PRE-FEASIBILITY REPORT

1.0 EXECUTIVE SUMMARY

S.No.	Information	Details
1.	Project name	Sand Mining Projects - 24 Ghats of District Bhojpur from river Son.
	Mining Lease Area	711.0 Ha.
3.	Location of mine	
	Villages	**Villages & their Ghats of District Bhojpur** **Bhojpur District:-** **Stretch-2 Son River-Bhojpur District):-24 Ghats** 24 Ghats named as Mukdumpur Ghat (B/S/01)-46 Ha, Mohdichak Ghat (B/S/02)-44 Ha, Daulatpur Ghat (B/S/03)-40 Ha, Jamalpur (B/S/04)-45 Ha, Suruandha Ghat (B/S/05)-47 Ha, Koilwar Ghat (B/S/06)-48 Ha, Dhandihan Ghat (B/S/07)-38 Ha, Dhandihan Ghat (B/S/08)-41 Ha, Farahangpur Ghat (B/S/09)-20 Ha, Bahiara Ghat (B/S/10)-40 Ha, Bishunpur Ghat (B/S/11)-35 Ha, Sarimpur Ghat (B/S/12)-40 Ha, Akhgaon Ghat (B/S/13)-42 Ha, Chilhauns Ghat (B/S/14)- 12 Ha, Sandesh Ghat (B/S/15)- 10 Ha, Kirkiree Ghat (B/S/16)- 15 Ha, Baruhi Ghat (B/S/17)-15 Ha, Peur Ghat (B/S/18)-20 Ha, Sahar Ghat (B/S/19)-45 Ha, Karbasin Ghat (B/S/20)-14 Ha, Fatehpur Ghat (B/S/21)-14 Ha, Andhary Ghat (B/S/22)-17 Ha, BIHTA Ghat (B/S/23)-15 Ha, Makdumpur-bindgawa Ghat (B/S/01A)-7 ha.
	District :	Bhojpur
	State :	Bihar
4.	River/Nalla/Nadi	**Stretch-1 Son River-Bhojpur District),**

5.	Minerals of mine	Sand
6.	Proposed Production	**Total Production:- 29510668 tonnes/annum**
7.	Method of mining	Semi-mechanized using excavators/JCBs
8.	Drilling or Blasting	No
9.	No of working days	310 days
10.	Water demand	Domestic Water : 7.5 KLD
		Dust Suppression: 30. KLD
		Green Belt Development :30 KLD
		Total Water Requirement: 67.5 KLD
11.	Man Power	200-250
12.	Nearest railway station	Details are given in Annexure-II for each Ghats, Refer **Annexure-II**
13.	Nearest state highway/national highway	Details are given in Annexure-II for each Ghats, Refer **Annexure-II**
14.	Nearest air port	Details are given in Annexure-II for each Ghats, Refer **Annexure-II**

2. INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

2.1 Identification of Project and Project Proponent

- Name of the Project: Sand Mining Project of of district- Bhojpur (24 Ghats from River Son)
- Location details of the stretch wise along with co-ordinates are as:-

DETAILS OF DISTRICT BHOJPUR ON SON RIVER									
SI.No.	**Distt.**	**Name of river**	**Name of the Ghat**	**Lat (N)**	**Long.(E)**	**Area(Ha.)**	**Geological Reserve in Tones**	**Minable reserve in Tonnes**	**Annual production**
B/S/01	BHOJPUR	SON	MUKDUMPUR	25°39'20.95"N	84°48'29.34"E	46	2663400	2464705	1782044
				25°39'6.09"N	84°48'32.67"E				
				25°39'2.06"N	84°47'59.79"E				
				25°39'23.06"N	84°48'3.16"E				
B/S/02	BHOJPUR	SON	MOHDICHAK	25°38'29.74"N	84°48'55.33"E	44	2547600	2359194	1887355
				25°38'29.81"N	84°48'30.95"E				
				25°38'8.83"N	84°48'31.07"E				
				25°38'8.87"N	84°48'55.25"E				
B/S/03	BHOJPUR	SON	DAULATPUR	25°37'44.98"N	84°48'30.54"E	40	2316000	2084400	1875960
				25°37'33.63"N	84°48'30.63"E				
				25°37'33.63"N	84°47'50.06"E				
				25°37'44.99"N	84°47'50.00"E				
B/S/04	BHOJPUR	SON	JAMALPUR	25°37'14.08"N	84°48'36.45"E	45	2605500	2395283	191622
				25°36'59.89"N	84°48'36.26"E				
				25°36'59.64"N	84°48'6.14"E				
				25°37'13.87"N	84°47'53.20"E				
B/S/05	BHOJPUR	SON	SURUANDHA	25°35'2.90"N	84°48'38.30"E	47	2721300	2500336	2000269
				25°34'44.54"N	84°48'24.72"E				
				25°34'44.58"N	84°47'59.67"E				
				25°35'2.99"N	84°48'4.90"E				
B/S/06	BHOJPUR	SON	KOILWAR	25°34'41.87"N	84°48'30.79"E	48	2779200	2580093	2064074
				25°34'25.55"N	84°48'32.19"E				
				25°34'25.10"N	84°47'54.24"E				
				25°34'41.68"N	84°47'58.46"E				
B/S/07	BHOJPUR	SON	DHANDIHAN	25°33'54.94"N	84°47'28.60"E	38	2200200	2002477	1601982
				25°33'47.38"N	84°47'43.02"E				
				25°33'26.43"N	84°47'17.97"E				
				25°33'36.11"N	84°47'10.18"E				
B/S/08	BHOJPUR	SON	DHANDIHAN	25°33'15.34"N	84°46'45.61"E	41	2373900	2173514	1738811
				25°33'7.62"N	84°46'58.64"E				
				25°32'49.98"N	84°46'42.90"E				
				25°33'0.88"N	84°46'24.01"E				
B/S/09	BHOJPUR	SON	FARAHANGPUR	25°32'39.42"N	84°46'30.20"E	20	1158000	1018554	814843
				25°32'39.45"N	84°46'12.12"E				
				25°32'21.86"N	84°46'9.02"E				
				25°32'21.86"N	84°46'17.76"E				
B/S/10	BHOJPUR	SON	BAHIARA	25°31'47.48"N	84°45'40.26"E	40	2316000	2099021	1679217
				25°31'39.48"N	84°46'0.34"E				
				25°32'15.84"N	84°46'12.18"E				
				25°32'16.53"N	84°46'5.33"E				

B/S/11	BHOJPUR	SON	BISHUNPUR	25°29'43.35"N	84°45'0.04"E	35	2026500	1839304	1471443
				25°29'43.24"N	84°45'18.16"E				
				25°29'20.87"N	84°45'18.05"E				
				25°29'20.82"N	84°45'0.08"E				
B/S/12	BHOJPUR	SON	SARIMPUR	25°28'46.41"N	84°45'25.90"E	40	2316000	2119391	1695513
				25°28'50.14"N	84°45'46.70"E				
				25°28'28.00"N	84°45'54.65"E				
				25°28'25.25"N	84°45'36.36"E				
B/S/13	BHOJPUR	SON	AKHGAON	25°28'20.53"N	84°45'39.74"E	42	2431800	2227556	1782044
				25°28'6.92"N	84°45'40.44"E				
				25°28'6.87"N	84°45'7.03"E				
				25°28'20.50"N	84°45'0.05"E				
B/S/14	BHOJPUR	SON	CHILHAUNS	25°25'46.46"N	84°45'36.86"E	12	694800	625320	562788
				25°25'46.42"N	84°45'24.13"E				
				25°25'28.99"N	84°45'26.02"E				
				25°25'28.95"N	84°45'29.10"E				
B/S/15	BHOJPUR	SON	SANDESH	25°24'22.54"N	84°44'50.29"E	10	579000	465852	372681
				25°24'22.45"N	84°44'53.72"E				
				25°23'58.18"N	84°44'47.91"E				
				25°23'58.10"N	84°44'51.25"E				
B/S/16	BHOJPUR	SON	KIRKIREE	25°20'8.07"N	84°42'38.02"E	15	868519	778442	622754
				25°20'8.13"N	84°42'47.02"E				
				25°19'48.97"N	84°42'46.91"E				
				25°19'48.94"N	84°42'37.95"E				
B/S/17	BHOJPUR	SON	BARUHI	25°17'19.85"N	84°39'51.30"E	15	868519	778415	622754
				25°17'19.77"N	84°39'57.92"E				
				25°16'56.05"N	84°39'47.05"E				
				25°16'55.97"N	84°39'39.28"E				
B/S/18	BHOJPUR	SON	PEUR	25°15'42.74"N	84°39'9.01"E	20	1158000	941021	752817
				25°15'52.07"N	84°38'50.33"E				
				25°16'0.50"N	84°39'8.71"E				
				25°16'0.35"N	84°39'17.34"E				
B/S/19	BHOJPUR	SON	SAHAR	25°14'30.84"N	84°37'17.07"E	45	2605500	2395283	1916226
				25°14'25.06"N	84°37'36.71"E				
				25°14'3.20"N	84°37'15.04"E				
				25°14'11.78"N	84°36'58.50"E				
B/S/20	BHOJPUR	SON	KARBASIN	25°14'39.70"N	84°36'36.91"E	15	868500	742006	593605
				25°14'28.01"N	84°36'37.00"E				
				25°14'28.03"N	84°36'20.09"E				
				25°14'36.88"N	84°36'20.04"E				
B/S/21	BHOJPUR	SON	FATEHPUR	25°13'12.00"N	84°32'36.79"E	14	810600	692004	553603
				25°13'3.05"N	84°32'36.73"E				
				25°13'3.04"N	84°32'18.56"E				
				25°13'11.97"N	84°32'18.56"E				

B/S/22	BHOJPUR	SON	ANDHARY	25°12'52.94"N	84°30'32.95"E	17	984300	854755	683804
				25°12'41.91"N	84°30'32.91"E				
				25°12'41.98"N	84°30'15.05"E				
				25°12'52.89"N	84°30'15.11"E				
B/S/23	BHOJPUR	SON	BIHTA	25°11'45.01"N	84°28'33.99"E	15	868500	2395208	1916166
				25°11'36.94"N	84°28'39.81"E				
				25°11'21.01"N	84°28'12.08"E				
				25°11'21.01"N	84°28'7.02"E				
B/S/01A	BHOJPUR	SON	Makdumpur-bindgawa			7	405300	364770	328293
TOTAL						**711**	**41166938**		

Total Production from all the Ghtas of 29510668 tonnes/annum (Semi-Mechanically)

Name and address of the Project Proponent:
M/s. Broad-son Commodities Pvt. Ltd.
Himanshu complex, Bank road, New Koilvar Chouk,
District-Bhojpur (Ara), State-Bihar

2.2 Brief description of nature of the project

The project is open cast mining of minor mineral in the form of Sand. 29510668 tonnes/annum (Mechanical), Total Production:- 29510668 tonnes/annum .Sand will be excavated. Entire process of excavation will be semi-mechanized.

The project has been proposed by M/s. Broad-son Commodities Pvt. Ltd.. The project proponent had obtained mining permission for District- Bhojpur, attached as Annexure-I.

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

Sand is used widely in the construction industry. It is 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

Creation of huge infrastructure as being envisaged by Government of 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. Vast quantities of sand are available in river ghats.. Therefore import of sand is not required.

2.6 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.

2.7 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.

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

The total direct manpower requirement for the proposed mining operation will be around 200-250. 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.

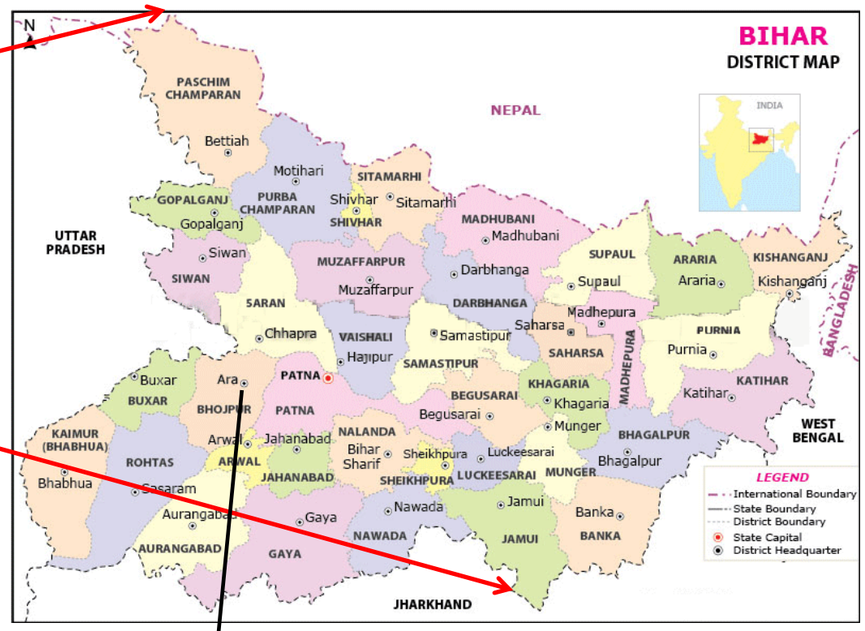
The proposed project for excavation of Sand is an independent project in which minerals excavated will be directly sold in the local markets. It does not involve interlinked and interdependent project.

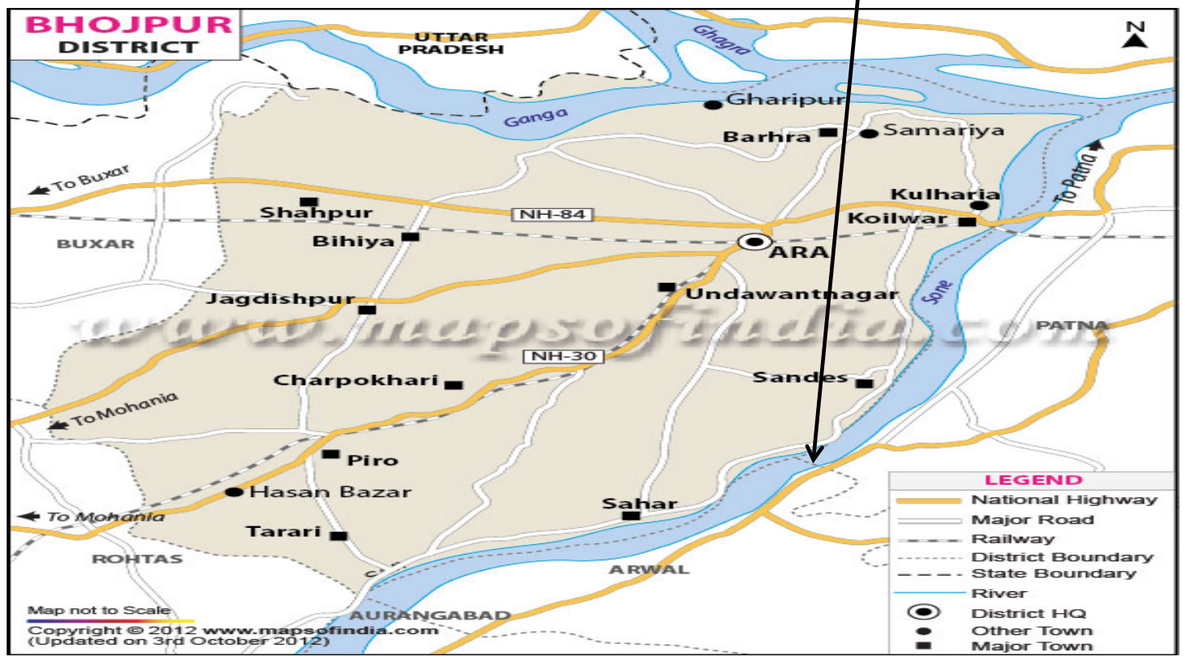
3.2 Location

The mining lease area is located on 106 Ghats of different rivers of District- Bhojpur of State-Bihar.

Composite map showing project sites is attached as **Annexure III. The vicinity map of the mine location is given below:**


INDIA
States and Union Territories
LEGEND
International Boundary
State Boundary
Country Capital
State Capital
Map not to Scale
Copyright © 2014 www.mapsofindia.com
This map is updated as on January, 2014


BIHAR
DISTRICT MAP
NEPAL
UTTAR PRADESH
JHARKHAND
WEST BENGAL
LEGEND
International Boundary
State Boundary
District Boundary
State Capital
District Headquarter


BHOJPUR
DISTRICT
UTTAR PRADESH
Ghaghra
Ganga
Gharipur
Barhra
Samariya
To Buxar
Shahpur
NH-84
BUXAR
Bihiya
ARA
Kulharia
Koilwar
To Patna
Jagdishpur
Undawantnagar
Sone
PATNA
NH-30
Charpokhari
Sandes
To Mohania
Piro
Hasan Bazar
Sahar
Tarari
ROHTAS
ARWAL
AURANGABAD
Map not to Scale
Copyright © 2012 www.mapsofindia.com
(Updated on 3rd October 2012)
LEGEND
National Highway
Major Road
Railway
District Boundary
State Boundary
River
District HQ
Other Town
Major Town

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 location is site specific as well as the lease has been allotted in the particular sand bearing 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 711.0 ha. The maximum rated capacity of the project will Approx. Total Production – 29510668 tonnes/annum mechanically.

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 semi-mechanized using Excavators/JCB .The mineral- sand 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	30
Domestic	7.5
Green Belt Development	30

Total	67.5

Thus total water requirement will be 67.5 KLD. This water will be supplied from private tankers.

3.8.2 POWER

All the activities will be carried out using diesel based machines. 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

Only bio-degradable solid waste will be generated.

3.9.2 Liquid Effluent

Portable Bio-Toilet shall be provided for the workers at the site. The sewage generated from the toilet provided for the mine workers shall be collected and treated by the inbuilt process of DRDO patented Bio technology using specially cultured anaerobic bacteria

4 SITE ANALYSIS

4.1 Connectivity

Refer **Annexure II** for connectivity details of each Ghats.

4.2 LANDFORM, LANDUSE AND LAND OWNERSHIP

The proposed activity is to take place in the river bed of Son river. 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.

4.3 TOPOGRAPHY

The topography of study area is fluvial in origin. It is developed by the silt deposited by river Son, & Gandak both are major tributary of River Ganga. Gandak mixes with Ganga from north direction while son mixes from south direction. Eastern embankment of Son River is relatively higher than western side. Major alluvial features including Pond, Riverine Island, Marsh Land, Large Sand Marsh etc. other important smaller drainage include Punpun river, Pachanua Nadi, Banas Nadi, Dhoi Nadi, Morhar Nadi, Dardha Nadi, Siroka Nadi, Kumhari Nadi etc. The major man made drainages include Jamrohi distributary, Karath distributary, Sakla Distributary, Amauna Distributary, Ara Canal, Gaharuan Distributary, Sikraut Distributary, Garhan subdistributary, Jaitpur Distributary, Panwar Distributary,

Kuri Distributary, Koilwar Distributary, Bichhiaon Distributary, Asni Distributary, Danapur Distributary, Patna Distributary, Kurkuri Distributary, Dariyapur Distributary, Murka Distributary, Paliganj Distributary, Adampur Distributary, Patna Canal, Rewa Distributary, Manjhauli Distributary, Fatehpur Distributary, Katea Distributary, Kakila Distributary, Lathan Distributary, Tar Distributary, etc. Almost each and every village is having its pond. General slope pattern is from South-West to North-East in Son flood plain while from North-west to south east in Gandak Plain.

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

The mine lease area is flat. There is no forest land or agriculture land in the mine lease area. The entire mining lease lies within the inactive channel of the bed of Son river, The existing land use pattern is dominated by agriculture which is followed by forests and barren land. The detailed land use pattern will be studied during baseline study.

4.5 EXISTING INFRASTRUCTURE

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

4.6 SOIL CLASSIFICATION

The farming situations in the district are mainly dependent as soil, topography and irrigation systems prevalent in the area. The district has mainly four types of soils ranging from moderately well drained to poorly drained, acidic to slightly alkaline and medium to heavy textured. From the farming point of view only four types of soils may be recognized as light to heavy in texture.

4.7 CLIMATIC DATA FROM SECONDARY SOURCES

The district by and large is homogenous. It is of moderate type characterized by quite hot summers to moderately cold winters. The day temperature generally ranges from 21.1 ºC in January to 38.7 ºC in May and night temperature from 7.3 ºC in December to 27.7 ºC in June. The summer begins in April and peaks in June/July with the temperature soaring up to 43 °C till the moisture laden monsoon wind bring some much-needed relief to the parched fields. The rains last through August & September and continue into early October.

The normal annual rainfall in the district is around 1076 mm. The timely and well-distributed rainfall during Kharif and Rabi has a deciding influence on the land use and cropping pattern of the district.

4.8 SOCIAL INFRASTRUCTURE AVAILABLE

Mine lease area is within 10-15 Km from their respective towns. Detail of Social Infrastructure for each ghat attached in **Annexure II.**

5 PLANNING BRIEF

5.1 Planning Concept

Mining will be done as per the guidelines of Bihar Mineral Policy, and guidelines of Bihar Minor Mineral Concession Rules (amended thereof)

This is an open-cast mining project. Excavation of minerals will be carried out only up to a depth of 3 meter and 5 meter of safety zone will be left all around the lease area. Thus the lease area falling within this stability zone will be left as no mining area.

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.

Population projection as per last three decades population growth rate and addition in the existing population by the proposed project will be included in final EIA.

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

Mining will be done in slices starting from the topmost level progressively advancing downwards. 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. It is not feasible to plant trees in the lease area. Native plant / tree species will be planted in consultation with gram panchayat and local forest officials..

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 depending upon the suitability of persons required for the job.

- 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

It is proposed to plant local trees and bushes along the river banks and along haul road in consultation with the local authority/ Govt. body.

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 an un-metalled road which further joins the respective metaled roads. Details of connectivity from each Ghats are given in **Annexure II.**

6.6 Drinking Water Management

Water required for drinking purpose will be obtained through tankers/or by private tankers.

6.7 Sewerage System

Portable Bio-Toilet shall be provided for the workers at the site. The sewage generated from the toilet provided for the mine workers shall be collected and treated by the inbuilt process of DRDO patented Bio technology using specially cultured anaerobic bacteria

6.8 Industrial Waste Management

Not applicabl

6.9 Solid Waste management

Only bio- degradable solid waste will be generated.

6.10 Power Requirement & Supply/Source.

All the activities will be carried out using diesel based machines. 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.

7 REHABILITATION AND RESETTLEMENT (R&R) PLAN

The mine area is inactive channel of 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

Sr. No.	Description	Cost in Crores
1	Cost of infrastructure, vehicles, Manpower & site amenities etc.	1.5
2	Equipment's & Machineries	1.5.
3	Site amenities	0.5
4	Environnemental Protection	1.0
5	Miscellaneous	0.5
TOTAL		**Rs. 5.0 Crores**

The total cost of project would be around Rs**. 5.0 crores**

9.0 ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

The Project will bring economic 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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