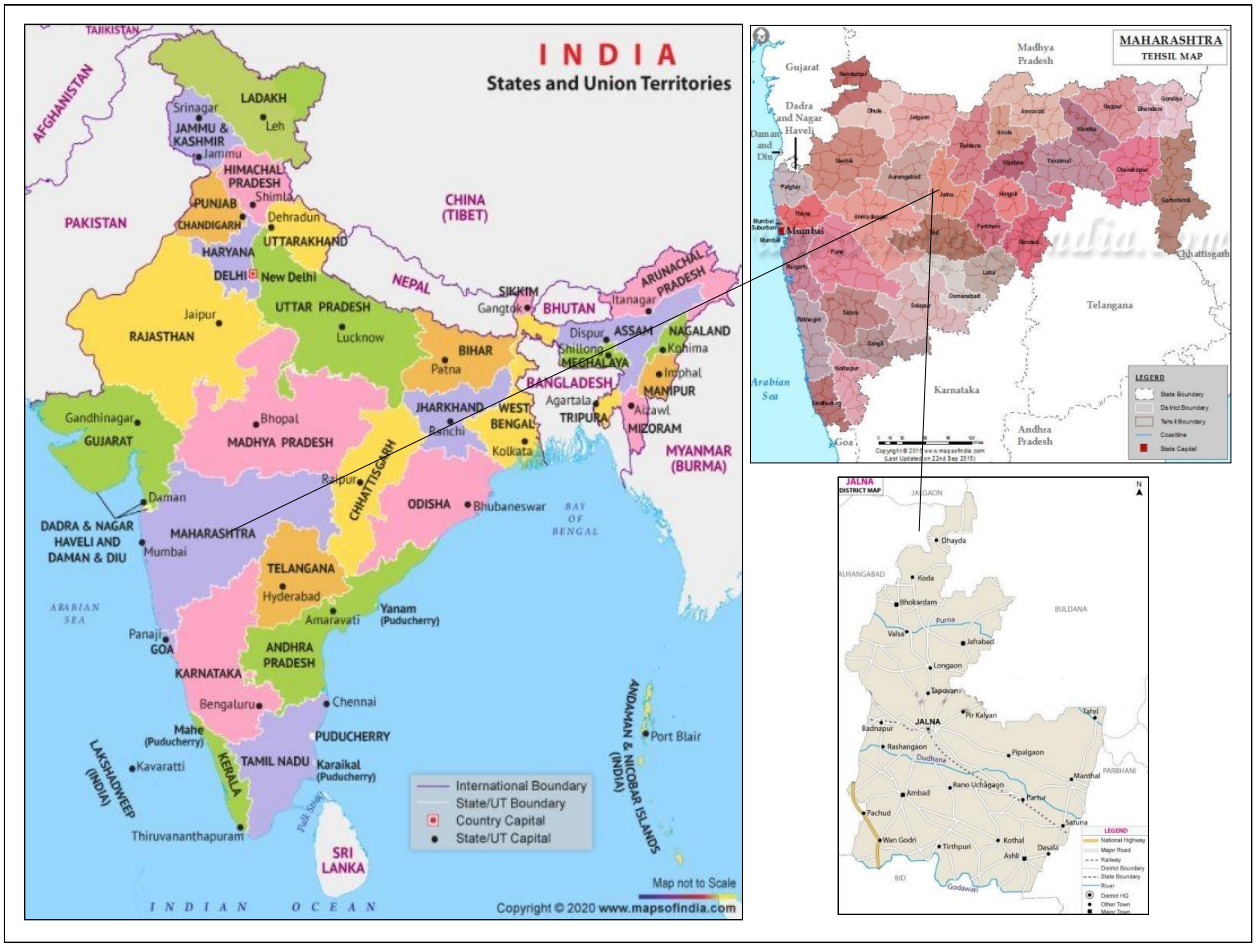
EXECUTIVE SUMMARY

1. Introduction

- Environmental Clearance is sought for 1 Sand Spots located in Partur Talukas in Jalna District.
- As Per Government of Maharashtra **Letter No: Sankirn- 2019/P.K.01/Ta.K.3** dated Dec 3, 2019, Public Hearing must be conducted for mines less than 5 Hectares.
- M/s. Integrated Precision Systems & Services Pvt. Ltd. was awarded work to obtain Environmental Clearances for Sand Spots of Jalna by Collector Office, Jalna. with **WO. No. 2020/Mashaka/Gaukh/Kavi 105** dated 03/02/2020.
- Mining plans for the Sand Spots have been approved by DGM, Aurangabad.
- Application in Form-1M, PFR, EMP, RA, DSR along with the Approved Mining Plans for Sand Spots will be submitted along with Public Hearing Proceedings for Environmental Clearance.

2. Location Map



3. List of Sand Ghats

SNo.	Name of the Sand Ghat
1	Changatpuri

4. Mining Methodology

Method of Mining: Opencast manual method without drilling & blasting. Only manual labor with hand tools such as spade, ghamelas will be used. Excavation of sand is done from dry riverbed only.

The following process is followed for the estimation of sand in sand ghat:

- The demarcation and benchmarking of the sand ghat is done as per 10m x 10m interval.
- Auger driller is used to find out the depth of sand in each grid.
- Auger driller is used to create the holes in sand ghat using a 10mx10m grid pattern.
- The depth of holes is measured by using measuring tape.
- After taking all the readings the average depth of sand ghat of the river is calculated in meters.
- Machinery / Equipment required: Spades, Ghamela, Tractor with trolley.
- Transportation: By tractor trolley from sand spot to stockyard & to consumers.
- Reclamation: Mined out area will be replenished automatically after the monsoon. Plantation will be carried out along the riverbank and along the transport road.

5. Environmental Management Plan

1. Air Pollution Control Measures

- Periodic water sprinkling on the kutcha road used for sand transport.
- Transport of sand by tractor trolleys, trucks covered with tarpaulin.
- Spillage of sand during transport shall be prevented by proper sealing of gaps.
- Plantation will be done along riverbanks and on free spaces near the sand spots.

2. Noise Control Measures

- Mining and sand transport will be carried out during the daytime only.
- Only noise due to sand transport is expected, periodic maintenance of sand transportation vehicles will be ensured to minimize noise.
- The speed of sand transport vehicles will be regulated.

3. Water Pollution Control Measures

- Sand mining will be carried out in dry riverbed only.
- The depth of the mine pit will be maintained above the river water level.
- River streams will not be diverted to form inactive channels.
- Washing of vehicles in the river will be prohibited.
- No effluent will be generated from mining activities.

- ❖ Provision of mobile toilets for workers.
- ❖ Mining will be avoided during monsoon and floods which will allow the sand deposit to replenish.

4. Land Environment

- ❖ Sand mining will create temporary pits in the dry riverbed, which will be replenished during monsoon.
- ❖ Safety distance of 3 meters or 1/10th of the width of the river, whichever is more will be left from both sides of the bank of the river (as per "Sustainable sand mining guidelines").
- ❖ Waste material like polythene bags, jute bags, etc. will not be allowed to remain/spill in the riverbed.
- ❖ Mining will not exceed the allowed extraction capacity.
- ❖ Plantation will be developed along the riverbank and nearby free spaces.

5. Green Belt Development Plan

Location of greenbelt	On the banks of both sides of the lease boundary & Haul Road outside riverbed
No. of plants to be planted	500 Plants per hectare
Spacing of plants	2 m grid interval
Species selected	Native species

Tree species recommended for Plantation

Botanical name	**Local name**	**Importance**
Azadirachta Indica	Neem	Neem oil & neem products
Tectona Grandis	Teak	Antibacterial, Antifungal, Antiulcer
Ficus Religiosa	Peepal	Medicinal use, Fruits & figs
Madhuca Longifolia	Mahua	Acts as a Stimulant & cough relief
Bambusa Vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

6. Occupational Health Safety Management

- Mine operators will be provided with personal protective equipment.
- Safety helmets and footwear, in addition to ear, eye, and hand protection devices.
- Dust masks will be provided for workers.
- A potable drinking water shelter for mine workers will be provided.
- First aid kit will be provided at the mine site.

7. Conclusion

- Applied 1 Sand Spots located in Partur Talukas in Jalna District, Maharashtra having lease area of less than 5 Ha, fall under B2 category as per MoEF&CC guidelines.
- Quarries are not likely to cause a significant impact on the environment due to the small scale of mining and will prove beneficial to the nearby community.
- The proposed project would provide indirect employment opportunities to local residents.
- The proposed project will also make a positive contribution to the social infrastructure and overall development of the region.
- All environmental issues like air, water, noise, soil, solid waste management, etc. will be dealt with as per the MoEF&CC guidelines.

APPENDIX VIII
(See paragraph 6)
FORM 1 M
APPLICATION FOR MINING OF MINOR MINERALS UNDER CATEGORY 'B2' FOR LESS THAN AND EQUAL TO FIVE HECTARE

(I) Basic Information

(i) Name of the Mining Lease site: Changatpuri Sand Spot

(ii) Location / site (GPS Co-ordinates):

Boundary points of Changatpuri sand spot	Latitude	Longitude
B.P 1	19°17'27.68"N	76° 8'35.65"E
B.P 2	19°17'36.66"N	76° 8'51.40"E
B.P 3	19°17'34.02"N	76° 8'52.82"E
B.P 4	19°17'25.11"N	76° 8'37.04"E

(iii) Size of the Mining Lease (Hectare):4.81 ha

(vi) Capacity of Mining Lease (TPA): 12761 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 368.86 Lakhs

(vii) Contact Information: District Mining Officer Jalna, Maharashtra

(II) Environmental Sensitivity

S. No.	Areas	Distance in Kilometer/Details
1	Distance of project site from nearest rail or road bridge over the concerned River, Rivulet, Nallah et	Sadola ashti road ,6.09Km,E
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds	 Selu railwaystation,34.85 km,E NH-222 ,11.03 Km,S SH-148,11.48 Km,S 0.69 Km,SW Changatpuri-Golegaon ,1.80 Km,E 0.87 Km,SW

	In-take for drinking water pump house Intake for Irrigation canal pumps	Godavari River Bed Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Nil
4	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water bodies: this is the case of river sand mining in Godavari River bed
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	Nil
6	Inland, coastal, marine or underground waters	Godavari River Bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	SH-148,11.48 Km,S
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Majalgaon, 11.43 Km,S
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	There were some schools, Hospitals ,temples, within in the boundary not in the core zone
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Godavari River Bed (this is the case of river sand mining)
13	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	Nil
14	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	The mine lease area falls in Seismic Zone II (Least active), according to the Indian Standard Seismic Zoning Map.
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or	No

	clearance under the following Regulations or Acts, namely:- (a) The Forest (Conservation) Act, 1980; (b) The Wildlife (Protection) Act, 1972; (c) The Coastal Regulation Zone Notification, 2011. If yes, details of the same and their status to be given.	
17	Forest land involved (hectares)	Nil
18	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c) Orders or directions of the Court, if any, and its relevance with the proposed project.	Nil

ENVIRONMENTAL MANAGEMENT PLAN

1. Introduction

Ministry of Environment and Forest (MoEF) Notification 2006 and Sustainable Sand Mining Management Guidelines 2016 and as per provision in Mines and Minerals (Development and Regulation) Act 1957 Schedule 60 section 15, Govt Of Maharashtra makes a Minor Mineral Extraction Rules 2013 to extract all the minor mineral in scientific way so that there is no adverse impact on Environment and Climate. To extract every minor mineral from any land (either Government or Private) there is provision of mining plan which is approved by competent authority; For long term leased minor mineral (5 – 10 years period) and Sand excavation from river bed, Senior Deputy Director of Directorate of Geology and Mining is a Competent authority, for short term Temporary permits which is valid for one year, Committee headed by Hon. Collector is Final authority to Approved the District Mining Plan.

As per Minor Mineral Extraction Rules 2013 Rules 70, Disposal of sand from River bed, Nallah and creeks by way of public auction, in this regards Govt resolution Gaukhni -10/0615/case No. 289/kha dated 3rd January 2018 is applicable in entire state. As per Enforcement & Monitoring Guidelines for Sand Mining 2020 Sustainable sand mining management guidelines 2016, Standard Environment condition for sand mining and sustainable mining practices, district level survey report should be prepared and area suitable for mining and area prohibited for mining be identified.

2. Project Description

Changatpuri is a large village located in Partur Taluka of Jalna district, Maharashtra. Jalna District is an administrative district in the state of Maharashtra in Western India. Jalna is the district headquarters. The district is a part of Aurangabad division. It is located at a distance of 50KM from District headquarters Jalna, 28KM from Tehsil Partur.

The sand spot area is connected to approached road at a distance of 297 meters in the South direction, this road is further connected to village Mahatpuri then after connected to Main Road which is situated at a distance of 2km in South of the sand ghat spot. Jalna Railway Station is present at a distance of 50km. Area is covered in SOI Toposheet No-56A/4.

Table 1: Salient Features of the Project

<table>
<tr><th>Items</th><th>Details</th></tr>
<tr><td>Location</td><td>Changatpuri Village, Partur Taluk, Jalna district, Maharashtra</td></tr>
<tr><td>Latitude and Longitude</td><td>
<table>
<tr><th>Boundary points of Changatpuri</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>BP1</td><td>19°17'27.68"N</td><td>76° 8'35.65"E</td></tr>
<tr><td>BP2</td><td>19°17'36.66"N</td><td>76° 8'51.40"E</td></tr>
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<tr><td>BP4</td><td>19°17'25.11"N</td><td>76° 8'37.04"E</td></tr>
</table>
</td></tr>
<tr><td>Sand spot area (In Ha)</td><td>4.81</td></tr>
<tr><td>Proposed
Production capacity
(In Brass)</td><td>12761</td></tr>
<tr><td>Manpower Requirement
(considering 8 month period)</td><td>30 labors + 2 mate + 1 Supervisor = 33 man/day</td></tr>
<tr><td>Infrastructure Requirement (
As per Govt Resolution 3rd January 2018)</td><td>1. Room / Hut for Official records
2. Electricity / Battery for Running CCTV on 24X7 daily.
3. One Computer / Android base Mobile for the online generation of Invoice number.</td></tr>
<tr><td>Water requirement & source</td><td>5.94 KLD – Tankers from nearby village.</td></tr>
<tr><td>Project cost INR (Lakh)</td><td>368.86352</td></tr>
<tr><td>Domestic Solid waste generation and Handling in 240 working days (tons)</td><td>0.792
(will be handed over to local authorities)</td></tr>
</table>

3. Baseline Environmental Status

i. Topography

The Godavari is India's second longest river after the Ganga. Its source is in Triambakeshwar, Maharashtra. It flows east for 1,465 kilometers (910mi), draining the states of Maharashtra (48.6%) the Godavari is the largest in peninsular India, and had been dubbed as

the Vridha Ganga in Maharashtra state where it takes origin, the river has an extensive course, the upper basin (origin to its confluence with Manjira) of which lies entirely within the state, cumulatively draining an area as large as 152,199km2(58,764sqmi) –about half the area of Maharashtra.

The slope is of 4m from 326 to 330MSL. The slope of Sand Spot area is towards NE side. The highest MSL is 330 & lowest is 326 MSL. The flow of Godavari River is towards NE direction.

ii. Hydrology

There will be no change in water table during mining operation, as the depth of mining shall be restricted to 1.0m water level, which is less likely to affect surface level or ground water table. There is no proposal of any stream modification/diversion due to this mining activity hence there will be not any impact on flow of water.

iii. Soil Environment

The area is not having any topsoil or fertile soil. The depth of mining shall be restricted to 1.0m. There is no major impact on soil of the study area is envisaged due to mining activities.

iv. Land Use Land Cover

The project area does not consist of any forest land. It does not consist of any human habitations. Any change in scope of mining as per approved mining plan can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation of surrounding landscape.

v. Water Environment

There will not be any wastewater discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 1.0m only so there will not be any intersection with ground water table. It is observed from the dug well in the adjacent plain area and in the nearby villages that the ground water table varies depending upon seasonal variations. The depth to water levels in the district ranges from 3.84 to 16.20 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 1.05 to 14.65 m BGL.

As the mining activities presently proposed are maximum upto 1.0m that to within the river course and the total mining operation will be achieved through manual means, there will be no effect on ground water table. All the stipulations of MoEF for sand mining and guidelines as per the Maharashtra Minor Mineral Extraction [Development and Regulation] Rules, 2013 of Section 15 of MMDR Act 1957 [67 of 1957] will be followed. Hence, impact on water regime due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing the operation and shifting the men and transport vehicles prior to onset of monsoon.
2. No oils or lubricants will be discharged in the sand to avoid water pollution.

vi. Climate

The climate of the district can be divided into three seasons as: a) Moderately warm wet season during June to Sept., b) Cool dry season from Oct. to Feb., and c) Hot dry season from March to May. The average temperature of the district is ranging from 20 0C during winter to 41 0C during summer. During greater part of the year, the climate is quite pleasant. It receives rainfall mostly from South-West monsoon. Rainfall is not uniform in all parts of the district. The average rainfall ranges between 643-825.

vii. Biological Environment

The project is only of extraction of minor minerals viz. sand from the river quarry.

Flora: The area is completely barren and devoid of any vegetation in the river. Only few thorny bushes are seen on the banks of the River.

Fauna: As there is no forest cover, no wildlife can be seen in this area.

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5km. radius of the site.
2. The mining lease area is in non-forest land i.e. sandy river quarry where presence of fauna is not at all seen. As such, there will be no adverse impact of the manual mining activity on fauna around the mining lease area.
3. No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

viii. Socio-Economic Environment

Critically analyzing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

1. The mining operations will provide direct & indirect employment village people.
2. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements
3. Local work force will be given first preference for employment.
4. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

4 Impact assessment report along with proposed mitigation measures.

Preparation of Environmental Management Plan is required for formulation, implementation, and monitoring of environmental protection measures during and after commissioning of projects. The plan should indicate the details as to how various measures have been proposed to be taken including cost components as may be required.

1. Land Environment

The type of mining and the characteristics of the mineral deposit both affect the degree to which mining disturbs the landscape. Sand Mining and allied activities will be done in the fluvial plain formed by river meandering. Mining of sand may cause a few environmental degradations.

a. Anticipated Impacts:

- Damage of riverbank due to access ramps to riverbed, may cause soil erosion.
- Destruction of river bank hinterland and ecological due to extraction of sand by probability of damage to the flood control bunds (built along the river side) due to heavy movements of vehicles over the bund to approach the mine are and further during transportation for sand from the mine area.
- Disposal of packing material, carried by the workers, would not be allowed. This packing material would include used sachet/ gutka /pan masala pouches.
- Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations, borehole users due to dust, noise and it also causes traffic hazards.

- Surface degradation due to road network.

b. Mitigation Measures:

- Safety distance of 3 meter or 1/10th of the width of the river whichever is more will be left from both the bank of the river (as per "Sustainable sand mining guidelines").
- No foreign material like polythene bag, jute bag and useless articles should be allowed to remain/spill in river bed and catchment area, or no pits/pockets will be allowed to be filled with such material.
- Minimum number of access roads to river bed for which cutting of river banks will be avoided and ramps are to be maintained.
- Care will be taken to ensure that ponding is not formed in the river bed.
- Mining will not exceed beyond the allowed extraction capacity.
- Green belt will be developed along the haul road and the bank of rivers of mine premises and near the sand mining site. While selecting the plant species, preference will be given for planting native species of the area.

3. Water Environment

a. Anticipated Impacts:

- As the project activity is carried out in the dry part of river bed, none of the project activities will affect the water environment or riverbank habitats. Project activities will not have any adverse effect on the physical components of the environment and therefore may not have any effect on the recharge of ground waters or affect the water quality. Monitoring of water quality will be checked yearly.

b. Mitigation Measures:

- Mining is avoided during the monsoon season and at the time of floods. This will help in replenishment of sand in the riverbed.
- Mining below subterranean water level will be avoided as safeguard against environmental contamination and over exploitation of resources.
- River stream will not be diverted to form in active channels.
- Utmost care will be taken to minimize or control leakage vehicles to be used for sand transportation.
- The washing of tractor trolleys in the river will be avoided.
- The contractor will follow all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.

4. Air Environment:

a. Anticipated Impacts:

Due to Haul Road/ Access Road:

- Plying of tractor trolleys from public road to river sand collection points needs access roads.
- Majority of such access roads are the same existing roads/tracks being used by pedestrians/cart owners. Movement of heavy vehicles sometimes causes

problems to cattle, agriculture land, and human habitations due to dust, noise and movement of public.

- These environmental problems are felt more as the area is rural in nature.

Due to Mining process:

- Air pollution is likely to be caused at various stages of sand mining operations such as excavation, loading & transportation of material.
- Most of the dust will be generated from loading& transportation. This dust becomes air borne and gets carried away to surrounding areas.
- The impact on air is mainly localized in nature as the dust particles are not carried to longer distances and the effect is felt within the core zone of the project involving active Sand mining operations.

b. Mitigation Measures:

Mitigation of Impacts on Access Roads:

- Movement of the vehicles on the road will be increased; however, unmetalled road in the mining area will be sprinkled with water at regular intervals.
- In addition to prevent spillage by tractor trolleys over loading should be controlled along with speed limit (1Brass /tractor trolley).
- Maintenance of haul road will be done on regular basis.

c. For Fugitive Dust Emission:

- To avoid fugitive dust emissions at the time of excavation, regular sprinkling of water will be done on regular basis.
- Sand is transported to the sites by road through tractor trolleys. The sand carrying vehicles shall be covered by tarpaulin sheets.
- The Green Belt development will be prepared along the haul roads, which will act as a pollution sink.
- To minimize the vehicular pollution from the sand transporting vehicles, the following conditions will insist to permit the vehicles of the transporters.
- The vehicles should be (Bharat-IV stage) compliant and should have pollution control certificate (PUC) issued by appropriate authorities.
- Regular maintenance of transport vehicles and monitoring of vehicular emission levels at periodical intervals.

5. Noise:

a. Anticipated Impacts:

Noise environment in this project will be affected only by the equipment at the site and vehicular transportation. Since slight increase in noise levels can be expected.

b. Mitigation Measures:

- Minimum use of Horns at the village area.
- Timely maintenance of vehicles and their silencers to minimize vibration and Sound.
- Phasing out of old and worn-out tractor trolleys.
- Provision of green belts along the road networks.
- Care will be taken to produce minimum sound during sand loading.

- Use of Backhoe and ear plugs may be provided to protect the labors working at the site.

6. Socio-Economic Environment

This project operation will provide livelihood to the poorest section of the society.

Anticipated Impacts and Evaluation:

- The project activities shall not have any adverse impacts on any of the common property resources of the village communities, as the sand mine lease area is not being used for any purpose by any section of the society in this region.
- There is no R & R involvement in this project.
- There is no land acquisition in this project.
- The results of the field survey conducted to understand the knowledge and perception of the people living around the projectarea gives a clear idea about the need for the project.
- A major portion of the houses in the study area are semi- pucca typestructures.
- The water source to these areas is from the municipal connection and private bore wells and wells. The awareness level regarding the proposed mining activity is very high. The proposed mining activity is expected to provide stimulus to socio-economic activities in the region and thereby accelerate further development processes.

a. Social and Demographic Profile:

The workers are from local villages. These people have been provided all welfare from a lessee like medical benefits, insurance, fees for children's education etc. They have some land and cattle for their daily earnings. Additional income earned from the Sand Mining work will improve their living standard. The group of quarries in and around will help to have infrastructure facilities like roads, schools, shops etc. This will improve their social life.

b. Occupational Health and Safety:

This is Riverbed Sand Mine. So, the mining activities are comparatively less because the production is not on large scale. Workers do not come across any extreme condition like excessive heat, moisture etc. Workers working around it may come across this dusty environment. But the impact on health will be within limit.

c. Human Settlement:

There are no houses in and around lease area. Blasting is only activity, which may affect the settlement, but settlement is at distance of more than 1.0 Km from the Sand Mining. All the due precautions will be taken during mining. Transport of finished products is through the villages. There will be psychological impact of the traffic on the local people. However, the intensity of traffic is less.

d. Health and Hygiene:

In general, the health of villagers is moderately good. In the rainy season, the atmospheric condition is unhygienic due to lack of proper drainage and sanitation in the village habitation. Villagers are working in agricultural fields and work as laborers.

e. Education:

a. Mostly education is up to middle standard. Economic condition is in general moderate. So, after this project the standard of education will be increase.

f. Socio Economic Benefits Arising Out of Mining:

a. Generation of employment in the rural area.
b. Improvement in the living standards of the rural people.
c. Creating of infrastructural facilities like roads, electricity, shops, school etc.
d. Helping to improve literacy in the area Exploiting natural mineral so generation of revenue
e. Helping to sustain construction activity
f. Improving the greenery of the area, this is otherwise poor.

g. Liquid Effluent:

Not applicable because small mine and impacts are negligible.

h. Solid Waste:

Not applicable because small mine and impacts are negligible.

6. Biological Environment

Anticipated Impacts:

- Aquatic environment Proposed mining of the dry bed of the river, so no possibility of disturbance of aquatic life.
- Flora and Fauna The mining activity will have insignificant effect on the existing flora and fauna. The project area is surrounded with agricultural land. It was found that the sand mining activity will not have any significant impact on the biological environment of the region.

Mitigation Measures:

- Improvement in riverbank stability.
- Large woody debris in the riparian zone will be left undisturbed or replaced when moved and not be burnt.
- Vegetative debris will not be stored within the mine lease area.
- Operation and storage of heavy vehicles within riparian habitat will be restricted.
- Covering of loaded vehicles to reduce dust emission, which may harm surrounding agricultural crops and other plant species conservation of biological diversity of plants, birds, and animals.
- Greenbelt Development and Bio-Diversity Preservation Plantation activities will be carried out at the bank of the river and along the haul roads. This activity will help for maintaining ecology and environment of the area.

5 Project Benefits

The proposed expansion project will lead to the following benefits:

- Sand is available for Building and Construction work and by regular removal of sand there is no possibility of flood.
- This project will contribute additional revenue to the state Exchequer in the form of revenue.
- The project will result in the employment opportunities to the unskilled/skilled local people.

Thereby, the quality of life of the employed people will increase.

6 Sand Ghat Closure Plan

S. No	Head	Area put on use at start of plan [in Ha]	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net considers for calculation
1	Area under mining / pit	-	4.81	4.81	4.81	4.81
2	Area under dump	NIL	---	---	---	---
3	Infrastructure Workshop Administrative Building etc.					
4	Roads					
5	Mineral reject					
6	Green Belt Plantation /Soil dump					
7	Tailing Dam /pond					
8	Effluent Treatment Plant					
9	Mineral storage					
10	Township area					
11	Other to specify					
GRAND TOTAL			4.81	4.81	4.81	4.81

- Mining will be avoided during monsoon and floods; this will allow the sand deposit to replenish.
- Gabion structure will be constructed for the sand to replenish during monsoon season.

7 Planning Brief:

The proposed project is opencast manual sand mining activity.

Tahsil Office Sand Information 2020-21 - Sand Demands for Gharkul

तालुका	घरकुलसाठी आवश्यक असलेली वाळू ब्रास
जालना	00
बदनापुर	00
जाफ्राबाद	45
भोकरदन	00
अंबड	150
घनसावंगी	2000
परतूर	4500
मंठा	50
एकुण	6745

On Going Government Civil / Infrastructural Works in the District 2020-21

Name of Govt. Yojana	Details of Work	Approx. qty of sand required in brass
Gharkul	PMAY-G, Ramai Awas Yojana, Shabari Awas Yojana	16610
Irrigation Projects	Dam work	1445
Soil & Water Conservation	-	33800
State PWD	-	12000
Gram Sadak Yojana	Cement Road work,	5500
Total		69355

8 Compliance of earlier Environmental Clearance

Auction Summary for 2018-19					
SNo.	**District**	**Total sand Spots put up for auction 2018-19**	**Sand spot auctioned 2018-19**	**Sand spot Reserved for govt. work 2018- 19**	**Earlier Environmental Compliance Received Sand spot 2018-19**
1	Jalna	29	18	5	8

- At time of allocation sand Ghats, Owners should deposit EMD, EMP amount and GB to collector office.
- During sand Ghats operating period, Tahsildar level team verified the given term and conditions from time to time. If sand Ghats owner complied all given term and conditions his deposit like EMD, EMP amount and GB refunded.
- In this way year 2018-19, sand Ghats owner and concern tahsildar submitted the EC and sand mining policy terms and conditions compliance report. Some photographs of EC compliance shown in ppt.

9 Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January 2020.

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining activities and can also report to the district administration on any deviation observed.
- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- The recommendation may also include action under the provision of E(P) Act, 1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph

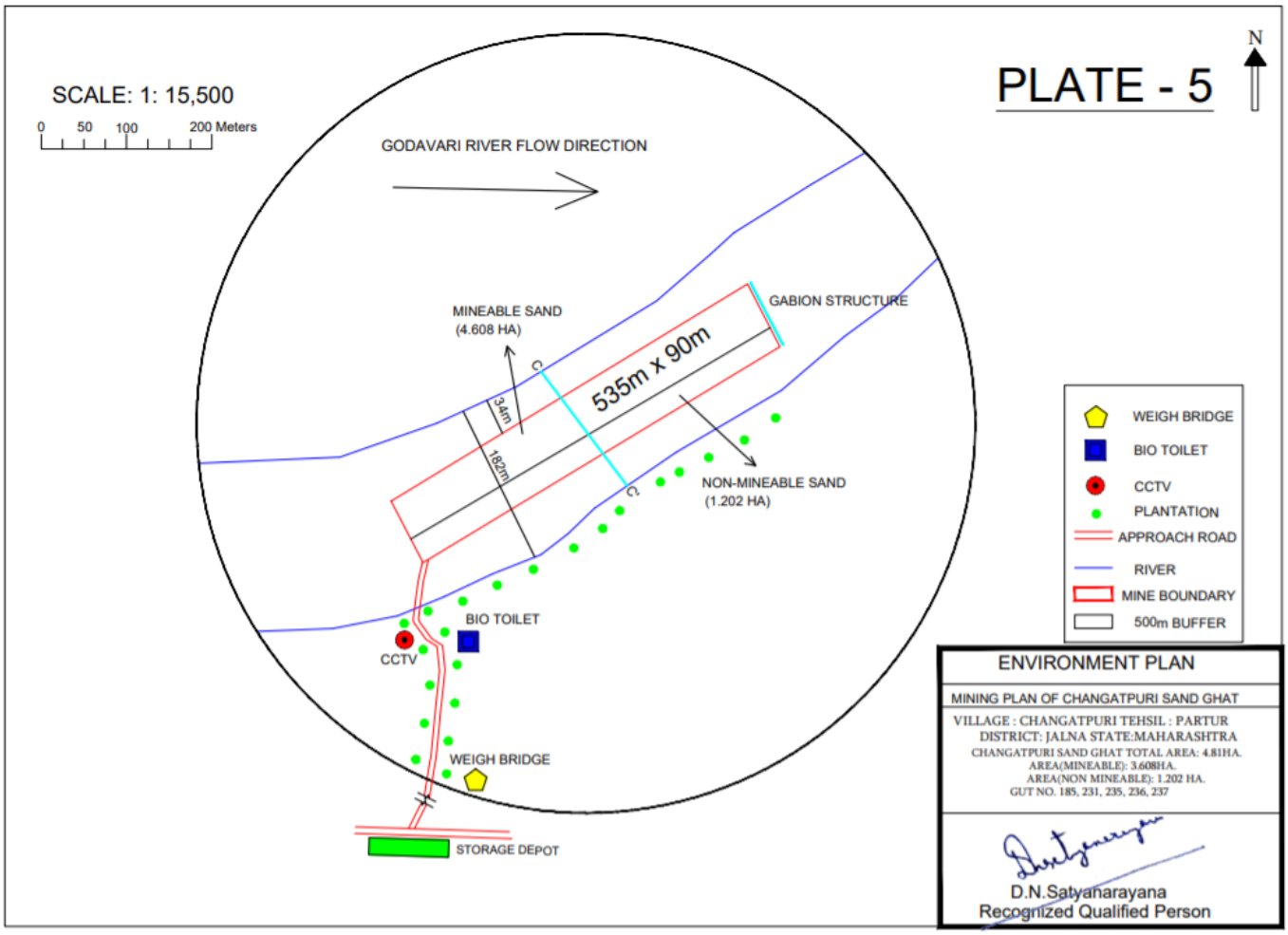
- Watermark
- GPS BASED VEHICLE TRACKING SYSTEM
- CCTV Camera

Cluster certificate with reference to the EIA Notification 2006 amended from time to time with specific remarks on the cluster formation in the periphery of the proposed sand ghat along with area map showing distances between adjoining sand mine areas.

Proposed Changatpuri sand ghat does not falls in cluster.

10 Layout of proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc.

Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.

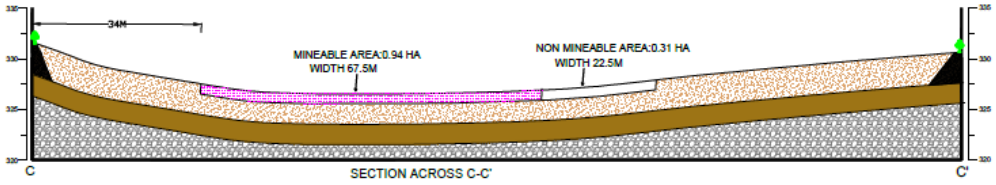
The proposed approach road length is at 297 m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach road near the river bank. Consent of road submitted by Partur

Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from landowner.

12. Cross -Section of riverbed showing distance of proposed sand mine area from the riverbank and other details as prescribed in the Enforcement & Monitoring Guidelines for sand mining published in January 2020 by MoEF&CC.

Cross section of riverbed is shown below:

PLATE - 5A



NOTE: SCALE TO X TO X' LINE **1:1000**
SCALE TO DEPTH **1:500**

LEGEND

REFERENCES	SYMBOLS
BOUNDARY	
MINEABLE SAND	
PEBBLE	
GRAVEL	
SOIL	
RL	745
SECTION LINE	C——C'

SCALE - 1 : 1000

RIVER CROSS SECTION

MINING PLAN OF CHANGATPURI SAND GHAT

VILLAGE : CHANGATHPURI, TEHSIL : PARTUR
DISTRICT: JALNA, STATE:MAHARASHTRA
CHANGATPURI SAND GHAT TOTAL AREA: 4.81 HA.
AREA(MINEABLE):3.608 HA.
AREA(NON MINEABLE): 1.202 HA.
GUT NO. 185, 231, 235, 236, 237,

GODAVARI RIVER

D.N.Satyanarayana
Recognized Qualified Person

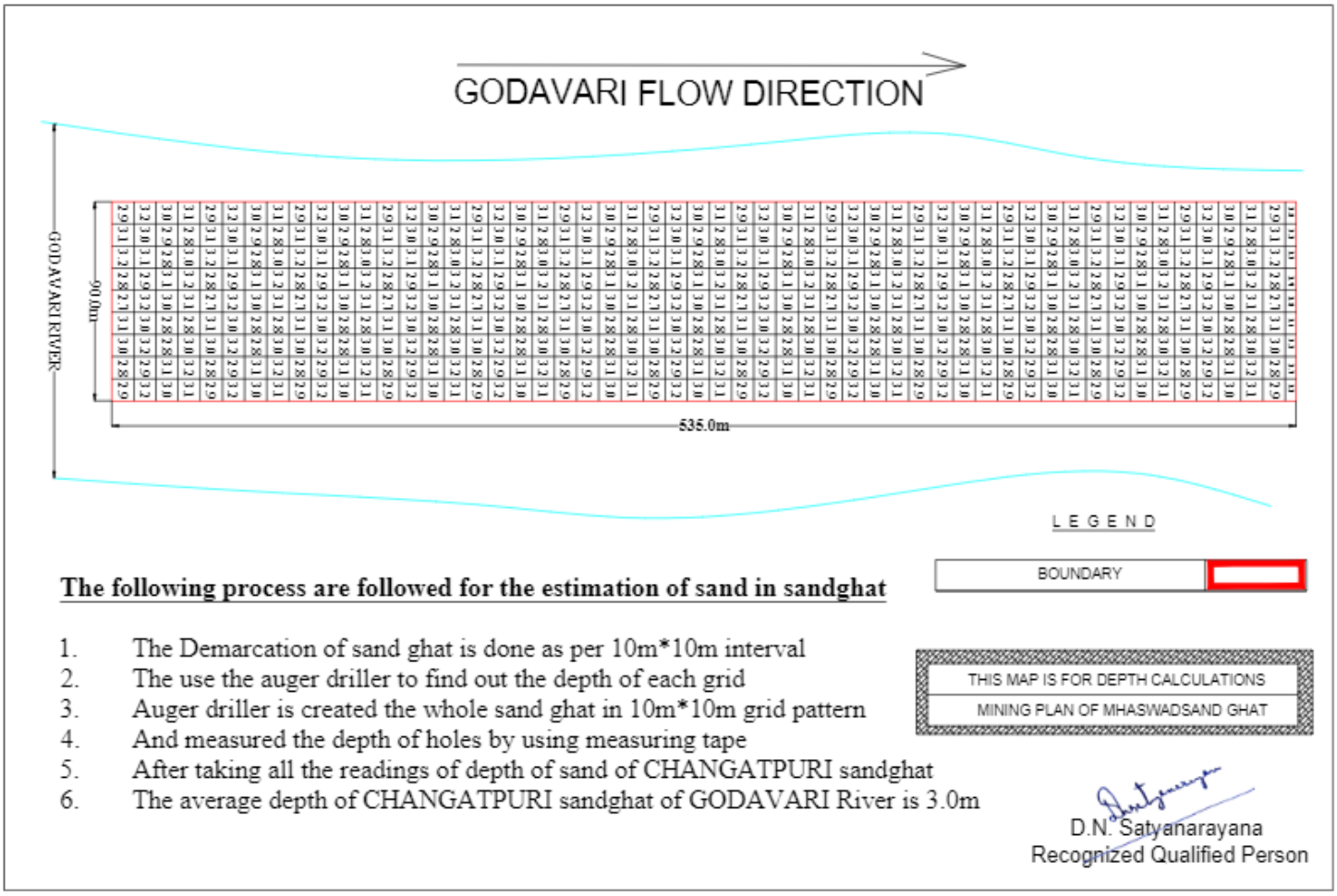
13. Replenishment

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in per and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.
- One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- Care was taken that the sample for assessment of bulk density is taken from the deposition zone & not from erosion.

14. Details of District Level Task Force committee meetings and status of compliance of its recommendations if any.

District Level Task Force Committee Meeting details is enclosed.

15. Methodology for Sand Mining:



The following process are followed for the estimation of sand in sandghat

1. The Demarcation of sand ghat is done as per 10m*10m interval
2. The use the auger driller to find out the depth of each grid
3. Auger driller is created the whole sand ghat in 10m*10m grid pattern
4. And measured the depth of holes by using measuring tape
5. After taking all the readings of depth of sand of CHANGATPURI sandghat
6. The average depth of CHANGATPURI sandghat of GODAVARI River is 3.0m

16. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.

DANDY-BOLTON EQUATION

1. For Runoff Less Than 2 Inches

   S=*1280*(Q)*0.46*(1.46-0.26log(A)) *F
2. For Runoff More Than 2 Inches

   S=*1958*(Q)*(e-0.055*Q) *(1.43-0.26log (A))

Where

S=sediment yield of stream (t/yr/km2),

Q= average annual runoff (m3),

A= net drainage area in sq. mile

DETAILS	YEARWISE RAINFALL (in mm) (Avg. Rainfall of the District 688.32 mm) June to October							
	2012	2013	2014	2015	2016	2017	2018	2019

Jalna	348.44	823.75	427.88	468.38	847.25	698.34	466.13	526.2
Badnapur	345.40	617.40	314.00	458.40	713.60	606.40	484.00	-
Bhokardan	292.50	785.13	467.38	493.50	674.25	650.65	366.66	-
Jafrabad	324.20	959.40	348.40	395.40	615.80	561.80	337.20	-
Partur	429.90	968.20	451.80	509.40	955.20	758.60	494.20	-
Mantha	314.25	860.25	312.25	446.00	765.75	705.25	530.00	-
Ambad	315.57	757.29	339.14	469.58	863.71	730.29	344.13	-
Ghansawan gi	229.57	538.57	269.71	403.71	819.29	680.70	373.43	-
Avg. Rainfall of the District 688.32 mm = 27.01 inch								

Net Catchment Area (A) in Sq. Mile			
S.No.	**River / Stream**	**In Sq. Km.**	**In Sq. Mile**
1	Godavari	100	38.61
2	Dudhana	126	48.65
3	Purna	93	35.91
4	Musa	17	6.56
5	Girija	23	8.88
6	Galhati	34	13.13
7	Khelna	41	15.83
8	Dhamana	50	19.31
9	Kundalika	50	19.31
10	Sukana	12	4.63
11	Jui	30	11.58
12	Lahuki	20	7.72
13	Jivrekha	2	0.77
14	Kalyani	32	12.36

Calculations & Replenishment Capacity of Rivers in District:

S. No	**Factors**		**Probable Replenishment**
1	**River**	**Godavari**	948.20 MT/KM^2/Yr or 36610.00 MT/year

	Catchment Area (A)	100 km^2	
	Average Annual Run off (Q)	688.32 mm	
	Sediment Yield Formula:		
	For Q < 2 in: S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q)*[1.43-0.26 Log (A)] Here: S = Sediment Yield (MT/Yr) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area ($mi^{2)}$ = 38.61 **So Sediment Yield (S) in Metric Tonne (MT): S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton formula.*		
	Conclusion: The area 100 km^2 is representing the catchment area of the Godavari river in the Jalna District. Thus, about 36610.00 MT/year sediment will be regenerated every year in the catchment area as replenishment against the mined out quantities.		
S. No	**Factors**		**Probable Replenishment**
2	**River**	**Dudhana**	923.11 MT/KM^2/Yr. or 44909.30 MT/year
	Catchment Area (A)	126 km^2	
	Average Annual Run off (Q)	688.32 mm	
	Sediment Yield Formula: **For Q < 2 in:** S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q)*[1.43-0.26 Log (A)] Here: S = Sediment Yield (MT/Yr.) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area ($mi^{2)}$ = 48.65 **So Sediment Yield (S) in Metric Ton (MT): S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton*		

	formula.		
	Conclusion: The area 126 km^2 is representing the catchment area of the Dudhana river in the Jalna District. Thus, about 44909.30 MT/year sediment will be regenerated every year in the catchment area as replenishment against the mined-out quantities.		
S. No	**Factors**		**Probable Replenishment**
3	**River**	**Purna**	955.82 MT/KM^2/Yr. or 34323.50 MT/year
	Catchment Area (A)	93 km^2	
	Average Annual Run off (Q)	688.32 mm	
	Sediment Yield Formula: **For Q < 2 in:** S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q)*[1.43-0.26 Log (A)] Here: S = Sediment Yield (MT/Yr.) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area ($mi^{2)}$ = 35.91 **So Sediment Yield (S) in Metric Ton (MT):** **S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton formula.*		
	Conclusion: The area 93 km^2 is representing the catchment area of the Purna river in the Jalna District. Thus, about 34323.50 MT/year sediment will be regenerated every year in the catchment area as replenishment against the mined out quantities.		
SNo	**Factors**		**Probable Replenishment**
4	**River**	**Girija**	1102.54 MT/KM^2/Yr. or 9790.56 MT/year
	Catchment Area (A)	23 km^2	
	Average Annual Run off (Q)	688.32 mm	
	Sediment Yield Formula: **For Q < 2 in:** S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q)*[1.43-0.26 Log (A)] Here: S = Sediment Yield (MT/Yr.) Metric		

	Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area ($mi^{2)}$ = 8.88 **<u>So Sediment Yield (S) in Metric Ton (MT):</u> S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton formula.*	
	Conclusion: The area 23 km2 is representing the catchment area of the Girija river in the Jalna District. Thus, about 9790.56 MT/year sediment will be regenerated every year in the catchment area as replenishment against the mined out quantities.	
S.No	**Factors**	
5	**River**	**Khelna**
	Catchment Area (A)	41 km^2
	Average Annual Run off (Q)	688.32 mm
	Sediment Yield Formula: **For Q < 2 in:** S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q)*[1.43-0.26 Log (A)] Here: S = Sediment Yield (MT/Yr.) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area ($mi^{2)}$ = 15.83 **<u>So Sediment Yield (S) in Metric Ton (MT):</u> S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton formula.*	**Probable Replenishment** 1042.02 MT/KM^2/Yr. or 16495.18 MT/year
S.No	**Factors**	**Probable Replenishment**
6	**River** — **Dhamna**	1021.11 MT/KM2/Yr Or 19717.63 MT/year
	Catchment Area (A) — 50 km^2	
	Average Annual Run off (Q) — 688.32 mm	
	Sediment Yield Formula:	

	For Q < 2 in: S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q)*[1.43-0.26 Log (A)] Here: S = Sediment Yield (MT/Yr.) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area ($mi^{2)}$ = 19.31 **So Sediment Yield (S) in Metric Ton (MT): S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton formula.*	
	Conclusion: The area 50 km2 is representing the catchment area of the Dhamana river in the Jalna District. Thus, about 19717.63 MT/year sediment will be regenerated every year in the catchment area as replenishment against the mined out quantities.	

(Source: State Irrigation Department) Summary of Replenishment Capacity of Rivers in District River wise:

S.No.	River / Stream	Catchment Area (A)	Catchment Area (A)	Avg. Annual Run Off (Q)	Avg. Annual Run Off (Q)	Sediment will be regenerated every year in the catchment area as replenishment against the mined-out quantities	
		Sq. Km.	Sq. Mile	mm	inch	MT/KM2/Yr.	MT/Year
1	Godavari	100	38.61	688.32	27.01	948.20	36610.00
2	Dudhana	126	48.65	688.32	27.01	923.11	44909.30
3	Purna	93	35.91	688.32	27.01	955.82	34323.50
4	Girija	23	8.88	688.32	27.01	1102.54	9790.56
5	Khelna	41	15.83	688.32	27.01	1042.02	16495.18
6	Dhamana	50	19.31	688.32	27.01	1021.11	19717.63

(Source: State Irrigation Department)

Conclusion:0

As per above data sedimentation yield for Godavari Rivers. The replenishment rate is sedimentation yield so much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

16 PP to submit details of proposed plantation plan along with its location and requisite permission to be obtained from the Competent Authority.

Plantation details are presented below:

Location of greenbelt	Both sides of approach road, On the riverbanks of both sides of the sand spot & nearby open areas. Haul Road outside riverbed.
No. of plants to be planted	832
Spacing of plants	2 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	**Local name**	**Importance**
Azadirachta Indica	Neem	Neem oil & neem products
Tectona Grandis	Teek	Antibacterial, Antifungal, Antiulcer
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties
Madhuca longifolia	Mahua	Acts as a Stimulant & cough relief,

18 BUDGET FOR CORPORATE ENVIRONMENT RESPONSIBILITY (CER)

About 2% fund of the project cost is allocated for Corporate Environment Responsibility (CER) activities as presented in below Table:

SNo.	Budget Allocated	Budget (In INR)
1	Installation of water tankers in nearby village	60000
2	Providing books and uniforms to nearby village school	20000
3	Awareness to local farmers to increase yield of crop and fodder	80000
4	Plantation in community areas	30000
5	Repair of village roads	200000
6	Community infrastructure development	200000
	Total	590000

19 Environmental Management Plan (EMP)

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR 13.10505 Lakh and recurring cost provision of about INR 5.07475 Lakhs has been kept in the project cost towards the environmental protection, control and mitigation measures and implementation of the EMP, this cost is born by bidder / lease holder. The budgetary cost estimate for the EMP is given in Table.

Table 6: Environmental Budget

S. No	Impact Source	Impact	Control measure	Changatpuri
1	Transport Road	On Air Quality	Compaction, gradation and drainage on both sides.	225000
		Road Degradation	Budget for Road Repairs and Maintenance from Approach Road to Main Road	44550
		Road Construction	Road Construction from Quarry to Access Road	74250
		Air Environment	Dust Suppression by Regular water spraying.	44550
			Air quality will be monitoring at impacted village. (For One Day Monitoring)	50000
			Health Checkup of Employees.	39600
2	Truck/ Tractor Movement	Air Quality	Sand carrying trucks will be effectively covered by tarpaulin to avoid escape of fines to the atmosphere. (2 Tarpaulin)	35000
			Regular monitoring of the exhaust fumes.	2500
			Barriers & Traffic Management Expenses. (Excluding Man Power Salary which is included in labour costs)	34155
3	Ramp and Sand Reach	Mining Operations	Regular ramp Inspection and Ramp maintenance. (Excluding Man Power Salary which is included in labour costs)	37125
			Provision of dusk masks.	15000
4	Bank Management	Bank Erosion/Flood Plain management	Green Belt along Road	148500
			Green belt along bank (For Green Belt Development)	267500
5	Final Mine Closer Plan implementation	Replenishment of Sand	Provisions of Gabion bunds for protection of bank erosion & replenishment facility.	22500
6	Mobile toilet, sewage handling & treatment		Mobile toilet, sewage handling & treatment	100000
7	CCTV Monitoring		CCTV Camera	60000
			CCTV Monitoring Framework	60000
8	Safety		Signage Boards	6000
			Fencing	18000
			Watching	25000
9	Drinking Water			60000
10	Sanitation			60000
11	Ground Water Monitoring	Water Environment	Ground Water Level monitoring of wells within 1 Km of Quarry Site	50000
			Piezometer installation at quarry location.	45000
12	Noise Monitoring	Noise Environment	Regular Maintenance of Vehicles	75000
13	Physical Survey		Provision for physical survey & associated works if	200000

		different funds aren't available.	
14	Development of Market Model	Provision for development of market model & associated works if different funds aren't available.	25000
15	Environmental Audit	Provision for third party environmental audit if different funds aren't available.	50000
		Total EMP Budget	1874230
		Capital Cost	1310505
		Recurring Cost	563725

20 Summary and Conclusion

The environmental status of the project site and study area of 10 km radius is delineated with respect to air, noise, water, land, biological and socio-economic environment the different project activities in the construction and operation phases are identified. To identify the impacts, the interaction between the project activities and different components of the environment are classified phase wise. A summary of the identified impacts is given in the following paragraphs.

During the operational phase, transportation of sand could cause a temporary disturbance to local environment which will be prevented with the proposed mitigation measures proposed in Point no. 4.

Proposed project will not have any major significant negative impacts. The minor impacts arising out during Excavation and Transportation phases can be mitigated with the help of the proposed Environmental Management Plan.

In general, Sand excavation from Changatpuri Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

PRE-FEASIBILITY REPORT

- District Collector Jalna vides his right to auction Sand as a minor mineral intends to auction the Sand in Jalna district.
- District Collector Jalna appointed M/s Integrated Precision Systems & Services Pvt. Ltd., for preparation of Mining Plan and grant of environmental clearance.
- Applicant proposed to auction the said Sand Spot over an area of 4.81 Ha area and identified for preparation of mining plan and for grant of Environmental Clearance.
- Mining Plans are prepared by Recognized Qualified Person and approved by Directorate of Geology & Mining Govt. of Maharashtra.
- About 12761 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Godavari riverbank.

1. Physiography

Changatpuri is a large village located in Partur Taluka of Jalna district, Maharashtra. Jalna District is an administrative district in the state of Maharashtra in Western India. Jalna is the district headquarters. The district is a part of Aurangabad division. It is located at a distance of 50KM from District headquarters Jalna, 28KM from Tehsil Partur.

The sand spot area is connected to approached road at a distance of 297 meters in the South direction, this road is further connected to village Mahatpuri then after connected to Main Road which is situated at a distance of 2km in South of the sand ghat spot. Jalna Railway Station is present at a distance of 50km. Area is covered in SOI Toposheet No-56A/4.

2. Local Geology

The local geology is Sand of various size up to depth of 2.0-2.5-meter depth.

3. Details of Exploration

The Sand Spot has sufficient Reserve of Sand to work at 36112.5 Cu.m for a specified period mentioned i.e. for 2020-21 from the date of auction/allotment whichever is earlier as per agreement from there the SandSpotwilldueforanotherMiningplan.TheminingwillcontinuewithopencastmethodofMiningby cutting 1.0 m slice of Sand by advancing from NW to SE direction as per allotted Sand Spot area and handling of material with the help of labors in to the tractor having capacity 1 Brass for transport of Sand to the various dealer site located outside Sand Spot area.

4. Introduction to Project/Background Information

The Changatpuri Sand Spot has been kept for Auction, which is situated at Village Changatpuri, Taluka Partur, and District Jalna and hence prior to go for Auction a Mining Plan and Environmental Clearance are required and hence Mining Plan is being prepared. The Sand Spot as 3.61Ha. of area in Gut No. 237, 236, 235, 231,185 of Changatpuri village of Partur Tehsil, Jalna district.

a. Brief Description of Project

The Sand Spot has sufficient Reserve of Sand to work at 36112.5 Cu.m for a specified period mentioned i.e. for 2020-21 from the date of auction/allotment whichever is earlier as per agreement from there the SandSpotwilldueforanotherMiningplan.TheminingwillcontinuewithopencastmethodofMinin

gby cutting 1.0 m slice of Sand by advancing from NW to SE direction as per allotted Sand Spot area and handling of material with the help of labors in to the tractor having capacity 1 Brass for transport of Sand to the various dealer site located outside Sand Spot area.

b. Need for the Project

The Sand or Sand Spot under reference is aimed at exploring Sand as ROM in various sizes i.e. fine to Coarse grain which is Transported to consumer site in outside Sand Spot area, for the infrastructure development i.e. Construction activity to produce Concrete for putting in the floor, roof- slabs, Column, Pillars, Bridges & Dam construction.

5. Project Description

This mining project is an independent project and not an interlinked project.

a. Location

Changatpuri is a large village located in Partur Taluka of Jalna district, Maharashtra. Jalna District is an administrative district in the state of Maharashtra in Western India. Jalna is the district headquarters. The district is a part of Aurangabad division. It is located at a distance of 50KM from District headquarters Jalna, 28KM from Tehsil Partur.

The sand spot area is connected to approached road at a distance of 297 meters in the South direction, this road is further connected to village Mahatpuri then after connected to Main Road which is situated at a distance of 2km in South of the sand ghat spot. Jalna Railway Station is present at a distance of 50km. Area is covered in SOI Toposheet No-56A/4. The GPS reading of boundary point are given below:

Boundary points of Changatpuri	Latitude	Longitude
B.P 1	19°17'27.68"N	76° 8'35.65"E
B.P 2	19°17'36.66"N	76° 8'51.40"E
B.P 3	19°17'34.02"N	76° 8'52.82"E
B.P 4	19°17'25.11"N	76° 8'37.04"E

b. Alternative Sites

No alternate site is proposed.

c. Magnitude of Operations

Proposed period for mining of sand will be decided by the office of district collectorate. 36112.5 cu.m. will be excavated during the period.

d. Raw Material, Marketing and Transportation of Ore

The Agency will start the work after getting Allocation Letter from the competent Authority by Opencast manual mining method. The size of the pit is mentioned as 535m Length X 67.5m Width at the end of

Sand Spot mining period. There will be no dumps of material inside the Sand Spot area as all the mined-out sand will be saleable.

The Sand Spot has sufficient Reserve of Sand to work at 36112.5 Cu.m for a specified period mentioned i.e., 1 year (2020-2021 from the date of mining plan approval as per agreement, from there the Sand Spot will be due for another Mining plan. The mining will continue with opencast method of Mining by cutting 1.0 m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborers into the tractor having capacity of 1 Brass for transport of Sand to the various dealer sites located outside the Sand Spot area.

e. Resource Optimization, Recycle and Reuse

The proposed sand spot will be auctioned and successful bidder will be responsible for carrying out mining operations as per environmental terms and conditions, approved mining method as per approved mining plan and other terms and conditions. The loading of Sand generated to the tractor/tipper/dumpers will be done by loaders & material transported to the Dealer site.

f. Water and Energy Requirement

The major water requirement in the lease area is for dust suppression and for drinking use. The total water requirement is estimated as 5.94 KLD. The required water for dust suppression can be arranged through tankers from nearby village and drinking water will be provided in earthen pots for labors. The vehicles used for transportation will use diesel of about 100-125 litres /day.

g. Quantity of Waste and Scheme for Management

There will not be any waste generation within the lease area.

h. Schematic Representation

It is a proposal of opencast manual sand mining from river bed. Mining plan is approved by the competent authority.

6. Site Analysis

a. Connectivity

Changatpuri is a large village located in Partur Taluka of Jalna district, Maharashtra. Jalna District is an administrative district in the state of Maharashtra in Western India. Jalna is the district headquarters. The district is a part of Aurangabad division. It is located at a distance of 50KM from District headquarters Jalna, 28KM from Tehsil Partur.

The sand spot area is connected to approached road at a distance of 297 meters in the South direction, this road is further connected to village Mahatpuri then after connected to Main Road which is situated at a distance of 2km in South of the sand ghat spot. Jalna Railway Station is present at a distance of 50km. Area is covered in SOI Toposheet No-56A/4.

b. Landuse, Form and Ownership

The ultimate land use pattern for the lease area of 4.81 ha. will be consisting of

1. Mining Area:	4.81 ha.
2. Construction of Temporary Roads:	0.00ha.
3. Total:	4.81 ha.

At present ownership of this sand spot area is in the hand of Govt. of Maharashtra, after approval of mining plan and EC quarry area will be transfer to bidder after auction.

c. Geology

There will be no change on geomorphology due to mining of sand as it will be excavated at surface level only. There is no major impact due to sand mining operation on habitat, noise, dust, vibrations, erosion, sedimentation, and negligence of the mined site.

d. Existing Geology

Existing Sand spot is a river bed having 2.0-2.5 m of sand.

e. Existing Land use Pattern

Existing Sand spot is a river bed having 2.0-2.5 m of sand.

f. Socio-Economic Environment

Critically analyzing the existing environmental status of the socio-economic profile and visualizing the scenario with the project, the impacts of the project would be varied and may generate positive impacts of the mining of sand quarry in the region that are stated below:

- The mining operations will provide direct & indirect employment village people.
- The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements
- Local work force will be given first preference for employment.
- Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

7. Planning Brief

The proposed project is opencast manual sand mining activity. The site services as per statute, like Mine office, store room, workshop, first aid Room & water point will be provided in outside Sand Spot area.

8. Tahsil Office Sand Information 2020-2021 Sand Demands for Gharkul

तालुका	घरकुलसाठी आवश्यक असलेली वाळू ब्रास
जालना	00
बदनापुर	00
जाफ्राबाद	45
भोकरदन	00
अंबड	150
घनसावंगी	2000
परतूर	4500
मंठा	50
एकुण	6745

9. On Going Government Civil / Infrastructural Works in the District 2020-21

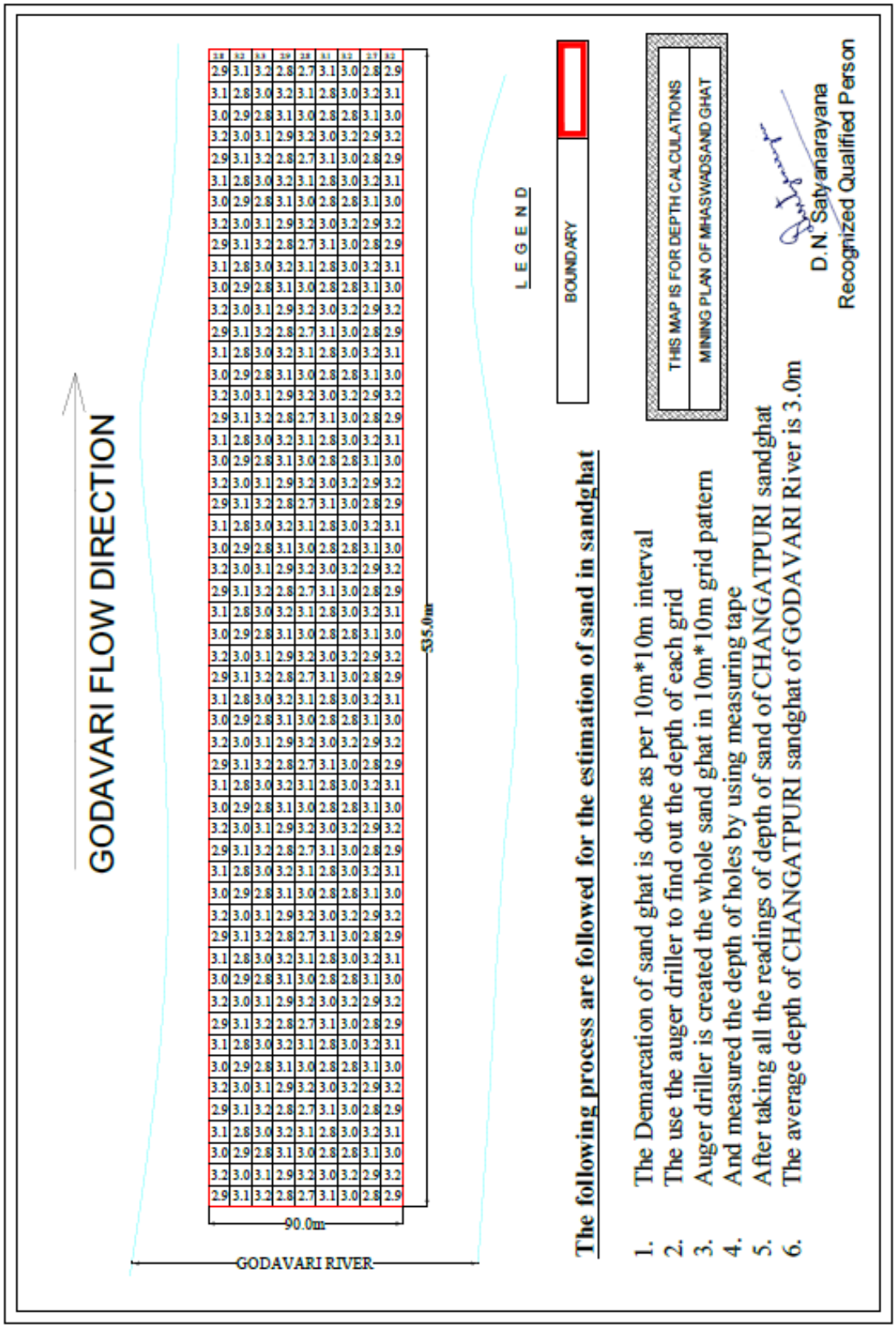
Name of Govt. Yojana	Details of Work	Approx. qty of sand required in brass
Gharkul	PMAY-G, Ramai Awas Yojna, Shabari Awas Yojna	16610
Irrigation Projects	Dam work	1445
Soil & Water Conservation	-	33800
State PWD	-	12000
Gram Sadak Yojna	Cement Road work,	5500
Total		69355

10. Replenishment

- Area of deposition and erosion was calculated for each cross-section after giving due regard to stability & safety of active channel banks & other features of importance.
- DGPS and other survey tools have been used to define topography, contours and offsets of lease area.
- Contour & elevation benchmarks are provided with the baseline data for assessing pre and post-study period scenario.
- Physical benchmarks are fixed at intervals (1 in 30 m) & Reduced Levels (RL) are validated from a nearby standard RL.
- These RL are engraved on a steel plate (Bench Plate) & are fixed & placed at locations which are free from any damages & are available in pre and post-study period.
- Bench plates are available for use during the mining period as reference for all mining activity.
- Baseline data on elevation status for a grid of 10 m x 10 m is taken to ensure the accuracy in the assessment.
- It was made sure that two consecutive cross-sections in longitudinal and lateral direction is not be more than 10-meter distance apart.
- Changes have been observed in the elevation in per and post scenario at each node and were depicted in graphical forms with an appropriate scale for estimating the area of deposition & erosion.
- Elevation level was placed in reference to the nearest bench-plates established for the purpose.
- The levels (MSL & RL) of corner point of each grid were identified and safety barriers (Non-Mining) are demarcated as restricted in consensus with Mineral Concession Rules of respective State, and the provision mentioned in this Sustainable Sand Mining Management Guidelines.
- A clear identification was highlighted between grids under mineable and grids under the non-mineable area. These baseline data (pre and post) was subjected to stimulation with the help of data mine software to derive at the replenishment area and corresponding volume and estimated weight.
- The database was structured in a tabulated form clearly depicting the nomenclature of the section lines, latitude and longitude of the starting point, chain-age and respective levels of all the points taken on that section line.
- Net area was derived after summation of area of deposition minus area of erosion for each cross-section.
- Volume was estimated by multiplying distance between two cross-sections with average of net area of these two consecutive cross-sections.
- One sample per 900 square meters (30 m x 30 m) was preferred for sample density for assessment of bulk density for estimation of deposition rate.
- Care was taken that the sample for assessment of bulk density is taken from the deposition zone &

not from erosion.

11. Replenishment study of sand in the proposed ghat along with details of methodology, technology used to identify the existing reserve and replenishment of the same.



12. Calculations & Replenishment Capacity of Rivers in District:

DANDY-BOLTON EQUATION

1.For Runoff Less Than 2Inches

S=*1280*(Q)*0.46*(1.46-0.26log(A)) *F

2.For Runoff More Than 2Inches

S=*1958*(Q)*(e-0.055*Q) *(1.43-0.26log (A))

Where

S=sediment yield of stream(t/yr./km2), Q= average annual runoff(m3),

A= net drainage area in sq.mile

DANDY-BOLTON EQUATION

1.For Runoff Less Than 2 Inches S=*1280*(Q)*0.46*(1.46-0.26log(A))*F

2.For Runoff More Than 2 Inches S=*1958*(Q)*(e-0.055*Q) *(1.43-0.26log(A))

Where

S=sediment yield of stream (t/yr/km2), Q= average annual runoff(m3),

A= net drainage area in sq.mile

DETAILS	YEARWISE RAINFALL (in mm) (Avg. Rainfall of the District 688.32 mm) June to October							
	2012	2013	2014	2015	2016	2017	2018	2019
Jalna	348.44	823.75	427.88	468.38	847.25	698.34	466.13	526.2
Badnapur	345.40	617.40	314.00	458.40	713.60	606.40	484.00	-
Bhokardan	292.50	785.13	467.38	493.50	674.25	650.65	366.66	-
Jafrabad	324.20	959.40	348.40	395.40	615.80	561.80	337.20	-
Partur	429.90	968.20	451.80	509.40	955.20	758.60	494.20	-
Mantha	314.25	860.25	312.25	446.00	765.75	705.25	530.00	-
Ambad	315.57	757.29	339.14	469.58	863.71	730.29	344.13	-
Ghansawan gi	229.57	538.57	269.71	403.71	819.29	680.70	373.43	-
Avg. Rainfall of the District 688.32 mm = 27.01 inch								

Net Catchment Area (A) in Sq. Mile			
S.No.	River / Stream	In Sq. Km.	In Sq. Mile
1	Godavari	100	38.61
2	Dudhana	126	48.65
3	Purna	93	35.91

4	Musa	17	6.56
5	Girija	23	8.88
6	Galhati	34	13.13
7	Khelna	41	15.83
8	Dhamana	50	19.31
9	Kundalika	50	19.31
10	Sukana	12	4.63
11	Jui	30	11.58
12	Lahuki	20	7.72
13	Jivrekha	2	0.77
14	Kalyani	32	12.36

S. No	Factors		Probable Replenishment
1	**River**	**Godavari**	948.20 MT/KM^2/Yr. or 36610.00 MT/year
	Catchment Area (A)	100 km^2	
	Average Annual Run off (Q)	688.32 mm	
	Sediment Yield Formula:		
	For Q < 2 in: S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q) *[1.43-0.26Log (A)] Here: S = Sediment Yield (MT/Yr) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area (mi$^{2)}$ = 38.61 **So** **Sediment Yield (S) in MetricTonne (MT): S = 1958*(e -0.055*Q) *[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton formula.*		
	Conclusion: The area 100 km^2 is representing the catchment area of the Godavari river in the Jalna District. Thus, about 36610.00 MT/year sediment will be regenerated every year in the catchment area as replenishment against the mined out quantities.		

S. No	Factors		Probable Replenishment
2	**River**	**Dudhana**	923.11 MT/KM^2/Yr. or 44909.30 MT/year
	Catchment Area (A)	126 km^2	
	Average Annual Run off (Q)	688.32 mm	

	Sediment Yield Formula: **For Q < 2 in:** S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q) *[1.43-0.26 Log (A)] **Here:** **S = Sediment Yield (MT/Yr.) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01** **A = Catchment Area (mi2) = 48.65 So Sediment Yield (S) in Metric Ton(MT): S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** **Source: Calculation of sediment yield by the Dandy - Bolton formula.**	
	Conclusion: The area 126 km^2 is representing the catchment area of the Dudhana river in the Jalna District. Thus, about 44909.30 MT/year sediment will be regenerated every year in the catchment area as replenishment against the mined-out quantities.	

S. No	**Factors**		**Probable Replenishment**
3	**River**	**Purna**	955.82 MT/KM^2/Yr. or 34323.50 MT/year
	Catchment Area (A)	93 km^2	
	Average Annual Run off (Q)	688.32 mm	
	Sediment Yield Formula: **For Q < 2 in:** S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q)*[1.43-0.26Log (A)] Here: S = Sediment Yield (MT/Yr.) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area ($mi^{2)}$ = 35.91 **So Sediment Yield (S) in Metric Ton (MT): S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton formula.*		
	Conclusion: The area 93 km^2 is representing the catchment area of the Purna river in the Jalna District. Thus, about 34323.50 MT/year sediment will be regenerated every year in the catchment area as replenishment against the mined-out quantities.		

SNo	**Factors**		**Probable Replenishment**
4	**River**	**Girija**	1102.54 MT/KM^2/Yr.
	Catchment Area (A)	**23 km2**	or 9790.56 MT/year
	Average Annual Run off (Q)	**688.32 mm**	
	Sediment Yield Formula: **For Q < 2 in:** S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q) *[1.43-0.26Log (A)]		

	Here: S = Sediment Yield (MT/Yr.) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area ($mi^{2)}$ = 8.88 **<u>So Sediment Yield (S) in Metric Ton(MT):</u> S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton formula.*	
	Conclusion: The area 23 km2 is representing the catchment area of the Girija river in the Jalna District. Thus, about 9790.56 MT/year sediment will be regenerated every year in the catchment area as replenishment against the mined out quantities.	
S. No	**Factors**	
5	**River**	**Khelna**
	Catchment Area (A)	41 km^2
	Average Annual Run off (Q)	688.32 mm
	Sediment Yield Formula: **For Q < 2 in:** S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q) *[1.43-0.26Log (A)] Here: S = Sediment Yield (MT/Yr.) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area ($mi^{2)}$ = 15.83 **<u>So Sediment Yield (S) in Metric Ton(MT):</u> S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton formula.*	**Probable Replenishment** 1042.02 MT/KM^2/Yr. or 16495.18 MT/year
S. No	**Factors**	**Probable Replenishment**
6	**River** — **Dhamna** Catchment Area (A) — 50 km^2 Average Annual Run off (Q) — 688.32 mm	1021.11 MT/KM2/Yr Or 19717.63 MT/year

	Sediment Yield Formula: **For Q < 2 in:** S=1280*(Q) 0.46 *[1.43-0.26 Log (A)] **For Q > 2 in:** S= 1958*(e -0.055*Q)*[1.43-0.26Log (A)] Here: S = Sediment Yield (MT/Yr.) Metric Tonnes/year Q = Mean Annual runoff (inch)= 27.01 A = Catchment Area ($mi^{2)}$ = 19.31 **So** **Sediment Yield (S) in Metric Ton(MT): S = 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]** *Source: Calculation of sediment yield by the Dandy - Bolton formula.*	
	Conclusion: The area 50 km2 is representing the catchment area of the Dhamana river in the Jalna District. Thus, about 19717.63 MT/year sediment will be regenerated every year in the catchment area as replenishment against the mined-out quantities.	

13. Summary of Replenishment Capacity of Rivers in District River wise:

S.No.	River / Stream	Catchment Area (A)	Catchment Area (A)	Avg. Annual Run Off (Q)	Avg. Annual Run Off (Q)	Sediment will be regenerated every year in the catchment area as replenishment against the mined out quantities	
		Sq. Km.	Sq. Mile	mm	inch	MT/KM2/Yr.	MT/Year
1	Godavari	100	38.61	688.32	27.01	948.20	36610.00
2	Dudhana	126	48.65	688.32	27.01	923.11	44909.30
3	Purna	93	35.91	688.32	27.01	955.82	34323.50
4	Girija	23	8.88	688.32	27.01	1102.54	9790.56
5	Khelna	41	15.83	688.32	27.01	1042.02	16495.18
6	Dhamana	50	19.31	688.32	27.01	1021.11	19717.63

14. Conclusion

The replenishment rate of rivers – The sedimentation yield is much more than permitted sand mining quantity. Hence, the sand mining is safe of environmentally friendly.

15. Sand Ghat Site specific enforcement & monitoring plan as per guidelines stipulated in the Enforcement and Monitoring Guidelines for sand mining issued by MoEF&CC in January2020

- District administration shall provide detailed information on its website about the sand mines in its district for public information with an objective to extend all information in public domain so that the citizens are aware of the mining

activities and can also report to the district administration on any deviation observed.

- Appropriate feedback and its redressal mechanism shall also be made operational.
- Details shall include, but not limited to, lease area, geo-coordinates of lease area and mineable area, transport routes, permitted capacity, regulatory conditions for operation including mining, environmental and social commitments etc.
- Independent committee of the expert constituted by DLTF will assess the environmental or ecological damage caused due to illegal mining and recommend recovery of environmental compensation from the miner's concern.
- TherecommendationmayalsoincludeactionundertheprovisionofE(P)Act,1986.

It will be ensured that following security features are included in the Transport Permission/Permits (TP) so that duplicate/fraudulent/forged TPs for transport, not accounted for in the IT-based system, is not possible:

- Printed on Indian Bank Association (IBA)Approved
- Magnetic Ink Character Recognition Code (MICR)paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- CCTV at mine lease site
- GPS Based Vehicle Tracking System

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided outside Sand Spot area.

16. Compliance of earlier Environmental Clearance

- Last time Jalna district had got 08 sand Ghats Environment clearance. Out of these 08 sand Ghats were allotted to sand scooping. At time of allocation sand Ghats owner were deposited EMD, EMP amount and GB to collector office.
- During sand Ghats operating period so or tahsildar level team verify the given term and conditions time to time. If sand Ghats owner complied all given term and conditions his deposit like EMD, EMP amount and GB refunded.
- In this way year 2018-19, 05 sand Ghats owner and concern tahsildar submitted the EC and sand mining policy terms and conditions compliance report. Some photographs of EC compliance shown in ppt.

17. Proposed Infrastructure

The site services as per statute, like Mine office, storeroom, workshop, first aid Room & water point will be provided in outside Sand Spot area.

18. R&R Plan

R&R is not involved.

19. Project Schedule

Period of mining for the proposed sand spot will be decided by the Office of District Collectorate.

20. Analysis of Proposal

Description of the project included in items 1-10 above indicates the following:

1. It is proposed for opencast manual river sandmining.
2. Opencast mining without hampering the present environmental quality of the area.
3. Income to local people is uncertain & initiation of mining will ensure regular income to local people.

21. Costing

Costing parameters will be decided by the District Authorities.

22. Any other Information

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

No, there are not any serious violation of safety rules and regulation, which may jeopardize human health and safety. The applicant has given a commitment in this effect and undertaking also given to follow and implement, as specified in the mining plan. The applicant is undertake to abide and implement any special conditions imposed by various authorities and also to complete formalities under provision of the Mines & Mineral (Development & Regulation) Act, 1957 and the Bombay Minor Mineral rules, the Mineral Conservation and Development Rules, 1988 as amended, the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule 2013, MoEF & CC Notification S.O. 141 (E) dated 15th January 2016, and MoEF & CC Sustainable Sand Mining Management Guidelines 2016, Sustainable Sand Mining Management Guidelines 2019,Sand Mining Policy 2020.

Whether there are any serious violation of safety rules and regulation which may jeopardize human health and safety. If so, give details of violations and state the steps proposed to be taken with the time scheduled to rectify the violations:

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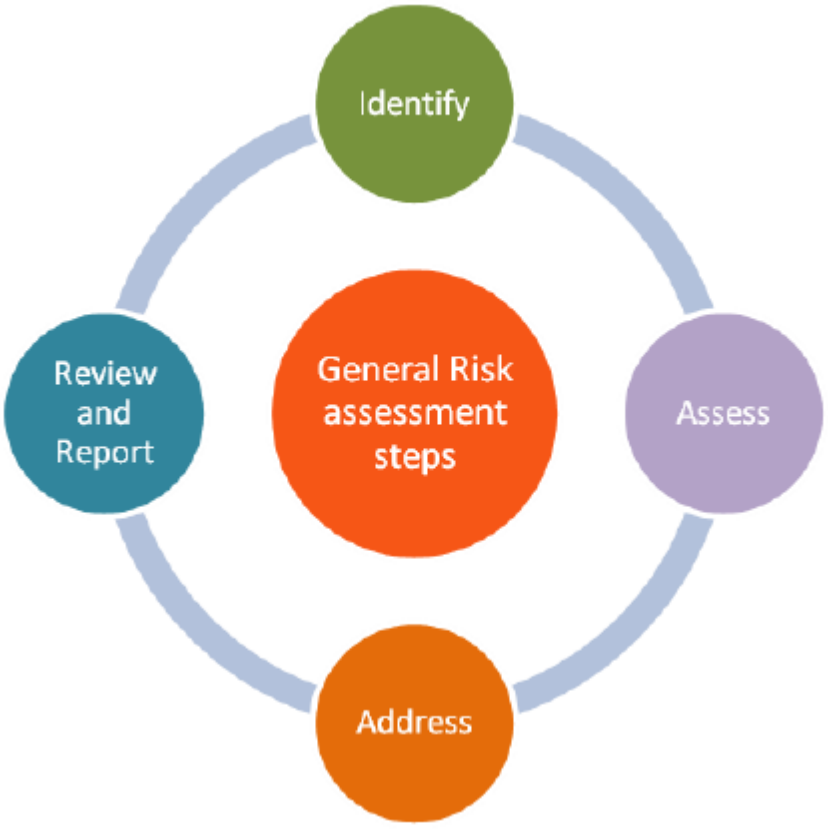
Risk Assessment for Changatpuri Sand Spot

1. Introduction

A main principle of risk assessment is that it should take place before any changes are made. Risks should be assessed and control measures are put into action before new work is introduced or systems are changed. The process should influence budgets and allocation of resources, rather than being an afterthought when the decisions have already been made.

The risk management process is continuous, with well-defined steps that support better decision making by contributing greater insight into risks and their impacts. Risks from all sources are identified and once they pass the materiality threshold, a formal process begins in which causal factors and consequences are identified and the correlation with other risks and the current risk mitigating strategy is reviewed. One of the challenges is to ensure that mitigating strategies are geared to deliver reliable and timely risk information to support better decision-making.



The mining operations at CHANGATPURI SAND SPOT are subjected to the risks and hazards normally encountered in open-cast mining operations. These risks include operational risks relating to

materials handling, accidents, removing material from quarry area. Mining processes also rely on key inputs, for example fuel. Appropriate insurance can provide protection from some, but not all, the costs that may arise from unforeseen events. If any of these risks should materialize, such an event could result in serious harm to employees and contractors, delays in production, increased production costs and possible increase in liabilities.

Disruption to the supply of key inputs, or changes in their pricing, may have a material and adverse impact on CHANGATPURI SAND SPOT asset values, costs, earnings and cash flows. Failure to meet production target results in increased unit costs. The impact is more pronounced at operations with a high level of fixed costs. Mitigation strategies include efforts to secure strategic supplies at competitive prices, energy reduction, and application of group water management guidelines, adoption of lean production principles and practices and business improvement initiatives to reduce unit costs.

There are certain aspects which should be taken care of, in a quarrying plan with accordance of risk management.

Components	Risk Involved
Land Slides	The continues mining of river sand may affect, on the long run, the stability of banks of the river which in turn may lead to land slides
Fire	Only trucks and tractors will make use of diesel for transportation. Diesel is not so highly inflammable but accidental fires can take place.
Road Accidents	Vehicles are used for transporting the material from quarry area to the buyer's location. Due to some improper maintenance of the vehicle a road accident can occur leading to fatal results.

To minimize the risk, certain measures can be taken like implying safety rules, facilities of basic first aid near the site and having training for the workers about personal safety.

Disaster Management Plan is envisaged with a goal to prevent hazards and accidents at work places by careful design, operation, and maintenance of equipments. All safety precautions and provisions of Metalliferous Mines Regulation-1961 will be strictly followed. Suitable control measures will be adopted to take care of hazards/disasters that may occur during mining operation.

- Fire fighting, first aid provisions & safety appliances will be made available to the staff and their use regularly checked
- Regular maintenance of all haulage roads & mining machinery as per manufacturer's guidelines will be done