

February

2023

Executive Summary

**Tvl.S.V.Granites Multicolour Granite Quarry - 1.91.50
Ha**

For

PUBLIC HEARING

At

**S.F.Nos. 1124/7 (Part), 1130/7 (Part), 1131/7 & 1131/8 of
Irudukottai Village, Denkanikottai Taluk,
Krishnagiri District, Tamil Nadu.**

PROJECT PROPONENT

**Tvl.S.V.Granites,
No.17B/3, Vellakottai 1st Street,
Chennai Salai,
Krishnagiri District – 635 001.**

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

**Prepared By:
Ecotech Labs Pvt. Ltd.**



**NABET Accredited EIA Consultant
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Ram Nagar South Extension,
Pallikaranai, Chennai-600100**

EXECUTIVE SUMMARY

1. Project Background:

Proposed proposal pertains to Multi Colour Granite mining project by open cast semi mechanized method on allotted mine lease area at Irudukottai Village, Denkanikottai taluk of Krishnagiri District, Tamil Nadu. It is a slightly elevated terrain. Proposed quarry was existing quarry and lease was granted in favour of Thiru. Jaramsundar in S.F.No.1130/7(P) & 1131/7 over an extent of 1.00 acre (0.40.0 Ha) of Irudukottai village vide G.O.(2D) No.166 Industries Department dated 18.08.1995 and the lease period expired on 04.09.2005.

The Proposed Multi Colour Granite Quarry over an extent of 1.91.50 Ha at S.F.No. 1124/7(P) 1130/7(P) 1131/7, 1131/8 of Irudukottai Village, Denkanikottai taluk, Krishnagiri District, Tamilnadu. Based on the 500m radius letter obtained from geology of mining, Krishnagiri vide letter no Roc.No73/MM4/2022 dated 23.07.2022 proposal coming under Cluster of mine exceeding more than 5 Ha and the total cluster area is 6.22.8 Ha. We have submitted our fresh application for ToR to SEIAA vide Proposal No: SIA/TN/MIN/82402/2022 on 17.08.2022.

The category of the project is B1 (cluster), the lease area exhibits slightly elevated terrain and sloping towards south-west side covered with Multi Colour Granite. The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 5.0-meter vertical bench with a bench width of 5.0 meter. In addition to the above the Quarry operation involves Diamond wire saw cutting, loading and transportation.

The quarry operation is proposed up to depth for 23 m below ground level. The Total Geological reserve is about 4,97,010 m³ of Multi Colour Granite. The Mineable and the Recoverable reserves are 497010 m³ respectively, the proposed Year wise production is carried out 20142 m³ of Multi Colour Granite is to be mined for (Sixty months) Five years only.

Mining plan was approved by Commissionerate of Geology and Mining, Guindy vide letter Roc.No73/MM4/2022 dated 23.07.2022. The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats, notified Bird sanctuaries, wild life sanctuaries as per Wild life protection Act 1972, within the radius of 15Km.

2. Nature & Size of the Project

The proposed Multi Colour Granite Quarry over an extent of 1.91.50 Hectares land is located at Irudukottai Village of Denkanikottai taluk, Krishnagiri District.

Mineral intends to quarry : Multi Colour Granite
 District : Krishnagiri
 Taluk : Denkanikottai
 Village : Irudukottai
 S. F. Nos. : 1124/7(P) 1130/7(P) 1131/7, 1131/8
 Extent : 1.91.50 Hectares

Table 1: Brief Description of the Project

S. No.	Particulars	Details
1	Latitude	12° 25' 41.1003" N to 12° 25' 36.5229" N
2	Longitude	77° 50' 03.8947" E to 77° 49' 57.9786" E
3	Site Elevation above MSL	936 m from MSL
4	Topography	Slightly elevated terrain
5	Land use of the site	Patta land (Registered in name of M/s. S.V.Granites vide Patta No. 9241)
6	Extent of lease area	1.91.50Ha
7	Nearest highway/Road	<ul style="list-style-type: none"> ➤ MDR 588 – Denkanikottai – Anchety – Natrampalayam Road, 9.17km, W ➤ SH 17A – Hosur – Denkanikottai Road – 12.57km, NW ➤ SH 17B – Hosur – Thally – Denkanikottai Road – 12.57 km, NW

8	Nearest railway station	Marandahalli Railway Station 20.38 Km – E
9	Nearest airport	Hosur Airport - 32.21Km – N Kempegowda International Airport – 86.50 Km, N
10	Nearest town / city	Town – Denkanikottai – 11.31 Km, NW City - Denkanikottai – 11.31 Km, NW District - Krishnagiri – 41.7 Km, ENE
11	Rivers / Canal	Nil
12	Lake	Nil
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	❖ Denkanikotta R.F. – 7.10 km, N ❖ Manchi R.F. – 7.70 km, SW ❖ Udedurgam R.F. – 7.91 km, NE ❖ Galigattam R.F. – 11.28 km, SE
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 demand for granite increased due to rapid industrialization and growth in infrastructure. So the number of granite producing quarries is increasing in India. Granite is the chief material for the export industries like monuments, flooring slabs, Kitchen articles, sculptures & export. Based on the demand of Granite, the lessee intends to produce the required quantity of Multi Colour Granite for domestic market.

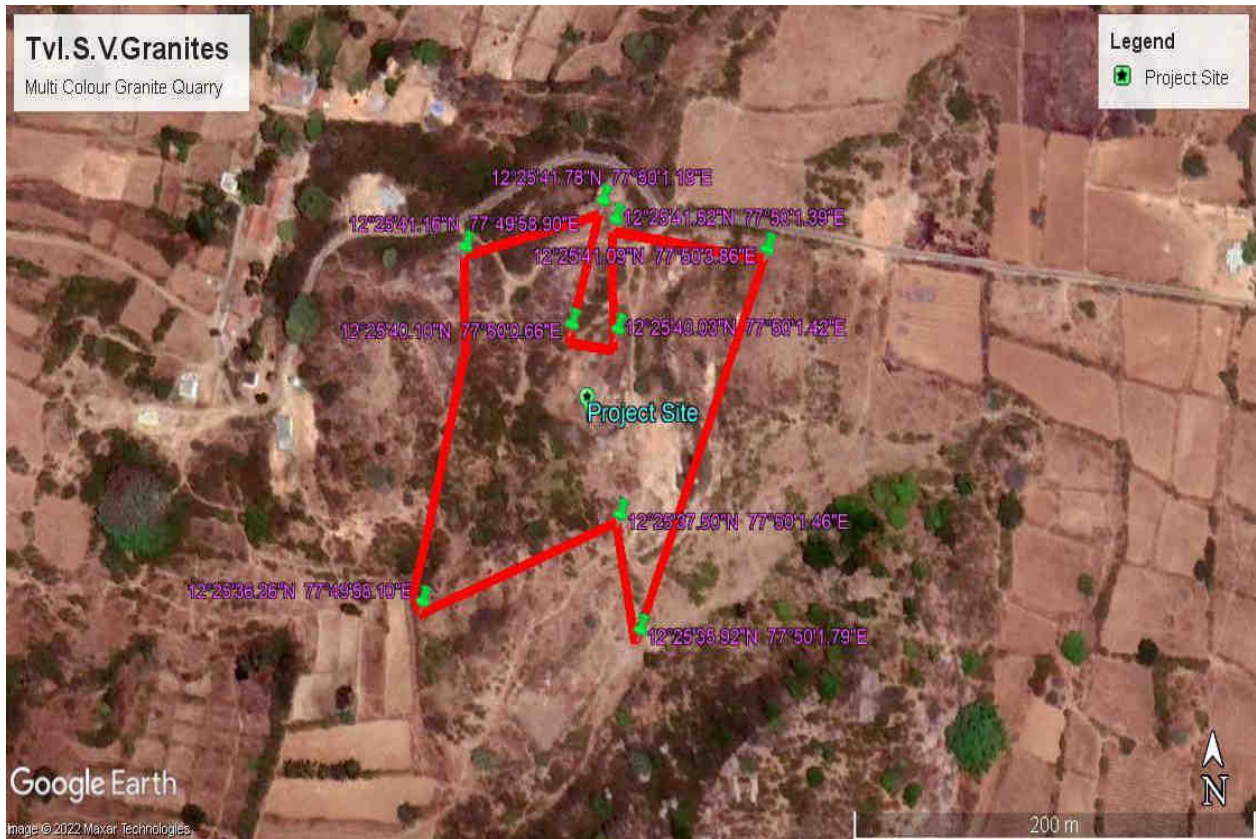


Figure 2: Google Image of the Project Site

4. Multi Colour Granite

The Multi Colour Granite and granite gneiss is mainly composed of medium to fine grained with feldspar and quartz are main constituents, garnet and other mafic minerals are secondary minerals. It has commercially called as 'Paradiso' which is widely used for Slabs, Tiles and Monuments after cutting and polishing.

5. Geological Resources

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

Table 2. Geological resources

GRANITE GEOLOGICAL RESERVES										
Secti on	Benc h	Leng th in (m)	Widt h in (m)	De pth in (m)	Volum e in M3	Total Reser ve in M3	Granit e Waste @ 40%	Multi- Colour Granite Recov er able	Weather ed Granite	Topsoil

								Reserve @ 60%		
XY- AB	I	55	57	1						3135
	II	55	57	2					6270	
	III	55	57	5	15675	1567 5	6270	9405		
	IV	55	57	5	15675	1567 5	6270	9405		
	V	55	57	5	15675	1567 5	6270	9405		
	VI	55	57	5	15675	1567 5	6270	9405		
	VII	55	57	5	15675	1567 5	6270	9405		
	TOTAL				78375	7837 5	31350	47025	6270	3135
XY- EF	I	89	69	1						6141
	II	89	69	2					12282	
	III	38	69	5	13110	1311 0	5244	7866		
	IV	89	69	5	30705	3070 5	12282	18423		
	V	89	69	5	30705	3070 5	12282	18423		
	VI	89	69	5	30705	3070 5	12282	18423		
	VII	89	69	5	30705	3070 5	12282	18423		
	TOTAL				135930	1359 30	54372	81558	12282	6141
X1Y 1-CD	I	59	66	1						3894
	II	59	66	2					7788	
	III	43	14	5	3010	3010	1204	1806		
	IV	59	41	5	12095	1209 5	4838	7257		
	V	59	66	5	19470	1947 0	7788	11682		

	VI	59	66	5	19470	19470	7788	11682		
	VII	59	66	5	19470	19470	7788	11682		
	VIII	59	66	5	19470	19470	7788	11682		
	IX	59	66	5	19470	19470	7788	11682		
	TOTAL				112455	112455	44982	67473	7788	3894
X1Y 1-EF	I	110	57	1						6270
	II	110	57	2					12540	
	III	60	45	5	13500	13500	5400	8100		
	IV	110	57	5	31350	31350	12540	18810		
	V	110	57	5	31350	31350	12540	18810		
	VI	110	57	5	31350	31350	12540	18810		
	VII	110	57	5	31350	31350	12540	18810		
	VIII	110	57	5	31350	31350	12540	18810		
	TOTAL				170250	170250	68100	102150	12540	6270
GRAND TOTAL				497010	497010	198804	298206	38880	19440	

Table 3. Mineable Resources

GRANITE MINEABLE RESERVES										
Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in M3	Total Reserve in M3	Granite Waste @ 40%	Multi Colour Granite Recoverable Reserve @ 60%	Weathered Granite	Tops oil
XY-AB	I	47	36	1						1692
	II	45	34	2					3060	
	III	43	30	5	6450	6450	2580	3870		
	IV	38	20	5	3800	3800	1520	2280		
	V	33	10	5	1650	1650	660	990		
	VI	28	1	5	140	140	56	84		
	VII	23	1	5	115	115	46	69		
	TOTAL					12155	12155	4862	7293	3060
XY-EF	I	80	61	1						4880
	II	79	60	2					9480	
	III	38	57	5	10830	10830	4332	6498		
	IV	77	52	5	20020	20020	8008	12012		
	V	72	47	5	16920	16920	6768	10152		
	VI	67	42	5	14070	14070	5628	8442		
	VII	62	37	5	11470	11470	4588	6882		
	TOTAL					73310	73310	29324	43986	9480
X1Y1-CD	I	52	46	1						2392
	II	52	44	2					4576	

	III	43	7	5	1505	1505	602	903		
	IV	43	23	5	4945	4945	1978	2967		
	V	38	29	5	5510	5510	2204	3306		
	VI	33	19	5	3135	3135	1254	1881		
	VII	28	9	5	1260	1260	504	756		
	VIII	23	1	5	115	115	46	69		
	IX	18	1	5	90	90	36	54		
	TOTAL				16560	16560	6624	9936	4576	2392
X1Y 1-EF	I	73	49	1						3577
	II	72	48	2					6912	
	III	60	34	5	10200	10200	4080	6120		
	IV	64	41	5	13120	13120	5248	7872		
	V	59	36	5	10620	10620	4248	6372		
	VI	54	31	5	8370	8370	3348	5022		
	VII	49	26	5	6370	6370	2548	3822		
	VIII	44	21	5	4620	4620	1848	2772		
	TOTAL				53300	53300	21320	31980	6912	3577
GRAND TOTAL				155325	155325	62130	93195	24028	12541	

Table 4. Year wise Production Plan

GRANITE YEARWISE DEVELOPMENT AND PRODUCTION RESERVES											
Year	Section	Ben ch	Len gth in (m)	Wi dth in (m)	De pth in (m)	Volu me in M3	Tota l Rese rve	Gra nite Was te @ 40%	Multi Colour Granite Recove rable	Weath ered Granit e	Tops oil

							in M3		Reserve @ 60%		
I YE AR	X1Y1- AB	I	60	46	1						2760
		II	57	44	2					5016	
		III	53	7	5	1855	1855	742	1113		
		IV	43	23	5	4945	4945	1978	2967		
		TOTAL				6800	6800	2720	4080	5016	2760
II YE AR	X1Y1- CD	I	40	49	1						1960
		II	40	46	2					3680	
		IV	45	34	5	7650	7650	3060	4590		
		TOTAL				7650	7650	3060	4590	3680	1960
III YE AR	X1Y1- CD	V	45	32	5	7200	7200	2880	4320		
		TOTAL				7200	7200	2880	4320		
IV YE AR	X1Y1- AB	V	33	29	5	4785	4785	1914	2871		
		VI	23	19	5	2185	2185	874	1311		
		TOTAL				6970	6970	2788	4182		
V YE AR	X1Y1- CD	VI	45	22	5	4950	4950	1980	2970		
		TOTAL				4950	4950	1980	2970		
		GRAND TOTAL				3357 0	3357 0	1342 8	20142	8696	4720

6. Mining

Opencast mining

The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 5.0 meter vertical bench with a bench width of 5.0 meter. The Quarry operation involves Diamond wire saw cutting, loading and transportation.

Process Description

The proposed mining is planned to be carried out by open cast-semi mechanized method of mining, in this proposed mining area by using compressor operated jack hammer drills, excavators and dumpers etc.

Hydraulic excavator will be used to remove the over burden, Shifting of Blocks and waste removal etc. Compressor operated jack hammers will be used to drill the holes as preparatory work before cutting the Block by using Wire saw.

The diamond wire saw has many advantages to its credit such as

- 1) Reduced Consumption of Explosives.
- 2) Reduced noise level
- 3) Reduced Loss of material
- 4) Simple to use and saves squaring operation.

7. Water Requirement

Total water requirement for the mining project is 3 KLD. Domestic water will be sourced from nearby Irudukottai Village and other water will be source from nearby road tankers supply.

Table 5. Water Balance

Purpose	Quantity	Source
Domestic & Flushing	1.0 KLD	Packaged Drinking water vendors available in Irudukottai Village which is about \approx 3.02 km on North side of the area.
Green belt	1.0 KLD	Other domestic activities through road tankers supply
Dust suppression	1.0 KLD	From road tankers supply
Total	3.0 KLD	

8. Man Power and Organization Chart

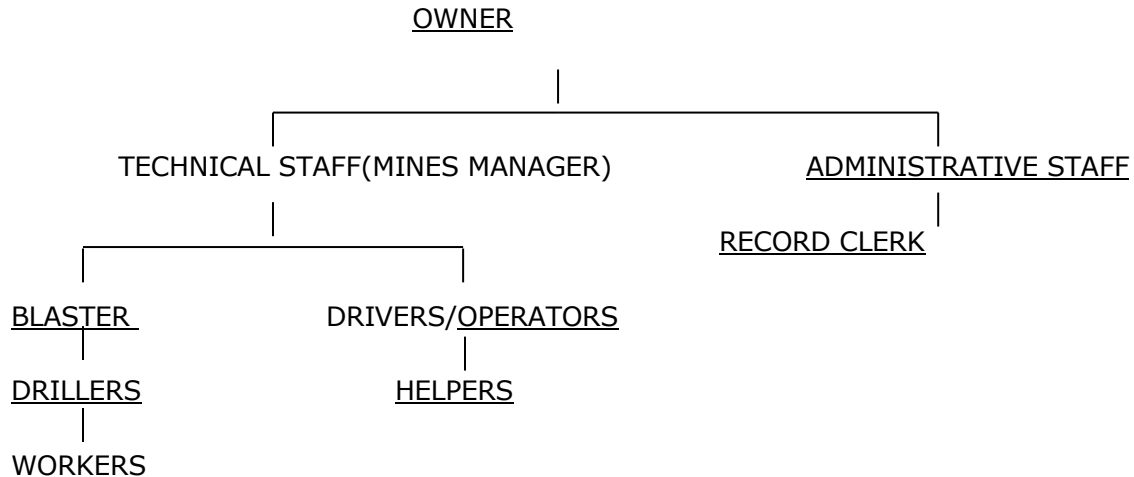
Total manpower required for the project is approximately 18 persons. Workers will be from nearby villages.

Table 6. Man Power

S.No.	Name of the Employment	No. of Employees
1.	Project Manager	1 No.
2.	Record Clerk	1 No.
3.	Skilled	
	Supervisor Cum Blaster	1 No.
	Compressor and Wagon Drill operators	2 No.
	Drillers /Workers	6 No.
	Excavator / Rock Breaker Operators	2 No.
	Vehicle Drivers	1 No.
4.	Semi – skilled	
	Watchman	1No.
5.	Unskilled	
	Cleaner	3 Nos.
	Total	18 Nos.

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

ORGANISATION CHART



9. Solid Waste Management

Table 7. Solid Waste Management

S. No	Type	Quantity	Disposal Method
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1	Organic	4.86 kg/day	Municipal bin including food waste
2	Inorganic	3.24 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 quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
Nil				

2) Abandoned/Old quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
Nil				

3) Details of Proposed/Applied quarries:

S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
1.	M/s S.V.Grannites No. 17B-3, 1 st Cross Street, vellakuttai, Krishnagiri	Denkanikottai Taluka- Irudhukottai Village	1124/7(P) 1130/7(P) 1131/7, 1131/8	1.91.5	20

2.	M/s K.P.R.Granites, No 2/223, Avvai Nagar, Noolahalli, Pennagaram, Krishnagiri	Denkanikottai Taluka- Irudhukottai Village	1123/4A, 4B, 5A, 5B, 6A, 6B, 1125/6, 1123/8(P)	2.34.3	--
3.	M/s K.P.R.Granites, No 2/223, Avvai Nagar, Noolahalli, Pennagaram, Krishnagiri	Denkanikottai Taluka- Irudhukottai Village	1121/6, 1125/3	1.97.0	--
				6.22.8	

The Total extent of the Existing / Lease expired / Proposed quarries are 6.22.8 Ha

10. Land Requirement

The total extent area of the project is 1.91.50 Ha, Patta land in Irudukottai Village of Denkanikottai taluk, Krishnagiri District.

Table 9. Land Use Breakup

Description	Present Area (Ha.)	Area to be required at the present scheme period (Ha)	End of life of Quarrying Period (Ha.)
Area under Quarry	0.00.9	0.48.0	1.18.0
Dumps	Nil	0.31.5	Backfilling
Stockyard	Nil	Nil	Nil
Infrastructure	Nil	0.01.0	0.02.0
Roads	0.03.0	0.01.0	0.04.0
Green Belt	Nil	0.17.0	0.67.5

Unutilized Area	1.87.6	0.93.0	Nil
Grand Total	1.91.5	1.91.5	1.91.5

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

Direction	Village	Distance in Kms	Population
North	Santhanapalli	4.5	1200
East	Namreli	2.1	480
South	Bialam	1.5	250
West	Bikkanapalli	4.3	390

12. Power Requirement

The proposed granite building stone quarrying does not required any power supply for the quarrying operation.16 Litres diesel per hour required for excavator whenever 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 : 26.3 °C
- ii) Average Maximum Temperature. : 40 °C
- iii) Average Annual Rainfall of the area : 806 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 (51(µg/m³), PM 2.5(30 (µg/m³), SO_x 13 (µg/m³) ,NO_x (27(µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from Aug to Oct, 2022

13.3 Noise Environment

Ambient noise levels were measured at 5 locations around the proposed project site. The noise level during day varies from 44-58 dB(A) and during night varies between 37-44 dB(A).

13.4 Water Environment

- The average pH ranges from 6.68-7.88
- TDS value varied from 491 mg/l to 969 mg/l
- Hardness varied from 225 to 596 mg/l
- Chloride varied from 32.3 to 133 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 6.1 to 7.78 with organic matter 0.08 % to 1.07 %. 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 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 will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 60 trees per annum with interval 5m.
4. The rate of survival expected to be 70% in this area

Table 11 Plantation/ Afforestation Program

Year	No. of trees proposed to be planted	Name of the species	Survival rate expected in %	No. of trees expected to be grown
I	60	Neem	70	42
II	60	Neem	70	42

III	60	Neem	70	42
IV	60	Neem	70	42
V	60	Neem	70	42

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.1,28,95,000** 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	29,90,000
2	Operational Cost	95,00,000
3	EMP Cost	4,05,000
	Total	1,28,95,000

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 (Rs.)
1.	Government High School, Unisetty, Krishnagiri District Activity: Provision of ➤ Solar powered Smart Classroom, ➤ Solar lights to the School, ➤ Environmental Awareness related books to the school library, ➤ Basic amenities such as safe Drinking Water, Hygienic Toilet facilities. ➤ Greenbelt development in and around the school	6,00,000

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.