PRE-FEASIBILITY REPORT

1.0 EXECUTIVE SUMMARY

S.No.	Information	Details
1.	Project name	Sand Mining Project of Edaramhatu, Somadih and Dibadih Balu Balu Ghat on Khasra no- 216,736,775 & 556 of River Kanchi
2.	Mining Lease Area	49.0 Ha or 121.12 Acres
3.	Location of mine	Edaramhatu, Somadih and Dibadih Balu Balu Ghat on River Kanchi
	Village	Mauza- Edaramhatu, Somadih and Dibadih
	Anchal:	Sonahatu
	District :	Ranchi
	State :	Jharkhand
4.	Coordinates	**Somadih Balu Ghat:-** Latitude:- 23°13’5.55” N to 23°13’41.01” N Longitude: 85°47’51.77” E to 85°48’28.24” E **Edaramhatu Balu Ghat:-** Latitude:- 23°12’25.84” N to 23°12’45.99” N Longitude:- 85°46’53.53” E to 85°47’15.63” E **Dibadih Balu Ghat:-** Latitude:- 23°13’36.92” N to 23°14’6.36” N Longitude:- 85°48’28.36” E to 85°49’4.04” E River Kanchi, Edaramhatu, Somadih and Dibadih Balu Ghat
6.	River/Nalla/Nadi	River Kanchi
7.	Minerals of mine	Sand
8.	Proposed Production	900000 Cubic meter or 1620000 Tonnes Annually
09.	Method of mining	Manual
10.	Drilling or Blasting	No
11.	No of working days	260 days
12.	Water demand	Domestic Water : 5.0 KLD
		Dust Suppression : 9.0 KLD
		Green Belt Development : 9.0 KLD

		Total Water Requirement: 23.0 KLD
13.	Man Power	100-150
14.	Nearest railway station	Torang railway Station approx. 9 Km towards North East.
15.	Nearest state highway/national highway	National Highway-33, Approx. 20 km towards West .
16.	Nearest air port	Ranchi Airport, approx. 49 km towards NW.

2. INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

2.1 Identification of Project and Project Proponent

- Name of the Project: Sand Mining Project of Edaramhatu, Somadih and Dibadih Balu Ghat on River Kanchi
- Location of the Project: Khasra no-216,736,775 & 556, Mauza - Edaramhatu, Somadih and Dibadih, Anchal- Sonahatu, District- Ranchi, State Jharkhand. Area 49.0 Ha or 121.12 Acres.

2.2 Name and address of the Project Proponent:

Shri Sandeep Chandak

S/o Shri Madanlal Chandak

Village- 203 G, Block- Shriganganagar, Rajasthan, District- Rajasthan

2.3 Brief description of nature of the project

The project is open cast mining of minor mineral in the form of Sand. About 900000 Cubic meter or 1620000 Tonnes Annually. Entire process will be manual operation.

The project has been proposed by Shri Sandeep Chandak, The project proponent had obtained a lease for 3 years over an area 49.0 Ha or 121.12 Acres Mauza - Edaramhatu, Somadih and Dibadih, Anchal- Sonahatu , District- Ranchi, State Jharkhand.

2.4 Need for the Project and Its Importance to the Country or Region

Sand is used widely in the construction industry. It is usually mixed with cement and other ingredients to create mortar for building. It is also used in agriculture, as sandy soils are ideal for crops such as watermelons, peaches and peanuts. Sand is also used in Aquaria as it makes a low cost aquarium base material.

2.4 Demands-Supply Gap

Building huge infrastructure as being envisaged by Government of Jharkhand and India particularly in road and housing sector requires basic building raw materials. Thus the demand for Sand is ever growing with the growth of the infrastructure sector in our country. The requirement for the mineral is always high in the nearby cities and towns. Therefore there is always a good demand of the mineral in the domestic market.

2.5 Imports vs. Indigenous Production

The demand in the domestic market is high for Sand. Mineral is available in abundant quantity in allotted area and can be excavated indigenously.

2.6 Export Possibility

There is no proposal to export the mineral as the minerals excavated, cater the indigenous demand and the development is a never ending process.

2.7 Domestic/ Export Markets

DOMESTIC MARKET

There is always an ever increasing demand of these minerals in the domestic market.

EXPORT MARKET

The proposed mining activity is for indigenous consumption only for real state, road making etc. So no export will be envisaged.

2.8 Employment Generation (Direct and indirect) due to the project

The total direct manpower requirement for the proposed mining operation will be around 100-150. Indirect employment is also expected due to the associated activities.

3 PROJECT DESCRIPTION

3.1 Type of Project Including Interlinked and Interdependent Projects, If Any.

The proposed project for excavation of Sand is an independent project in which minerals excavated will be directly sold in the local markets.

3.2 Location

The mining lease area is located at Edaramhatu, Somadih and Dibadih Balu Ghat on River Kanchi of Area: 49.0 Ha or 121.12 Acres at Mauza- Edaramhatu, Somadih and Dibadih, Anchal- Sonahatu, District- Ranchi, State Jharkhand.

The co- ordinates of the mine lease area are:

KANCHI RIVER (Mauza- Somadih)

PILLAR NO	COORDINATE	RIVER NAME
A	23°13’5.55” N 85°47’51.77” E	KANCHI
B	23°13’5.43” N 85°47’57.73” E	
C	23°13’37.62” N 85°48’30.90” E	
D	23°13’41.01” N 85°48’28.24” E	

KANCHI RIVER (Mauza- Edaramhatu)

PILLAR NO	COORDINATE	RIVER NAME
A	23°12’25.84” N 85°46’53.53” E	KANCHI
B	23°12’24.74” N 85°46’56.33” E	
C	23°12’41.92” N 85°47’15.92” E	
D	23°12’45.99” N 85°47’15.63” E	

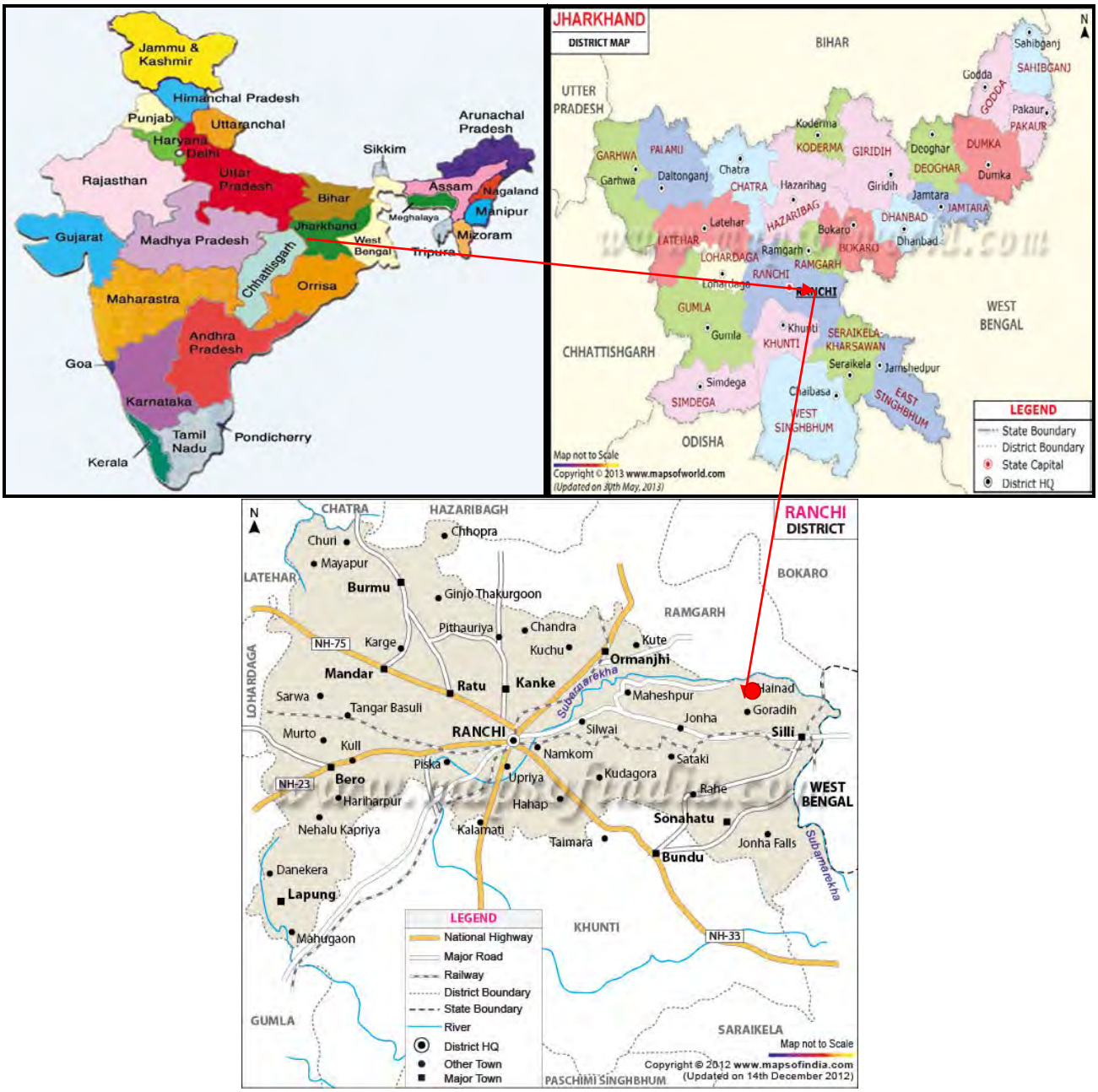
KANCHI RIVER (Mauza- Dibadih)

PILLAR NO	COORDINATE	RIVER NAME
A	23°13’36.92” N 85°48’28.36” E	KANCHI
B	23°13’40.08” N 85°48’28.06” E	
C	23°13’31.49” N 85°48’46.73” E	
D	23°13’27.84” N 85°48’42.35” E	
E	23°13’38.60” N 85°49’2.68” E	

F	23°13’37.72” N 85°49’6.91” E	KANCHI
G	23°14’6.16” N 85°48’57.77” E	
H	23°14’6.36” N 85°49’4.04” E	

Khasra map as Annexure II, Buffer map of 1km radius Google map as Annexure III, and 10 KM Topomap showing project site as Annexure IV is attached in this regards.

The vicinity map of the mine location is given below:



3.3 Details of alternate sites considered and the basis of selecting the proposed site, particularly the environment considerations gone into should be highlighted.

Mineral is site specific as well as the lease has been allotted in the particular area. Hence no alternative site is examined for mining. The land has been allocated by government for the mining only. As there is potential of Sand in large amount, so the mining will help to use a resource for beneficial purposes.

3.4 Size or magnitude of operation

The proposed mine has lease over an area of 49.0 Ha or 121.12 Acres The maximum rated capacity of the project will 900000 Cubic meter or 1620000 Tonnes Annually, which will be excavated out in layers.

3.4.1 Geological Reserve:-

Table 1:- Geological Reserves

GEOLOGICAL RESERVE(SOMADIH)				
Section Line	**Area (m^2)**	**Strike Influence (m)**	**Volume (Cum)**	**Volume(Ton)**
1-1'	477	477	227529	409552
2-2'	357	536	191352	344434
3-3'	346	346	119716	215489
Total			**538597**	**969475**

Bulk Density 1.8 Tonnes per m^3

GEOLOGICAL RESERVE(EDRAMHATU)				
Section Line	**Area (m^2)**	**Strike Influence (m)**	**Volume (Cum)**	**Volume(Ton)**
1-1'	318	374	118932	214078
2-2'	299	378	113022	203440
3-3'	338	393	132834	239101

Total			**364788**	**656618**

Bulk Density 1.8 Tonnes per m^3

GEOLOGICAL RESERVE(DIBADIH)				
Section Line	**Area (m^2)**	**Strike Influence (m)**	**Volume (Cum)**	**Volume(Ton)**
1-1'	310	435	134850	242730
2-2'	325	425	138125	248625
3-3'	379	540	204660	368388
4-4'	403	275	110825	199485
Total			**588460**	**1059228**

Bulk Density 1.8 Tonnes per m^3

Total Geological Resrve = 1491845CUM or 2685321 tonne.

3.4.2 Minable reserve:-

Table 2:- Minable Reserve

MINEABLE RESERVE(SOMADIH)

BENCH LEVEL (mRL)	**VOLUME OF SAND IN (cum)**	**TONNES OF SAND IN (TONNES)**
1st Bench	203616	366508.8
2nd Bench	182091	327763.8
TOTAL	**385707**	**694272.6**

Bulk Density 1.8 Tonnes per m3

MINEABLE RESERVE(EDRAMHATU)

BENCH LEVEL (mRL)	**VOLUME OF SAND IN (cum)**	**TONNES OF SAND IN (TONNES)**
1st Bench	164415	295947
2nd Bench	146160	263088
TOTAL	**310575**	**559035**

MINEABLE RESERVE(DIBADIH) QUARRY-1

BENCH LEVEL (mRL)	**VOLUME OF SAND IN (cum)**	**TONNES OF SAND IN (TONNES)**
1st Bench	73237.5	131827.5
2nd Bench	64837.5	116707.5
TOTAL	**138075**	**248535**

MINEABLE RESERVE(DIBADIH) QUARRY-2

BENCH LEVEL (mRL)	**VOLUME OF SAND IN (cum)**	**TONNES OF SAND IN (TONNES)**
1st Bench	89586	161254.8
2nd Bench	77811	140059.8

TOTAL	**167397**	**301314.6**

- Bulk Density 1.8 Tonnes per m^3

Total Mineable Reserve = 1001754 CUM OR 1803157.2 tonnes

3.4.3 Classification Mineral Reserves:

Table 3:- Reserve calculation

Qarry Block	Area (Acres)	Geological Reserves (m3)	Mineable Reserves (m3)	Annual Production target (m3)	Annual Production target (tonne)
Edaramhatu, Somadih & Dibadih	121.12	1491845	1001754	900000	1620000

3.5 Project description with process details

This is an open-cast mining project, confined to excavation of Sand from the proposed site. The operation will be manual with use of hand tools like shovel, pan, sieves, etc. The minerals will be collected in its existing form. Excavation will be carried out only up to a depth of 3 m (Maximum) below ground level or above water level, whichever is less. Excavation of Sand material will be done only during the day time and completely stopped during the monsoon season.

3.6 Raw Material Required Along With Estimated Quantity, Likely Source, Marketing Area of Final Product/s, Mode of Transport of Raw Material and Finished Product

No raw material will be required in the proposed project. The operation involves only the excavation of Sand in its existing form and transported to the end users/ market.

3.7 RESOURCE OPTIMIZATION/ RECYCLING AND REUSE

Minerals are generally depleting asset once mined; but minerals like Sand will be replenished naturally. Thus a scientific approach will be taken up for excavation of mineral with systematic method.

3.8 AVAILABILITY OF WATER, ITS SOURCE, ENERGY/ POWER REQUIREMENT AND SOURCE

3.8.1 Water Requirement

Activity	Water requirement (KLD)
Dust suppression	9.0
Domestic (45 liter/person)	5.0
Green Belt Development (3 liters/tree)	9.0
Total	23.0

Thus total water requirement will be 23.0 KLD. This water will be supplied from the nearby sources through tankers, with proper permission for dust suppression. Additional water will also be required for plantation purpose.

3.8.2 POWER

All the activities will be carried out in a manual manner. The material will be excavated and loaded directly into tractors by the workers themselves. The operation will be done only from sun rise to sun set. So there is no power requirement for the mining activity.

3.9 QUANTITY OF WASTES TO BE GENERATED (LIQUID AND SOLID) AND SCHEME FOR THEIR MANAGEMENT/ DISPOSAL

3.9.1 Solid Waste Generation & its Disposal

No any solid waste will be generated from the proposed project.

3.9.2 Liquid Effluent

No liquid effluent will be generated at the mine site due to the mineral excavation.

4 SITE ANALYSIS

4.1 Connectivity

Nearest Railway Station	Torang railway Station approx. 9 Km towards North East.
Nearest Airport	Ranchi Airport, approx. 49 km towards NW.
Road connectivity	National Highway -33, Approx. 20 km towards West.
Nearest Town	Nearest Town: Ranchi approx 48.0 km towards NW.
Nearest Village	Dibadih, approx 2 km towards North

4.2 LANDFORM, LANDUSE AND LAND OWNERSHIP

The proposed activity is to take place in the dry bed of the River Kanchi. The land form is mostly river bed and non-forest land. The entire land is Government Land.

Moreover there will be no change in land use as the mining will be confined to the river bed, which will get replenished naturally with the continuous flow of water in the subsequent rainy season.

4.3 TOPOGRAPHY

Ranchi district lies in the southern part of Jharkhand state. The district is bounded on the north by Hazaribagh district, on the south by West singhbhum, on the west by Gumla and Lohardagga district and on the east by East singhbhum and Purulia district of West Bengal. The district has total area of 7698 sq. km.and is located between 22 ^{o} 45'- 23 ^{o} 45' North latitude to 84 ^{o} 45'-84 ^{o} 50' East longitude. Area is included in topo sheet no. 73A, 73B, 73E and 73F. The northernmost and southernmost partsof the district are covered with hillocks and forests. Altitude of the area varies from 500m to 700m above mean sea level in general. There are many hillocks through the district having altitude above 700m above mean sea level. District is the part of chotanagpur plateau. The district is highly dissected by rivers of varying magnitude. The major water divide in the district runs north to south direction through the Ratu, Lodhma and Khunti .The area in the eastern part of the water divide is drained by Subarnrekha and the western part of the divide is drained by South koel and karo.

Source: http://cgwb.gov.in/District_Profile/Jharkhand/RANCHI.pdf

4.4 EXISTING LAND USE PATTERN AND SHORTEST DISTANCES FROM FORESTS, WATER BODIES, ECO-SENSITIVE AREAS, ETC.

The applied area has mild sloped towards West to Eastdirection the highest level of area is 225.0 mRL towards SW direction while the lowest level is 418.0 mRL towards NE flank. The entire mining lease lies within bed of River Kanchi. The existing landuse pattern is dominated by agriculture which is followed by forests and barren land.

4.5 EXISTING INFRASTRUCTURE

The site has no existing infrastructure, except for connecting road for transportation.

4.6 SOIL CLASSIFICATION

The soils of the district are mostly of the residual type. High temperature and high rainfall have led to the formation of lateritic type of soils from rocks of Archean metamorphic complex exposed in the greater part of the district. Texturally the soils of the district have been classified into four classes- 1. Stony and gravelly soils- These are low grade soils having a large admixture of cobbles, pebbles and gravels generally found at the base of the hills. 2. Red and yellow soils: - This soil is formed by the decomposition of crystalline metamorphic rocks like granite- gneiss etc. These rocks contain mineral particles like biotite, hornblende and iron. Higher areas have soils with light red color but the lower areas have relatively dark color. It lacks nitrogen, Phosphorus acid and humus. Potash and lime are sufficiently found. 3. Lateritic soils: - This type of soil is found in Ratu, Bero and parts of Mandar Blocks. The soil has dark red or brown colour It has high iron content and has been formed by the process of lateritisation of the weathered material in the favourable climate and topography. 4. Alluvial soils: - River channels in the district are covered with alluvial soils consisting mainly of coarse sand and gravel mixed with silt and clay. Soil thickness depends upon the topographical control.

Source: http://cgwb.gov.in/District_Profile/Jharkhand/RANCHI.pdf

4.7 CLIMATIC DATA FROM SECONDARY SOURCES

Ranchi district experiences subtropical climate, which is characterized by hot summer from March to May and well distributed rain fall during southwest monsoon from June to October. Winter season in the area is marked by dry and cold weather during the month of November to February. The normal annual rainfall data indicate that average rainfall is 1394mm. Maximum rainfall has been observed from June to October months. About 90% of the total annual rainfall is received to the monsoon period. January is the coldest month with the mean daily maximum temperature at 22^{o} C and the mean daily minimum temperature at 7^{o} C. From February both day and night temperatures increase rapidly till May which is the hottest month of the year with mean maximum temperature at 36^{o} C.

4.8 SOCIAL INFRASTRUCTURE AVAILABLE

Road Connectivity	Lease area is well connected to NH- 33 Approx. 20 km towards West.
Nearest Railway Station	Torang railway Station approx. 9 Km towards North East.

Nearest Airport	Ranchi Airport, approx. 49 km towards NW.
Nearest School/College	Primary School, Dibadih, Approx 2.0 km towards North
Hospital	Primary Health center, Sonahatu, Approx 8 km towards West

5 PLANNING BRIEF

5.1 Planning Concept

Mining will be done as per the guidelines MMDR Act-1957, MMR-1961, Mines Act-1952 & Mines Rules-1955. This is an open-cast manual mining project. Excavation of minerals will be carried out only up to a depth of 3 m. 15m of safety zone from the river channel or 1/5th of the width of river (which may be higher) will be left all around the lease area for bank stability.

5.2 Population projection

The project will employ most of the workers from nearby villages except for supervisory staff. Thus there will no increase in population due to the project. However, few people from other area may migrate in this area for employment directly and indirectly for business opportunities.

5.3 Land use planning (Break up along with green belt, etc.)

Mining will be done in layers starting almost from the within the allocated area. The area so excavated will get filled up due to sediment inflow during monsoon.

Plantation will be done near the civic amenities or road sides in consultation with the local authorities/Government body as it is not feasible to plant trees in the lease area. Native plant / tree species will be planted.

5.4 Assessment of Infrastructure Demand (Physical & Social)

Infrastructure like evacuation road, site services will only be required.

Only local villagers from nearby villages will be employed for the mining activity. Thus no housing facility is proposed.

5.5 Amenities/Facilities

The following facilities/amenities will be extended by the mine management:

- Direct and indirect Employment, most of which most will be from nearby villages.
- Arrangements for safe and healthy working conditions & temporary rest shelters

- Provision of Drinking water.
- Provision of PPE
- First-Aid facilities and Health check-up camps for the workers.
- Conducting medical camps for workers and nearby villagers at regular interval.

6 PROPOSED INFRASTRUCTURE

6.1 Industrial Area (Processing Area)

No industrial area is proposed.

6.2 Residential Area (Non Processing Area)

As the local people will be given employment, no residential area/ housing are proposed.

6.3 Green Belt

Approx. 3000 trees are to be planted within 3 years of the project time. It is proposed to plant local trees along the haul road or at the place available with consultation with concern Gram Panchayat.

6.4 Social infrastructure

- Road facility (existing roads will be maintained regularly)
- Employment opportunity
- Medical camps
- Social awareness camps,
- Donations to schools
- Secondary employment opportunities
- Formation of self help groups for the women in nearby villages

6.5 Connectivity

Lease area is well connected to NH- 33 Approx. 20 km towards West.

6.6 Drinking Water Management

Water required for drinking purpose will be obtained through tankers/nearby sources with proper permission.

6.7 Sewerage System

No sewerage system is proposed.

6.8 Industrial Waste Management

Not applicable

6.9 Solid Waste management

No Solid Waste Management system is proposed.

6.10 Power Requirement & Supply/Source.

Mining activity will be done manually during day hours from sun rise to sun-set, hence there is no power requirement for the proposed activity.

7 REHABILITATION AND RESETTLEMENT (R&R) PLAN

The mine area is river bed, so rehabilitation and resettlement plan is not required

8 PROJECT SCHEDULE & COST ESTIMATES

8.1 Likely date of start of construction and likely date of completion.

The project will commence once Environmental Clearance and other necessary certificates are obtained from the respective departments.

8.2 Estimated project cost along with analysis in terms of economic viability of the project.

The total cost of project would be around Rs. 7,4915,000/-

8.3 Environmental protection cost:-

- **Auction Cost: 7,0415000/-**

- **PROJECT SCHEDULE & COST ESTIMATES.**

Sr. No.	Description	Cost in Rs.
1	**Auction cost**	70415000
2	Cost of infrastructure, Laborers, Equipment, Vehicles, etc.	25,00000
3	HAUL Road Maintenance	8,00000
4	Environnemental Protection & Implémentation	11,00000
5	Socio-economic development	2,00,000
TOTAL		**7,5915,000**

➢ ENVIRONMENTAL MANAGEMENT PLAN

SI. No.	Measures	Capital Cost (In Rs.)	Recurring Cost (in Rs.)
1	Pollution Control Dust Suppression	50,000	50,000
2	Pollution Monitoring i) Air Monitoring ii) Water Monitoring iii) Noise Monitoring iv) Soil Monitoring	 -- --	 2,00,000 1,00,000 1,00,000 50,000
3	Plantation	5,50,000	50,000
Total		**6,00,000**	**5,00,000**

➢ CORPORATE SOCIAL RESPONSIBILITY (CSR)

SI. No.	Activity	**Capital Cost** (in Rs.)
1	Provide drinking water facility in surrounding villages and schools by construction water tanks at schools	4,00000
3	Construction of Toilets in nearest schools	4,00,000
4	Educational support & sanitary facilities in schools for poor students	2,00,000
TOTAL (in life time)		**10,00,000**

9.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

The Project will bring economical benefits to the state by the way of Royalty for mineral.

Achieving a huge infrastructure as being envisaged by Government of India particularly in road and housing sector requires basic building materials. Sand is one of primary building material required for the purpose. 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. Sand excavated is in high demand at the local market for real estate industry.

This project operation will provide livelihood to the poorest section of the society/economically backward population and tribal in the area. It provides employment to the people residing in vicinity directly or indirectly. The mine management will also help nearby villages by providing aid to school, conducting medical and social awareness camps, helping in formation of self help groups, etc. Thus the project will bring about socio-economic improvement of the area and will prove beneficial to the area.

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