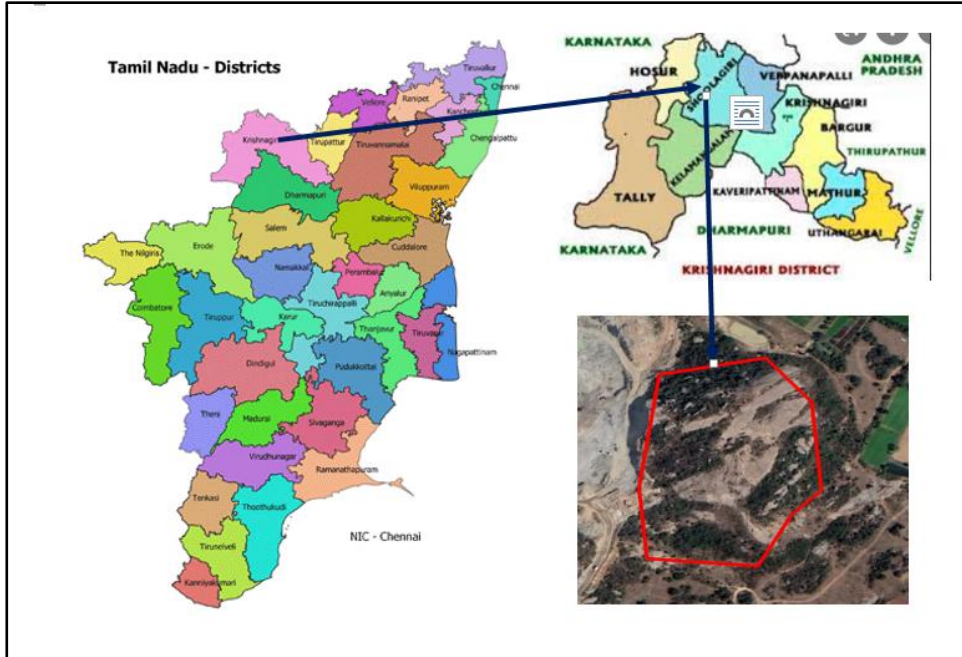


Figure 1: Location Map of the Project Site



Figure 2: Google Image of the Project Site

4. Charnockite

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.

5. Geological Resources

Top Soil:

The thickness of the topsoil in this area is 1.0m and the total volume of top soil will be 31794 Cum

Rough stone:

The Availability Geological Reserve is estimated as 1365154 Cum respectively at the rate of 95% recovery upto the permissible depth. Top soil is calculated upto a depth of 1m and Rough stone at a depth of 56m. Total depth – 57m Surface ground level above is 25m and surface ground level below is 32m. Availability of Resources is given below.

Table 2 Geological reserves

GEOLOGICAL RESERVES								
Section	Bench	L (m)	W (m)	D (m)	Volume In M3	Geologica l Reserves in m3 @ 95%	Mine waste in m3 @ 5%	Top Soil in m3
XY-AB	I	117	147	1				17199
	II	63	85	7	37485	35611	1874	
	III	82	109	7	62566	59438	3128	
	IV	103	128	7	92288	87674	4614	
	V	117	147	7	120393	114373	6020	
	VI	117	147	7	120393	114373	6020	
	VII	117	147	7	120393	114373	6020	
	VIII	117	147	7	120393	114373	6020	

	IX	117	147	7	120393	114373	6020	
TOTAL					794304	754588	39716	17199
XY-CD	I	105	139	1				14595
	II	17	1	7	119	113	6	
	III	46	1	7	322	306	16	
	IV	76	112	7	59584	56605	2979	
	V	105	139	7	102165	97057	5108	
	VI	105	139	7	102165	97057	5108	
	VII	105	139	7	102165	97057	5108	
	VIII	105	139	7	102165	97057	5108	
	IX	105	139	7	102165	97057	5108	
TOTAL					570850	542309	28541	14595
GRAND TOTAL					1365154	1296897	68257	31794

Table 3 Mineable Reserves

MINEABLE RESERVES								
Section	Bench	L (m)	W (m)	D (m)	Volume M3	Mineable Reserves in m3 @ 95%	Mine waste in m3 @ 5%	Top Soil in m3
XY-AB	I	117	147	1				17199
	II	63	85	7	37485	35611	1874	
	III	82	109	7	62566	59438	3128	
	IV	103	128	7	92288	87674	4614	
	V	107	137	7	102613	97482	5131	
	VI	102	132	7	94248	89536	4712	
	VII	97	127	7	86233	81921	4312	
	VIII	92	122	7	78568	74640	3928	
	IX	87	117	7	71253	67690	3563	
TOTAL					625254	593992	31262	17199
XY-CD	I	105	139	1				14595
	II	17	1	7	119	113	6	
	III	46	1	7	322	306	16	
	IV	76	112	7	59584	56605	2979	

V- YEA R	XY - AB	VII	97	12 7	7	86233	81921	4312	
	XY - CD	VII	85	99	7	58905	55960	2945	
	TOTAL					145138	137881	7257	
GRAND TOTAL						742168	705061	37107	31794

6. Mining

Opencast mining

The quarry operation is proposed to carry out with conventional open cast mechanized mining with 7.0 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 resource are 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 25.5 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 Agaram Village and other water will be source from nearby road tankers supply.

Table 5 Water Balance

Purpose	Quantity	Source
Domestic and Drinking Water	1.0 KLD	Packaged Drinking water vendors available in Agaram which is about 1km South of the area.
Green belt	1.5 KLD	Other domestic activities through road tankers supply

Dust suppression	1.5 KLD	From road tankers supply
Total	4.0 KLD	

8. Man Power

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

Table 6 Man Power

1.	Skilled	Operator	2No.
		Mechanic	1 No.
		Blaster /Mate	1 No.
2.	Semi-skilled	Driver	2No.
3.	Unskilled	Musdoor / Labours	4Nos
		Cleaners	2 Nos
		Office Boy	1 No
4	Management & Supervisory Staff		2 No.
	Total =		15Nos

9. Solid Waste Management

Table 7 Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	2.7 kg/day	Municipal bin including food waste
2	Inorganic	4.05 kg/day	TNPCB authorized recyclers

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

Table 8 500m Radius Cluster Mine

1) Existing other quarries:

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1	M/s.AVS Tech Building solutions India (P) Ltd, plot No. 298, Sipcot staf Housing Colony, Mookandapalli, Hosur Taluk, Krishnagiri Dt.	Shoolagiri Thuppuganapalli village	S.F.No.637(P-3)	Ext:4.50.00 Hects	25.01.2019 to 24.01.2024
2	Thiru.s.Sundraiah, S/o. Late Subramaniam, No.14/5, Amman nagar, Opp to Government ITI HCF(Post), Hosur Taluk, Krishnagiri Dt	Shoolagiri Thuppuganapalli village	S.F.No.420(P-2)	Ext:3.00.00 Hects	22.08.2016 to 21.8.2026

2) Details of abandoned /Old Quarries :

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	Thiru.R.Rathinam, Manangkundram, Alagu Goundanpatti, Post, Buthar Natham, Trichy.	Hosur, Thuppuganapalli village	S.F.No.420(P-5)	Ext:5.00.00 Hects	03.07.2008 to 02.07.2018

3) Details of Proposed quarries :

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	M/s.Sri Vari Infrastructure, Proprietor, Thiru.Adal Arasu, S/0. Ramathilagan, D.No.2/389, Poosaripatti Village and Sogathur Post, A.Reddyhalli, Dharmapuri Taluk & District	Shoolagiri Taluk, Thuppuganapalli and Agaram graharam Village	S.F.No. 637 (Part) & 4 (Part)	Ext: 2.00.0 & 0.95.0 Hects	Precise area given Instant Proposal
2	Thiru.K.P.Anand, S/0.V.P.Perumal, Velampatti village, Pennagaram Taluk, Dharmapuri District.	Shoolagiri Taluk, Thuppuganapalli Village	S.F.No. 637 (Part-1)	Ext: 4.00.0 Hects	Precise area given.
3	Thiru.K.P.Anand, S/o.V.P.Perumal, Velampatti village, Pennagaram Taluk, Dharmapuri District,	Shoolagiri Taluk, Thuppuganapalli Village	S.F.No. 637 (Part-2)	Ext: 4.50.0 Hects	Precise area
4	M/s.AVS Tech Building Soultions India(P) Ltd, Pot No.298, Sipcot staf Housing Colony, Mookandapai, Hosur Tatu, Kaishnagiri Dt.	Shoolagiri, Thuppuganapalli Village	S.F.No. 420 (Part)	Ext: 4.900' Hects	given.

10. Land Requirement

The total extent area of the project is 2.95.0 Ha, Government Poromboke Land in Thuppuganapalli & Agaram Agraharam Village of Shoolagiri Taluk, Krishnagiri District.

Table 9 Land Use Breakup

Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Quarrying Pit	Nil	2.47.0
2.	Infrastructure	Nil	0.01.0
3.	Roads	Nil	0.01.0
4.	Green Belt and dump	Nil	0.46.0
5.	Unutilized	2.95.0	Nil
	Total	2.95.0	2.95.0

11. Human Settlement

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

Table 10 Habitation

S.No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Keeranapalli	1.2km – North	400
2.	Samanapalli	2.0 km – East	400
3.	Agaram	1.0 km – South	350
4.	Uddanapalli	3.0km – West	300

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 Top soil.

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 : 18⁰ C to 25⁰ C
- ii) Average Maximum Temperature. : 30⁰ C to 35⁰ C
- iii) Average Annual Rainfall of the area : 853 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 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 (34- 61 µg/m³), PM2.5 (15- 29 µg/m³), SO₂ (5-13 µg/m³), NO₂ (10-30 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from May to August 2022.

13.3 Noise Environment

The maximum Day noise and Night noise were found to be 61 dB(A) and 47 dB(A) respectively in Aavin Milk Parlour, Ulagam . The minimum Day Noise and Night noise were 40 dB(A) and 35 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 7.42 – 8.11.
- ❖ TDS value varied from 330 mg/l to 1116 mg/l
- ❖ Hardness varied from 242 to 669 mg/l
- ❖ Chloride varied from 19.6 to 254 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 6.65 to 8.02 with organic matter 1.7 to 3.4 %. 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.

13.7 Socio Economic Environment

Shoolagiri is a town in the Krishnagiri district in the State of Tamilnadu and rich with the Rough Stone. The Thuppuganapalli village has a population of 4281 of which 2192 are males while 2089 are females as per Population Census 2011.

14. Rehabilitation/ Resettlement

- ❖ The overall land of the mine is Government Poromboke land. There are 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 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 140 trees per annum with interval 5m.
4. The rate of survival expected to be 70% in this area

Table 11 Plantation/ Afforestation Program

Year	Name of species	Place of planted	No of species	Spacing	Survival
2022	Neem/Pungam	North	60	5m	70%
2023	Tamarind	South	60	5m	70%
2024	Poovarasu/Pungam	East	60	5m	70%
2025	Naval/Pungam	West	60	5m	70%
2026	Panai	South	60	5m	70%
Total			1500		

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:

- ❖ Environmental Monitoring of the surrounding area
- ❖ Developing the green belt/Plantation
- ❖ Ensuring minimal use of water
- ❖ 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 1,27,43,000/-** 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 Asset Cost	97,43,000/-
2	Operational Cost	30,00,000 /-
	Total	1,27,43,000/-
1	EMP Cost	Rs. 98,35,704/-

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 Primary School, Udanapalli Provision of <ul style="list-style-type: none"> ➤ Infrastructure, additional class room ➤ Environmental books for library (in Tamil language), ➤ Greenbelt facilities and ➤ Basic amenities such as safe drinking water, Hygienic Toilets facilities, furniture. 	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.