Executive Summary for Conducting Public Hearing of

Thiru C. Selvan Rough stone Quarry over an Extent - 3.35.0 Ha

at

S.F. No. 63/2(P) in Bargur Village, Bargur Taluk, Krishnagiri District and Tamil Nadu

Sector No. 1(a) (Sector No. 1 as per NABET)

Category of the Project: B1 Cluster Mining

Environmental Consultant & Laboratory details:

Ecotech Labs Pvt Ltd,

No 48, 2nd Main road,
South extension Ram nagar,
Pallikaranai, Chennai -600100.

Proponent details:

Thiru.C. Selvan,
S/O. Chinnamaadhu,
No.4/268,
Kumbalapadi, Indur, Nagar
Koodal Village,
Dharmapuri - 636 803
.

EXECUTIVE SUMMARY

1. Project Background:

The Rough stone Quarry project of Thiru C. Selvan is situated at 63/2(P) in Bargur Village, Bargur Taluk, Krishangiri District and Tamil Nadu over an extent of 3.35.0 hectares in Government Poromboke Lands for a period of 5 years.. The proposed project has been accorded with Terms of Reference from SEIAA, Tamil nadu vide Letter No. SEIAA – TN/F.No.8529/SEAC/ToR-993/2021 dated 28.07.2021. The project proponent possesses working lease for mine lease area 3.35.0 Ha for the period of 5 years from the District Collector, Krishnagiri.

The mining plan approval letter issued by The Deputy Director of Geology and Mining, Krishnagiri through letter Roc. No. 221/2019/mines dt. 06.09.2019. The copy of LOI, which enclosed in Annexure–I. The Precise Area Communication Letter No. ROC. No. 211/2019/Mines dated 13.06.2019 issued by District Collector, Krishnagiri.

The quarry operation is proposed to carry out with conventional open cast semi-mechanized mining with a bench height of 7m and bench width of 5m. The quarry operation is proposed up to depth of 43m. The Total Geological reserve is about 1790278M^3 of rough stone. The Mineable Reserves and the Proposed production for five years is 799240 M^3.

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 Wild life protection Act 1972, within the radius of 15km.

2. Nature and Size of the project:

The Rough Stone Quarry over an extent of 3.35.0 Hectares land is located Bargur Village of Bargur Taluk, Krishnagiri District.

Mineral intends to quarry	: Rough stone
District	: Krishnagiri
Taluk	: Bargur
Village	: Bargur
S. F. Nos.	: 63/2 (p)
Extent	: 3.35.0 Hectares

Table 1: Brief Description of the Project

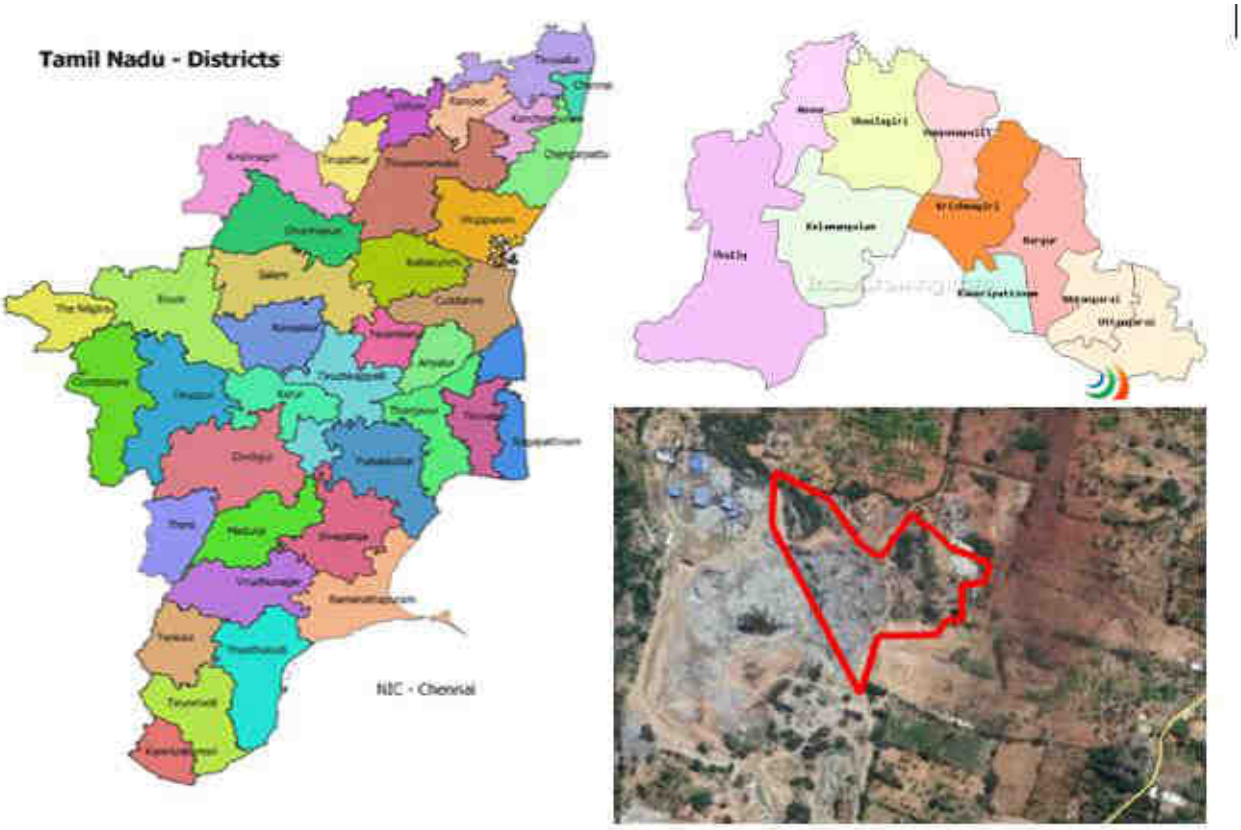
S. No	Particulars	Details
1	Latitude	12° 33' 21.83"N to 12° 33' 31.00"N
2	Longitude	78° 21' 43.58"E to 78° 21' 53.65"E
3	Site Elevation above MSL	493m above MSL
4	Topography	Plain Terrain
5	Land use of the site	Government Poromboke land
6	Extent of lease area	3.35.0 Ha
7	Nearest highway	NH 46 (1km, S)
8	Nearest railway station	Jolarpet (25 km, E)
9	Nearest airport	Bangalore – 112 km
10	Nearest town / city	Town - Burgur – 1 km, S District – Krishnagiri– 16 km, W
11	Rivers / Canal/Lake	❖ Orappam Lake – 10km, SW ❖ Marudapalli Lake – 11 km, SW
12	Reserved Forest / Wild life Sanctuary	➢ Burgur RF -2 km E ➢ Neralakotta RF -2 km N ➢ Varatanapalli RF -4 km W ➢ Nandibanda RF -5 km, NE ➢ Kothur RF - 6km, NNE
13	Seismic Zone	Zone – II [as per IS 1893 (Part-I): 2002]
14	Total Project Cost	Rs. 67,50,000/-

3. Need for the Project

Rough stone is one of the most valuable natural building materials. Aggregates are mostly used for building roads and footpaths Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction. Mostly used in roads, concrete and building products. Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of

asphalt; the remainder is used 'dry' without the addition of other materials to provide a sturdy base for roads.

Krishnagiri District is covered with wide range of metamorphic rocks of peninsular gnessic complex. These rock formations occur as massive hillocks all over the district in government lands and patta lands, and extensively weathered formations are overlained by soil / alluvium deposits with an average thickness of 1 to 5mts. Rough stone deposits suitable for the production of Jelly, cut stones and Pillar Stones are available throughout the Krishnagiri District. Rough stones are widely used in this district as building stones, boulders, cut stones and for the production of Jelly, M.Sand, Crusher Dust. The rock products which are produced not only used in the Krishnagiri District alone but also transported to the neighboring districts. These products enter into the market in different parts of the country.



Location of the project site

Google Image of the Project Site

4. Geological Reserves

Table 2. Geological resources

GEOLOGICAL RESERVES								
Section	Bench	L(m)	W (m)	D (m)	Volume In M3	Reserves in m3 @ 95%	Mine waste in m3 @ 5%	Top Soil in m3
XY-AB	I	114	82	1				9348
	II	114	82	7	65436	62164	3272	
	III	114	82	7	65436	62164	3272	
	IV	114	82	7	65436	62164	3272	
	V	114	82	7	65436	62164	3272	
	VI	114	82	7	65436	62164	3272	
	VII	114	82	7	65436	62164	3272	
	VIII	114	82	7	65436	62164	3272	
	IX	114	82	7	65436	62164	3272	
TOTAL					**523488**	**497312**	**26176**	**9348**
XY-CD	I	15	1	1				15
	II	15	1	7	105	100	5	
	III	15	1	7	105	100	5	
	IV	135	86	7	81270	77207	4063	
	V	135	86	7	81270	77207	4063	
	VI	135	86	7	81270	77207	4063	

	VII	135	86	7	81270	77207	4063	
	VIII	135	86	7	81270	77207	4063	
	IX	135	86	7	81270	77207	4063	
TOTAL					**487830**	**463442**	**24388**	**15**
X1Y1-CD	I	130	107	1				13910
	II	130	107	7	97370	92502	4868	
	III	130	107	7	97370	92502	4868	
	IV	130	107	7	97370	92502	4868	
	V	130	107	7	97370	92502	4868	
	VI	130	107	7	97370	92502	4868	
	VII	130	107	7	97370	92502	4868	
	VIII	130	107	7	97370	92502	4868	
	IX	130	107	7	97370	92502	4868	
TOTAL					**778960**	**740016**	**38944**	**13910**
GRAND TOTAL					**1790278**	**1700770**	**89508**	**23273**

5. Mineable Resources

Table 3 : Mineable Reserves

MINEABLE RESERVES								
Section	Bench	L(m)	W(m)	D(m)	Volume In M3	Mineable Rough stone Reserves in m3 @ 95%	Mine waste in m3 @ 5%	Top Soil in m3
XY-AB	I	107	75	1				8025
	II	106	74	7	54908	52163	2745	
	III	101	69	7	48783	46344	2439	
	IV	96	64	7	43008	40858	2150	
	V	91	59	7	37583	35704	1879	
	VI	86	54	7	32508	30883	1625	
	VII	81	49	7	27783	26394	1389	
TOTAL					**244573**	**232346**	**12277**	**8025**
XY-CD	IV	120	86	7	72240	68628	3612	
	V	115	86	7	69230	65769	3461	
	VI	110	86	7	66220	62909	3311	
	VII	105	86	7	63210	60050	3160	
TOTAL					**270900**	**257356**	**13544**	
X1Y1-	I	115	100	1				11500

CD	II	113	99	7	78309	74394	3915	
	III	103	94	7	67774	64385	3389	
	IV	93	89	7	57939	55042	2897	
	V	83	84	7	48804	46364	2440	
	VI	73	79	7	40369	38351	2018	
	VII	63	74	7	32634	31002	1632	
TOTAL					**325829**	**309538**	**16291**	**11500**
GRAND TOTAL					**841302**	**799240**	**42062**	**19525**

6. Year wise production

Table 4 : Year wise Production

YEARWISE DEVELOPMENT AND PRODUCTION								
Section	Bench	L (m)	W (m)	D (m)	Volume In M3	Rough stone Reserves in m3 @ 95%	Mine waste in m3 @ 5%	Top Soil in m3
I YEAR	I	107	75	1				8025
	II	106	74	7	54908	52163	2745	
	III	101	69	7	48783	46344	2439	
	I	115	100	1				11500
	II	113	99	7	78309	74394	3915	
	III	103	94	7	67774	64385	3389	
TOTAL					**249774**	**237286**	**12488**	**19525**
II YEAR	IV	96	64	7	43008	40858	2150	
	IV	120	86	7	72240	68628	3612	
	IV	93	89	7	57939	55042	2897	
TOTAL					**173187**	**164528**	**8659**	
III YEAR	V	91	59	7	37583	35704	1879	
	V	115	86	7	69230	65769	3461	
	V	83	84	7	48804	46364	2440	
TOTAL					**155617**	**147837**	**7780**	
IV YEAR	VI	86	54	7	32508	30883	1625	
	VI	110	86	7	66220	62909	3311	
	VI	73	79	7	40369	38351	2018	
TOTAL					**139097**	**132143**	**6954**	
V YEA	VII	81	49	7	27783	26394	1389	
	VII	105	86	7	63210	60050	3160	

R	VII	63	74	7	32634	31002	1632	
TOTAL					**123627**	**117446**	**6181**	
GRAND TOTAL					**841302**	**799240**	**42062**	**19525**

7. Topography:

The area applied for quarry lease is almost plain area sloping towards southern covered with Rough Stone which does not sustain any type of vegetation. The altitude of the area is 493m above MSL. No major river is found nearby the lease area.

8. Opencast Mines - Salient Features of Mode of working-:

Opencast method of semi mechanized mining is adopted to extract Rough Stone. Machineries like Tractor mounted compressor attached with Jack hammers is being used to drilling and Proposed Control Blasting. Excavators are operated for quarrying of Rough Stone and Tippers / Lorries are used for transportation of Rough Stone to the destination.

9. Top Soil

This area is covered 1.0m Top Soil in this mine area 19525m3. Topsoil formation will be removed and dumped in North, East and Southern side of the 7.5m Boundary Barrier of the lease area. And Party used for Plantation Purposes.

Proposed Dump Dimensions:
(664.4m(L)X7.5m(W)X3.91m(H)=19525m^3)

10. Water Requirement

Table 5: Water Requirement

Purpose	**Quantity**	**Sources**
Drinking Water	0.5KLD	Packaged Drinking water vendors available in Emakalnatham which is about 1.0 Km North 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	**2.5 KLD**	

11. Land Use Pattern Details

The details of land area indicating the area likely to be degraded due to mining will be as under: -

Table 6: Land use Pattern

Sl. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1.	Area under quarrying	1.08.0	2.86.0
2.	Infrastructure	Nil	0.01.0
3.	Roads	0.01.0	0.01.0
4.	Green Belt	Nil	0.47.0
5.	Unutilized	2.26.0	Nil
	Total =	**3.35.0Ha**	**3.35.0Ha**

12. Manpower:

The total number of employees including skilled and un-skilled workers is 13which include workers for mine and ancillary unit. The details of the staff and workmen employed in the mine are given below:-

Table 7: Team of Quarry Operation

1.	Skilled	Operator	2 No.
		Mechanic	1 No.
		Blaster/Mat	1 No.
2.	Semi – skilled	Driver	2 Nos
3.	Unskilled	Musdoor / Labours	5 Nos
		Cleaners	3Nos
		Office Boy	1No
4.	Management & Supervisory staff		3No.
	Total =		18Nos

13. Solid Waste Management

Table 8 Solid Waste Management

S. No	Type	Quantity	Disposal Method

1	Organic	3.96 kg/day	Municipal bin including food waste
2	Inorganic	5.94 kg/day	TNPCB authorized recyclers

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

Table 9: Quarry within 500m Radius

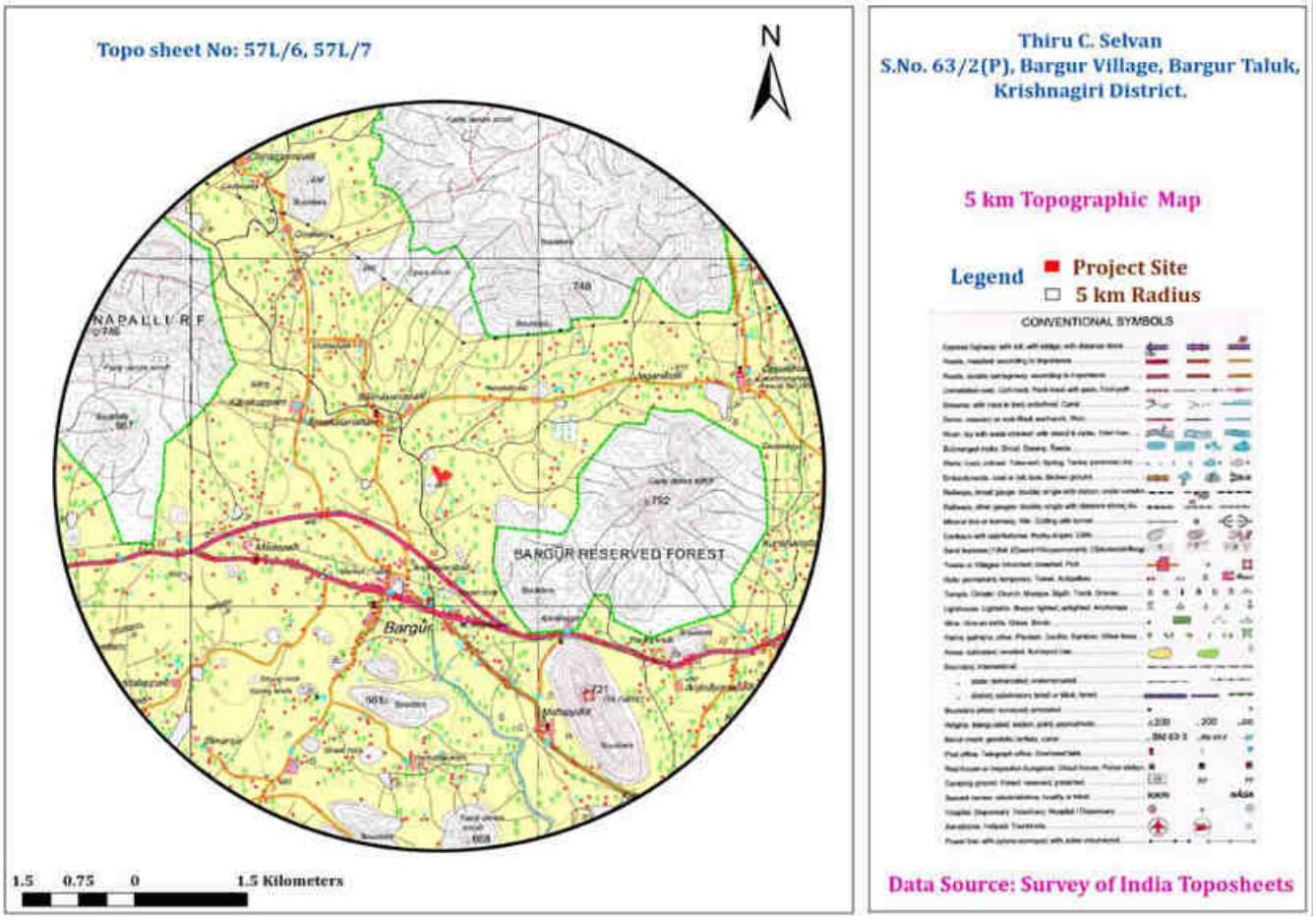
S. No.	Quarry detail	Village	S.F No	Extent (Ha)	G.O. No. & Date	Lease period
I. Existing Quarry						
1	Thiru N. Arumugam, S/o. Nallamuthu, D.No. 345 East Street, Maruvathur peralli (South), Perambalur District.	Bargur Village	63 (part – B)	4.44.0	Roc. No. 174/2018/Mines dated 27.11.2018	27.11.2018 to 26.11.2028
II. Abandoned Quarry						
NIL						
III. Proposed Quarry						
5	Thiru C. Selvam, S/o. Chinnamadhu, D.No. 4/268 Kumbalapadi Village,indur Post, Dharmapuri Dt.	Bargur	63/2 (Part)	3.35.0	Roc. No. 211/ 2019/mines Dt. 13.06.2019	Instant Proposal
Total				**7.79.0**		

13. Scope of the Baseline Study

The 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 : 19 ^{0}C

ii) Average Maximum Temperature. : 38 ^{0}C

iii) Average Annual Rainfall of the area : 616 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 10km radius, air quality survey has been conducted at 6 locations over a period of June - August 2021. Major air pollutants like, Particulate Matter (PM_{10}), Sulphur Dioxide (SO_2), NitrogenDioxide (NO_2) were monitored and the results are summarized below,

The baseline levels of PM10 (50-71 µg/m³), PM2.5 (20-29 µg/m³), SO_2 (5-10 µg/m³), NO2 (14 -24 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from June - August 2021.

13.3 Noise Environment

Ambient noise levels were measured at 6 locations around the proposed project site. Noise level varies from 45.0 to 54 dB(A) during day time and 35-44 dB(A) during night time. Maximum noise level were recorded at both project site and Gandhinagar (54 dBA) during day time.

13.4 Water Environment

During the study period ground water samples were collected at 6 locations

The analysis results indicate that the pH ranged between 7.1 to 7.7, which are well within the specified standard of 7.3 to 8.0 limit. Total hardness was recorded to range from 440 to 720 mg/l, which is within the permissible limit 600 mg/l at all locations. The Total Dissolved Solids (TDS) concentration recorded ranged between 923 to 1495 mg/l and was within the permissible limits (2000 mg/l) at all locations.

13.5 Land Environment

- pH is 7.32 which indicates soil is neutral.
- EC of soil is 0.013 mS/cm
- Organic matter in soil is 0.89%, The concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

13.6 Biological Environment

The Mining lease area is plain terrain and species observed in the study area, there is no extinct flora and fauna species found in the study area.

13.7 Socio Economic Environment

Krishnagiri district is bounded by Vellore and Tiruvannamalai districts in the East, Karnataka state in the west, State of Andhra Pradesh in the North Dharmapuri District in the south. Its area is 5143 Sq. Kms. This district is elevated from 300m to 1400m above the mean sea level. It is located between 11º 12'N to 12º 49'N Latitude,77º 27'E to 78º 38'E Longitude.

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 around 500m radius. Hence the mining activity does not involve any displacement of human settlement.

15. Greenbelt Development

- The development of greenbelt will be done in the peripheral buffer zone of the mine area.
- 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.
- Local trees like, Elamji, Vettithali and Poovam etc will be planted along the south side lease boundary and avenues as well as over Non-active dumps at a rate of 45 trees per annum with interval 5m .
- The rate of survival expected to be 80% in this area.

16. Anticipated Environmental Impacts

16.1 Air Environment and Mitigation Measures

- Water sprinkling will be done on the roads & unpaved roads.
- Proper mitigation measures like water sprinkling will be adopted to control dust emissions.
- Plantation will be carried out on approach roads & nearby mine premises.
- To control the emissions regular preventive maintenance of equipments will be carried out.

16.2 Noise Environment and Mitigation Measures

- Periodical monitoring of ambient noise will be done as per CPCB guidelines.
- No other equipment except the transportation vehicles and excavator for loading will be allowed.
- 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 Central Pollution Control Board (CPCB), shall be maintained.

19. Project Cost

The total project cost is **Rs.67, 50,000/-** including land cost and deployment of machinery and creation of infrastructural facilities like approach road, Mine office / Workers Shed, First Aid Room etc, electrifications and water supply.

Table 10: Project Cost

S.No.	**Description**	**Cost (Rs)**
1.	Land Cost	44,00,000
2.	Operational cost	20,00,000
3.	EMP Cost (Drinking water facility for Labourer, Safety kits, Water sprinkling, Afforestation, Plantation & Maintenance)	3,50,000
Total		67,50,000

20. Corporate Social Responsibility

The following Corporate Environment Responsibility (CER) activities before the commencement of the quarrying activities.

Table 11: Corporate Environment Responsibility

S.No.	**CER Activity**	**CER 2% of the project cost (Rs in Crores)**
1.	Developing the library, sports/Drinking water facilities in nearby school	1,35, 000
Total		**Rs. 1,35,000**

21. Benefits of the Project

- There is 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 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.