PRE-FEASIBILITY REPORT

EXECUTIVE SUMMARY

The proposed Sand Mining Project, Block- 04 (Malikpur sand ghat - 02), in District Nawada of State Bihar is a river bed sand mining project in an area of 6.0 Ha and falls under Category- "B1" as per by EIA Notification, 2006 and its subsequent amendments, Ministry of Environment Forests & Climate Change, GOI. LOI has been issued to Utimraj Commecial Pvt.Ltd., Director – Anirudh Kumar Singh vide letter no. 2287/khanan dated. 08.10.2024 for a period of 05 years by District Mining office, Nawada. The proposed project activity will be carried out on the dry part of the Khuri River bed. Details of the proposed project are as:-

Table- 1: Project Details

S.No.	Information	Details
1.	Project name	Sand Mining Project, Block- 04 (Malikpur sand ghat - 02)
	Mining Lease Area	6.0 Ha
3.	Location of mine	
	Khata/ Khasra/ Thana No.	Khesra No.- 2967 Khata No. - 499 Thana No.- 338
	Village/Mauja	Mauja– Malikpur Block– Akbarpur, Dist- Nawada, (Bihar)
	Tehsil	
	District :	
	State :	
4.	River/Nalla/Nadi	Khuri River
5.	Minerals of mine	Sand
6.	Mining Period	5 Years
7.	Proposed Production	72000 CUM or 129600 TPA.
7.	Bulk Density	1.8 g/cm^3
8.	Method of mining	Open Cast semi-mechanized Method
9.	Drilling or Blasting	No
10.	No of working days	250 days

11.	Water demand	S.No.	Purpose	Water Requirement (KLD)
		1.	Dust Suppression	2.0
		2.	Domestic	01
		3.	Green Belt	2.0
		Total		5.0
12.	Man Power	25		
13.	Nearest railway station	Nawada Railway Station at distance of approx. 7.79 km in NW direction		
14.	Nearest state highway/ national highway	NH-20 at approx. 3.40 km in North-East direction		
15.	Nearest air port	JPN International Airport Patna at distance of approx. 98.33 km in NW direction		
16.	Cost of Project	The total cost of project would be around Rs.73,40,000 (0.7340 Crore 0r 73.40 lakhs)		

2. INTRODUCTION

2.1 Identification of Project and Project Proponent

LOI has been issued to Utimraj Commecial Pvt.Ltd., Director – Anirudh Kumar Singh vide letter no. 2287/khanan dated. 08.10.2024 for a period of 05 years by District Mining office, Nawada for Sand Deposits having an area of 6.0 Ha. The details of the project are given below:

Table -2: Project & Proponent Details

Name of the Lessees	UTIMRAJ COMMECIAL PVT.LTD Director – Anirudh Kumar Singh
Name & Address of POA Holder	UTIMRAJ COMMECIAL PVT.LTD Director – Anirudh Kumar Singh S/o.- Arun Kumar Singh Add- MIG-A 42, Housing colony Dist.- Dhanbad, Jharkhand - 826001. 9431125486 utimraj@outlook.com
Name of Mine	Sand Mining Project, Block- 04 (Malikpur sand ghat - 02), District Nawada, State Bihar
Mineral	Sand
Area (ha)	6.0 Ha
Postal Address	Mauja– Malikpur Block– Akbarpur, Dist- Nawada, (Bihar)
Status of Mine	Fresh application for Environmental Clearance.

2.2 Brief description of the nature of the project

It has been proposed to collect approximately 72000 CUM or 129600 TPA of sand from available area. No mining activity will be undertaken during the monsoon season. So the material will be replenished during the monsoon season every year.

2.2.1 Mining:

- Mining will be done as per the guidelines of Bihar Mineral (Concession Prevention of illegal Mining Transportation & Storage) Rules, 2019.
- This is an open-cast mining project. The operation will be semi-mechanized/OTFM with use of excavators/JCBs truck /tractors combination or Manually etc. The sand will be collected in its existing form.
- Sand Mining will be carried out only upto a depth of 2 m bgl or above ground water level (whichever is less), for river bed block.
- No drilling /blasting are required as the material is loose in nature.
- Proper benching of 1.5 m height and 6m width will be maintained for mining blocks as per guideline M.M.R-2019, under rule 115(1).
- Mining will be done only during the day time and completely stopped during the monsoon season.

2.3 Need for the project and its importance to the country and region

The project lies on the bed of Khuri River. The sediment in the form of river bed material (RBM) deposited in the last many years had changed the shape of the river bed from a valley to araised land. Hence, it is necessary to remove the materials so that the stream gets channelized. Due to rapid infrastructure development in India, the demand of construction material has increased. To supply this demand, mining of sand is done. This project operation will provide employment directly and indirectly to the people residing in vicinity, thus improving the Socio-economic status of the area.

2.4 Demands-Supply Gap

The demand for sand is ever growing with the growth of the infrastructure sector in our country. The mineral is used mainly in the construction activities like buildings, bridges etc. The requirement for the mineral is always high in the cities and towns. Therefore there is always a good demand of the mineral in the domestic market.

Domestic/ Export Markets

The demand in the domestic market is high especially in the nearby towns and cities and hence the need for sand mining.

Export Possibility

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

Domestic/ Export Markets

a) DOMESTIC MARKET

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

b) EXPORT MARKET

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

2.5 Employment Generation

The total direct manpower requirement for the proposed mining operation will be around **25.** Significant Indirect employments are also expected due to the associated activities. This project operation will provide livelihood to the poorest section of the society.

3. PROJECT DESCRIPTION

Type of project including interlinked and interdependent projects, if any

The proposed project is for the extraction of sand from the bed of a water stream by semimechanized operation. This is an independent project.

Location

The proposed Sand Mining Project, Block- 04 (Malikpur sand ghat - 02) lies in District Nawada of State Bihar in an area of 6.0 Ha. The proposed project activity will be carried out in the bed of the Khuri River. The mine site is located at:

Table-3:-Pillar co-ordinates of the proposed sand mining site

S. No	Sand Ghat	Area (in Ha)	Co-ordinates		Ghat/Village	River
1	Block-04 (Malikpur sand ghat - 02)	6.0	A	24°49’19.16"N 85°34’43.18"E	Mauja– Malikpur Block– Akbarpur, Dist- Nawada, (Bihar).	Khuri
			B	24°49’19.85"N 85°34’45.08"E		
			C	24°48’50.66"N 85°34’45.58"E		
			D	24°48’51.77"N 85°34’43.58"E		

The Location map of the project site is given below:

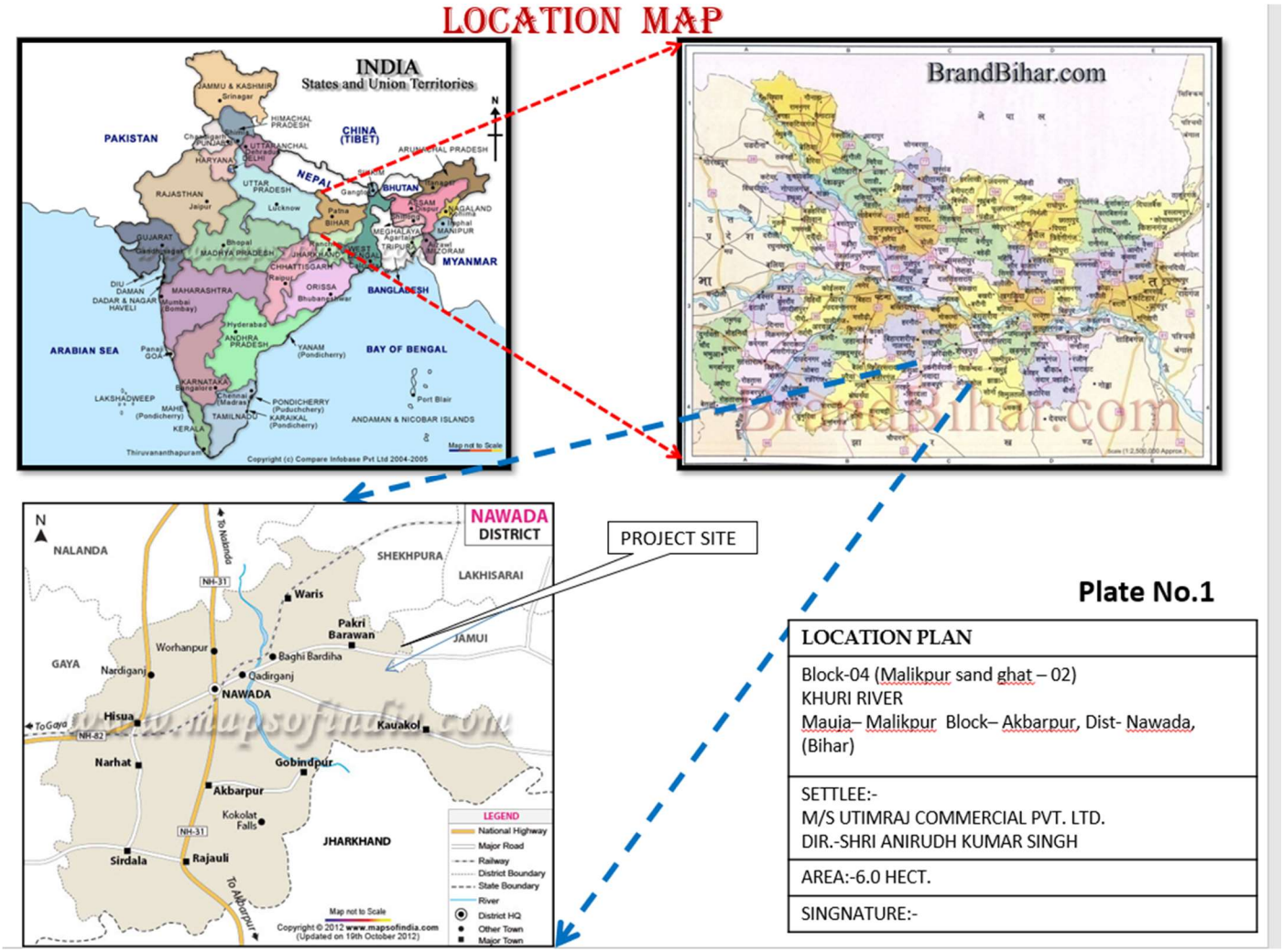

Figure:- Location map of the proposed site

Details of alternate sites considered

No alternative site has been considered, as the mining is site specific.

Size or magnitude of operation

The proposed mine has lease over an area of 6.0 Ha. The total extractable material would be approx 72000 CUM or 129600 TPA which is replenishable.

The reserve calculation for the site is mentioned below:

Table 4: Reserve Calculation

Name of the Mine	Area (Hect)	Geological Reserves	Mineable Reserves	Annual Productiontarget
Block- 04 (Malikpur sand ghat - 02)	6.0	120000 cum. or 216000 tonnes	84242 CUM or 151636 Tonnes	72000 CUM or 129600 Tonnes

Project description with process details

Method for developing and working the deposits

The sand deposited as stream bed material will be collected in its existing form.

Method of mining:

- Mining activity will be carried out by open cast manual/Mechanically method.
- No OB/ waste material will be produced in river bed. The sand shall be exploited upto depth of 2.0 m only through the formation of bench height 1.0m & width 6.0m. An approach road having width 6.0m & gradient 1:12 shall be provided for the movement of loading machineries & transportation of sand. The sand shall be exploited with the deployment of an excavator & filled into Tractors/Trucks & transported to various buyers.
- No drilling/ blasting are required as the material is loose in nature.
- Proper benching of 1.0 m height will be maintained.
- Roads will be properly made and sprayed by water for suppression of dust.
- Roads in the applied area for the movement of loaded tractors/ trucks will not have slopes more than 1 in 16.

- The mined out area shall be replenished each year during monsoon period and maintained in maximum original topography.
- Approach roads from the various blocks as already described earlier will be merging with permanent tar roads on both sides of the river for transportation of the mineral to final destinations.
- The Sand transportation shall be insured after the covering the vehicle Tarpaulin

Working Depth (below ground level)

The deposits occur in the middle/bottom of the water stream. During the lease period, the mining will be restricted down to 2 m below river bed.

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 the extraction of sand in its existing form and loaded into trucks/trolleys which will transport the material to the local market. The existing roads will be utilized for the transport of sand from mine site tomarket.

Use of Mineral

Minor mineral namely sand is used as construction material for buildings, bridges etc.

Mineral Beneficiation

No mineral beneficiation is involved.

Surface Transport

The transportation of sand will be carried out by the Proponent through their own transport. There are all weather metalled road and then an unmetalled road right up to the mines to dispatch the material from mines to the market. It will be purchased by the customers at mine site and transported by them through their own arrangement of trucks. The practice is quite sound in the area and ensure continuous lifting of the material. However necessary arrangement of truck can be done from the local truck operator union.

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.

Availability of water its source, energy/ power requirement and source

Water Requirement

Total water requirement will be 5.0 KLD. This water will be supplied by private tankers.

Table 5:-Water requirement of the project

S.No.	Purpose	Water Requirement (KLD)
1.	Dust Suppression	2.0
2.	Domestic	01
3.	Green Belt	2.0
Total		5.0

Power Requirement

Mining activities will be carried out in semi-mechanized manner. The operation will be done only from sunrise to sunset hence there is no power requirement for the project at site.

Quantity of wastes to be generated (liquid and solid) and scheme for their management/disposal.

Solid Waste Generation & its Disposal

There are no mineral rejects of any kind produced during mining.

Liquid Effluent

No liquid effluents will be generated at the mine site.

4. SITE ANALYSIS

Connectivity

The project site is connected by Wazirganj Bakshoti road which is at distance of approx. 0.76 Km in North-East direction. From the nearest metalled road, it is connected to the NH 20 in NE direction

The route map is shown in the figure below:

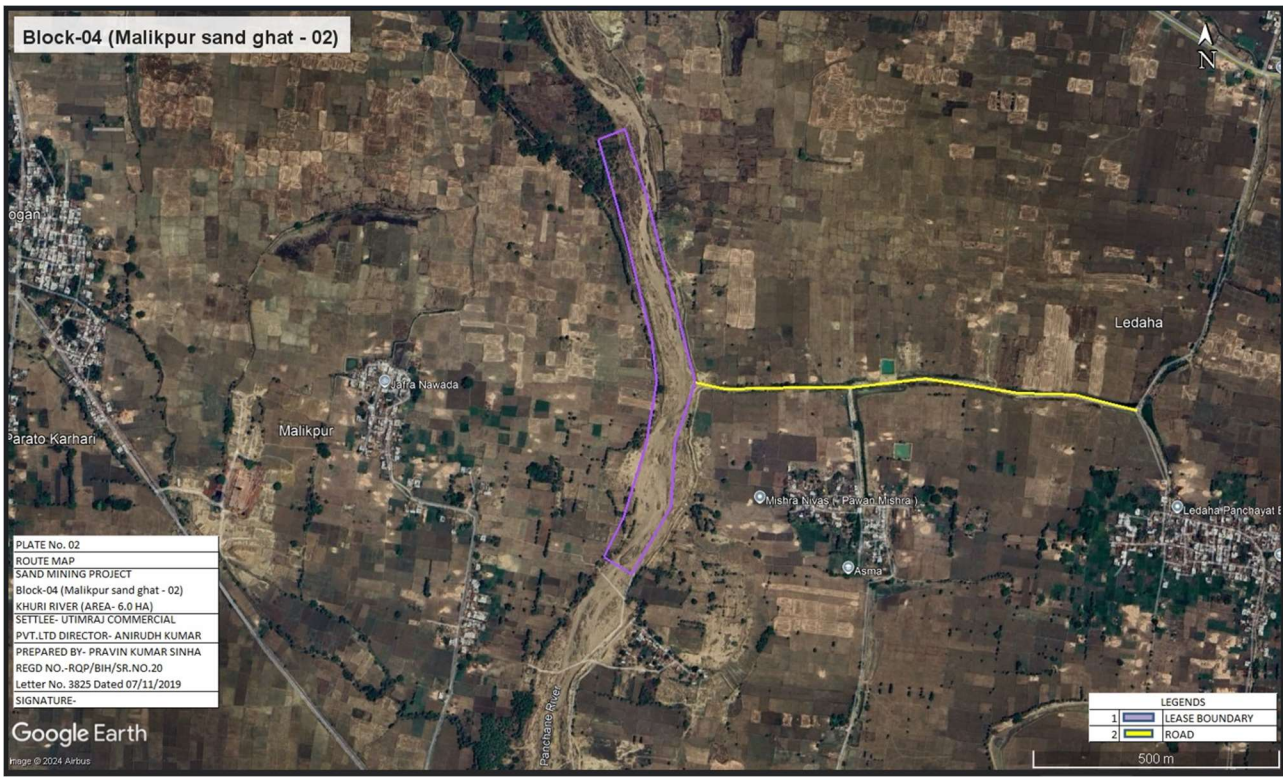

Figure:- Route map of the proposed Site

Other form of connectivity is as:-

Table 6: Connectivity Details

Nearest Railway	Nawada Railway Station at distance of approx. 7.79 km in NW direction
Station Nearest Highway	NH-20 at approx. 3.40 km in North-East direction
Nearest Airport	JPN International Airport Patna at distance of approx. 98.33 km in NW direction

Land form, land use and land ownership

The proposed activity is to take place in the dry river bed of concerned rivers. 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.

Topography

The Nawada District comprises of two distinct landscapes i.e Plain land of North and the hilly

area of the south. 45% comes under the plain land which is used for agricultural purposes. Nawada is a perfect combination of natural scenery combined with panoramic views, Nalanda known for its glorious past lies on the northern side of Nawada while Hazaribagh is located in its south. In the east lies Giridih, a very beautiful and holy place and finally in the west lies Gaya. Therefore, geographically it is clear that Nawada is surrounded by all these place which are hold great historical and geographical importance.

General Geology

The main geological formation in the area is pre-Cambrian rocks of Archaean age. The crystalline rocks in the district are mica schist, granite gneiss, quartzites & quartz schist, hornblende schist & mica pegmatites etc. These rock types constitutes the hill ranges &cover south and eastern parts of Rajauli blocks,southern parts of sirdala block north central & southern parts of govindpur blocks & south, south-eastern & northern parts of kauakol block. The mineral resources of Nawada district playing massive role in industrial, social and economic development of the district:

- Sand
- Quartzite
- Mica
- Sandstones

Regional Geology

Geologically, it represents nearly two third of Bihar is under cover of Ganga basin composed of alluvium and masks the nature of basement rocks.

Table -7: Geology deatils

Age	Geology	Occurrences
Quaternary	Alluvial Deposits (Sand, Clay, Silt, Fragments)	North Bihar Plain & Central Bihar Plain
Tertiary	Sand Stones & Clay Stones	North Champaran Hills
Gondwana	Coal Measures, Forming a series of Small outlier basins	Banka District
Vindhyans	Sandstones, Shales, Limestones, etc.	Parts of Bahbhua and Rohtas dist
Satpura	Schist, Phyllite, Quartzite	Part of Aurangabad, Gaya, Nawada, Nalanda, Sheikhpura and Munger District

Proterozoic	Mica Schist, amphibolites, quartzite, granite, dolerite and pegmatite	Nawada, Jamui and Banka
Archaean	Gneisses, Granites, Schists, Phyllites, quartzite, amphibolites & intrusive all metamorphosed sedimentary and igneous rocks	Part of Aurangabad, Gaya, Nawada, Jamui, Banka and Bhagalpur

Geology of the Area

The area of the district falls in the Zone-III B, South West Alluvial Plain agro climatic zone of Bihar. The district of Nawada does not have any important perennial river. The topography of the district is plain and border area adjoining Jharkhand is rocky terrain & mountains. The area is dominated by medium to fine sand geologically the area comprising of Terrace alluvium deposited in depositional terraces of old rivers & contain cyclic sequence of fine to course grained sand. It is angular to subangular and the angularity of the grains of this category of sand decreases with depth. The Litho unit shown on the geological map of the leased out area have been plotted on the basis of physical characteristics observed in the field. Sand and silt are deposited in the middle of the river whereas fine sand and soil are deposited at the fringe of the river banks. Soil/ alluvium varying in thickness from 0.20m to 0.60m m constitute the top horizons in the area suitable for agriculture. River Sakari, Dhadhar, Nati, Khuri & Dhanarjay meanders through the area exposing the alluvium and soil at the banks.

Rainfall and Climate Monsoon sets sometimes in the third week of June and it lasts till the end of September. The average annual rainfall in Nawada district is 1037 mm. The maximum rainfall in the district comes from South West monsoon with a little about 10% spread over the summer and winter. There is a large variation in the rainfall over year to year. Rainfall increases from Southwest to north-east.

The climate is generally hot and dry, the winter temperature ranges from 160C to as low as 40C whereas during the summer the mercury shoots to 460C. During rainy season it becomes cooler and temperature drops to 350C to 250C

5. PLANNING BRIEF

Planning concept

Production of sand will be done as per the market demand not exceeding 72000 CUM or 129600 TPA.

Population projection

The project will employ most of the workers from nearby villages. There will not be any increase in population due to the project.

Land use planning

The land use of the mine lease area is a river bed and there will be no change in land use after operation. The excavated sand will be replenished every year during the monsoon season. Hence the ultimate land use of the mine lease area will not be change.

Amenities/facilities

Temporary rest shelters, portable toilets and First aid provision will be made available to the mine workers at the site.

6. PROPOSED INFRASTRUCTURE

Industrial area (Processing Area)

No industrial area is proposed.

Residential area (Non Processing Area)

The mine workers will be hired from nearby villages, so residential areas will not be required.

Green belt

Plantation will be raised along both sides of roads and/or civic amenities in consultation with the local authorities. It is proposed to have plantation along the haul road sides on both sides to provide cover against dust emission and also to act as noise absorber. Plantation will also be carried out as social forestry programme in villages, school/ and the areas allocated by the village authority/local bodies. A total of **12** trees will be planted with various types of local species & will be maintained.

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.

Connectivity

Sand Mining Project, Block- 04 (Malikpur sand ghat - 02), is well connected to the nearest metalled roads/ Highways. The approach road will be maintained and dust suppression will be done regularly.

Drinking Water Management

Water for drinking and operations is proposed to obtain water from ground water from nearby villages. And proper permission will be taken from concerned authorities. About 1 KLD is required for drinking purpose.

Sewerage System

No Sewerage System is provided at the mine site.

Industrial Waste Management

Not applicable

Solid Waste management

No solid waste generation is expected from the mining operation.

Power Requirement & Supply/ Source

Mining activities will be carried out semi-mechanically. The operation will be done only from sunrise to sun set, hence there is no power requirement for the project at site.

Environmental Management Plan

The environmental management plan consists of the set of mitigation, management, monitoring and institutional measures to be taken during the implementation and operation of the project, to eliminate adverse environmental impacts or reduce them to acceptable levels. The present environmental management plan addresses the components of environment, which are likely to be affected by the different operations in the mine area.

Table-8: Budget Allotted for the Environmental Management Plan:-

Sl. No	Description	Capital Cost (lakh)	Recurring Cost (lakh)
1	Pollution Control & Dust Suppression	**Nil**	**3.0**
2	Pollution Monitoring i) Air pollution ii) Water pollution iii) Noise Pollution	--	3.0
3	Plantation and maintenance	0.24	0.5
4	Haul road Maintenance Cost	1.0	1.0
TOTAL		**1.24**	**7.5**

7. REHABILITATION AND RESETTLEMENT (R&R) PLAN

Not Applicable

8. PROJECT SCHEDULE & COST ESTIMATES.

The project will commence once Environmental Clearance and other necessary certificates are obtained from the respective departments. The total cost of project would be around Rs. 73,40,000/-. Break-up of the total project cost areas:-

Table-9:- Break-Up of Total project cost

S. No.	Description	Cost in Rs.
1	Auction Cost	5940000
2	Cost of Labour & Equipment	1200000
3	Miscellaneous	200000
TOTAL		7340000

Corporate Social Responsibility cost :-

CSR cost will be 2% of the total project cost. This amount will be used for social welfare.
CSR COST is

Total Project Cost	Percentage	CSR Cost (in Rs.)
7340000	0.02	146800

9. ANALYSIS OF PROPOSAL

The project involves collection of sand from the Khuri River bed. This is very essential in order to prevent widening of the riverbeds and to prevent flooding off and damage to the adjoining areas. This can only be achieved by maintaining the existing course of the river.

The river banks, on both sides are covered slightly by vegetation and human habitats. Widening of river banks results in excessive erosion; resulting in damage to flora, agricultural land and settlements which are situated at very close proximity. This project operation will also provide livelihood to the poorest section of the society. It provides employment to the people residing in vicinity directly or indirectly by the project. The sand extracted is in high demand in the local market. This is also to ensure scientific method of sand extraction.

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