अमळनेर, चोपडा ,धरणगाव, एरंडोल आणि यावल तालुके, जळगाव जिल्हा, महाराष्ट्रातील नऊ (9) वाळूच्या ठिकाणांची जनसुनावणी.

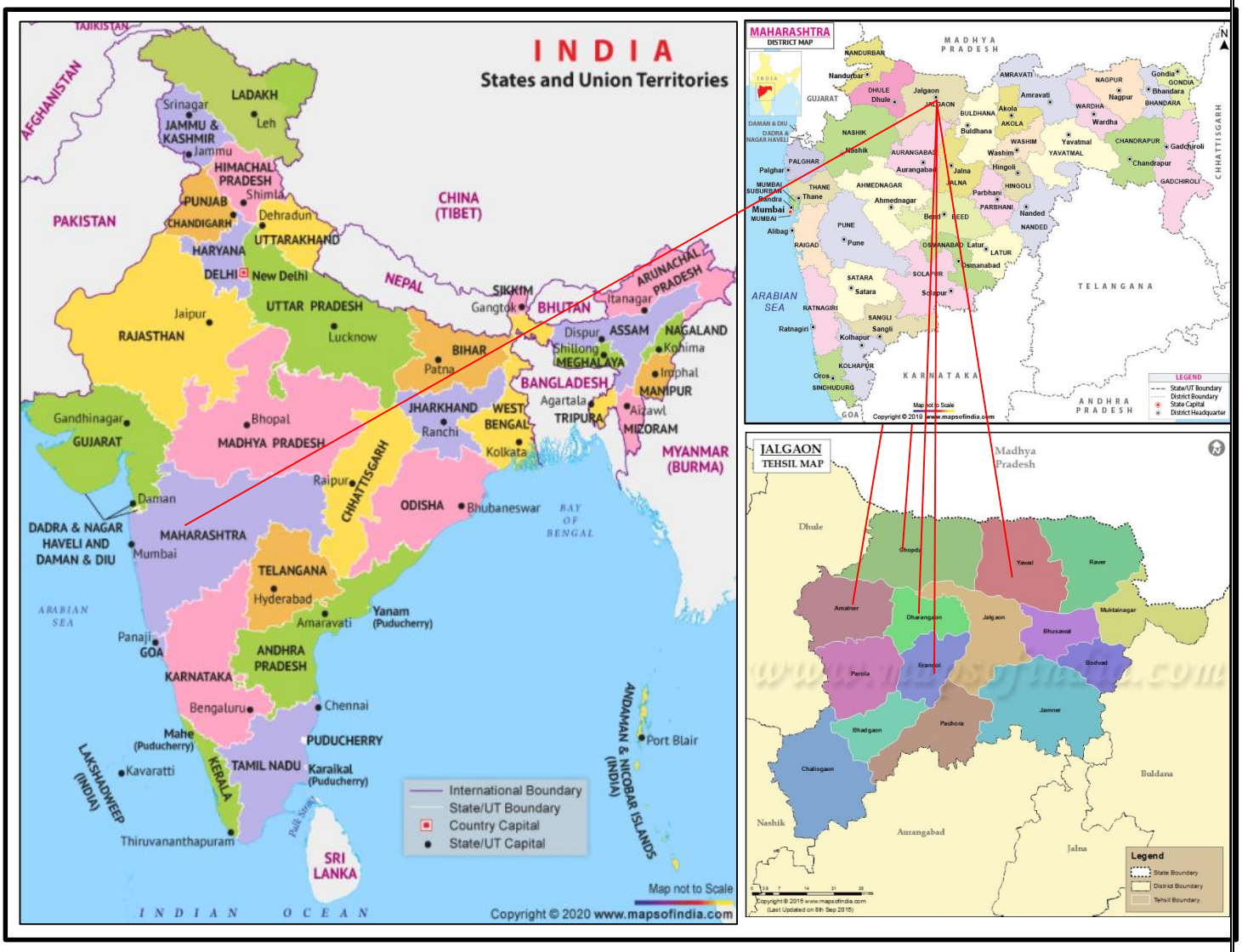
<u>सारांश</u>

1. **परिचय :-**

अमळनेर, चोपडा ,धरणगाव, एरंडोल आणि यावल तालुके, जळगाव जिल्हा, महाराष्ट्रातील नऊ (9) वाळूच्या ठिकाणांसाठी पर्यावरणीय मंजुरी मागितली आहे.

- **मे. इंटिग्रेटेड प्रिसिजन सिस्टम्स अँड सर्व्हिसेस प्रा. लि. यांना जिल्हाधिकारी कार्यालयाद्वारे जळगावच्या वाळूच्या ठिकाणांसाठी पर्यावरणीय मंजुरी मिळवण्याचे काम देण्यात आले आहे.**
- **वरील रेती घाटांच्या खाण योजनांना भूविज्ञान आणि खाण संचालनालय (DGM), नागपूर यांनी 17 जुलै 2023 रोजी मान्यता दिली आहे.**
- **फॉर्म -1 एम, पीएफआर, ईएमपी, डीएसआर मधील अर्ज आणि वाळूच्या स्पॉट्ससाठी मंजूर खाण योजनांसह पर्यावरणीय मंजुरीसाठी सार्वजनिक सुनावणी प्रक्रियेसह सबमिट केले जाईल.**

2. **स्थळ नकाशा :-**



अमळनेर, चोपडा ,धरणगाव, एरंडोल आणि यावल तालुके, जळगाव जिल्हा, महाराष्ट्रातील नऊ (9) वाळूच्या ठिकाणांची जनसुनावणी.

3. स्थळ नकाशा :-

अ. क्र	गाव / वाळूचा घाट	तालुका	नदीचे नाव	लगतचा गॅट क्रमांक / सर्वेक्षण / खसरा क्रमांक.	लांबी X रुंदी X खोली (मीटर)	एकूण वाळू उपलब्धता	खाण व्याप्ती क्षेत्र (हेक्टर मध्ये)
1	जालोद	अमळनेर	तापी	3 & 4	250*40*3	1.00	3534
2	बुधगांव	चोपडा	तापी	428, 429 & 430	380*50*2.5	1.90	3357
3	नांदेड	धरणगाव	तापी	12 &13	330*45*3	1.49	5247
4	बांभोरी प्रा.चा.	धरणगाव	गिरणा	311,31,305,299 & 298	480*30*2.5	1.44	2544
5	उत्रान ए.एच	एरंडोल	गिरणा	17	150*70*2.5	1.05	1855
6	पिंपरी	यावल	तापी	1,2,3,6,7,8,9,10,12,13, 16,273,274 & 275	532*20*2.5	1.06	1880
7	शिरागड	यावल	तापी	2, 6, 128 & 129	648*16*3	1.04	3664
8	पाथराळे	यावल	तापी	3 & 158	563*18*3	1.01	3581
9	थोरगव्हाण	यावल	तापी	1 & 2	565*18*3	1.02	3594

4. उत्खननाची पध्दत :-

- **अ) उत्खननाची पध्दत - ड्रिलींग आणि ब्लास्टिंग पध्दतीचा वापर न करता वाळू घाटातून वाळूचे उत्खनन करण्यात येईल. फक्त कुदळ, पावडी, घमेले यासारख्या साधनांचा वापर करुन मजूरांव्दारे कोरडया नदी पात्रातून वाळूचे उत्खनन करण्यात येईल.**
- **ब) यंत्रे / उपकरणे आवश्यक :- पावडी, घमेला, ट्रॉलीसह ट्रॅक्टर.**
- **क) वाहतूक:- वाळूच्या जागेपासून डेपोसाठी निश्चित केलेल्या जागे पर्यत व ग्राहकांना ट्रॅक्टर ट्रॉलीद्वारे.**
- **पुर्नभरण प्राप्तीकरण :- उघडे पडलेले क्षेत्र पावसाव्यानंतर आपोआप पुन्हा भरले जाईल. नदीकाठ व वाहतुकीच्या रस्त्यालगत वृक्षारोपण केले जाईल.**

5. <u>पर्यावरण व्यवस्थापन योजना</u>

अ) वायू प्रदूषण नियंत्रण उपाय यंत्रणा :-

- **वाळू वाहतुकीसाठी वापरल्या जाणा-या कच्या रोडवर वेळोवेळी पाणी शिंपडले जाईल.**
- **ट्रॅक्टर ट्रॉली व ट्रकवर ताडपत्री अच्छादूनच वाळूची वाहतूक टप्या-टप्याने केली जाते.**
- **वाहतुकीदरम्यान वाळूची गळती होणार नाही याची पुरेपुर काळजी घेण्यात येईल.**
- **नदीकाठी व वाळूच्या जागे जवळील मोकळ्या जागेवर वृक्षारोपण केले जाईल.**

ब) ध्वनी नियंत्रण उपाय :-

- **उत्खनन व वाळू वाहतूक केवळ दिवसा केली जाईल.**
- **अल्प प्रमाणात ध्वनीप्रदुषण अपेक्षित असेल.**
- **गाडयांचा आवाज कमी करण्यासाठी वाळू वाहतूक करणा-या वाहनांची नियमित देखभाल केली जाईल.**
- **वाळू वाहतूक वाहनांच्या गती नियंत्रीत केल्या जातील.**

अमळनेर, चोपडा ,धरणगाव, एरंडोल आणि यावल तालुके, जळगाव जिल्हा, महाराष्ट्रातील नऊ (9) वाळूच्या ठिकाणांची जनसुनावणी.

क) जल प्रदूषण नियंत्रण उपाय :-

- **वाळू उत्खनन केवळ कोरड्या नदीच्या पात्रातूनच केले जाईल.**
- **उत्खनन केलेल्या खड्ड्याची खोली नदीच्या पाण्याच्या पातळीपेक्षा वर ठेवली जाईल.**
- **नदीचा प्रवाह कृत्रीमरित्या वळविला जाणार नाहीत.**
- **नदी पात्रात वाहने धुण्यास मनाई राहील.**
- **उत्खननातून कोणत्याही सांडपण्याचा प्रवाह तयार होणार नाही.**

- **कामगारांसाठी फिरते शौचालयांची व्यवस्था राहील.**
- **पावसाळ्यात आणि पूरात उत्खनन टाळण्यात येईल. जेणे करुन नविन वाळूचा थर जमा होण्यास मदत होईल.**

ड) जमीन प्रदुषण नियंत्रण :-

- **कोरड्या नदीच्या पात्रात वाळू उत्खननामुळे तात्पुरते खड्डे तयार होतील, जे पावसाळ्यात पुन्हा भरुन येतील**

- **नदीच्या रूंदीच्या तीन मीटर किंवा <u>रूंदीच्या 1/10 व्या जागेचे सुरक्षा अंतर नदीच्या काठापासून</u> (**"Sustainable sand mining guidelines"**) सोडले जाईल.**
- **पॉलिथीन पिशवी, जूट पिशवी इत्यादी कचरा नदीच्या पात्रात राहू/सांडण्याची परवानगी राहणार नाही.**
- **उत्खननास दिलेल्या परवानगी पेक्षा जास्त उत्खनन होणार नाही.**
- **नदीकाठी आणि जवळपास मोकळ्या जागेवर वृक्षारोपण केले जाईल.**

6. **<u>हरित पट्टा निर्माण योजना</u> :-**

हरित पट्टयाची जागा	**लीजच्या सीमेच्या दोन्ही बाजूंच्या आणि नदीकाठच्या बाहेर कच्या रोडच्या कडेला**
दोन रोपामधील अंतर	**4 मीटर**
प्रजातींची निवड	**चांगल्या प्रजातींची शिफारस केली जाईल.**

वृक्षारोपणांसाठी चांगल्या प्रजातींची शिफारस :-

वृक्षाच्या जातीचे नाव	**स्थानिक नाव**	**महत्व**
आझादिरक्ता इंडिका	**कडुलिंब**	**तेल उत्पादन**
टेक्टोना ग्रँडिस	**टीक**	**एंटीबैक्टीरियल, अँटीफंगल**
बांबूसा वल्गारिस	**बांबू**	**एन्थेलमिंटिक अँटी-इंफ्लेमेटरी, अॅस्ट्रिंजंट प्रॉपर्टीज**

7. **<u>व्यावसायिक आरोग्य सुरक्षा व्यवस्थापन :-</u>**
   - **खाण चालकांना वैयक्तिक संरक्षणात्मक उपकरणे दिली जातील.**
   - **कान, डोळा आणि हाताचे संरक्षणाची साधने या व्यतिरिक्त सुरक्षा हेल्मेट आणि पादत्राणे दिली जातील.**
   - **कामगारांना डस्ट मास्क दिले जातील.**
   - **खाण कामगारांसाठी पिण्याच्या पाण्यासाठीची सोय करुन देण्यात येईल.**
   - **खाण साइटवर प्रथमोपचार किट प्रदान केले जाईल.**

8. निष्कर्ष :-

- **अमळनेर, चोपडा ,धरणगाव, एरंडोल आणि यावल तालुके, जळगाव जिल्हा, महाराष्ट्रातील नऊ (9) वाळूचे ठिकाण MoEFCC मार्गदर्शक तत्त्वांनुसार B2 श्रेणीत येतात.**
- **उत्खननाच्या कमी प्रमाणामुळे पर्यावरणावर परिणाम होण्याची शक्यता नाही आणि त्यामुळे हे गावाच्या फायद्याचे ठरेल.**
- **प्रस्तावित प्रकल्प स्थानिक रहिवाशांना अप्रत्यक्ष रोजगाराच्या संधी प्रदान करेल.**
- **प्रस्तावित प्रकल्प सामाजिक पायाभूत सुविधा आणि या क्षेत्राच्या सर्वांगीण विकासास सकारात्मक योगदान देईल.**
- **हवा, पाणी, ध्वनी, माती, घनकचरा व्यवस्थापन इ. सारख्या सर्व पर्यावरणीय प्रश्नांवर MoEF&CC मार्गदर्शक सूचनांनुसार कार्य केले जाईल.**

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: Nanded Sand Spot

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

Boundary points of Nanded	Latitude	Longitude
BP1	21° 9'8.71"N	75°16'26.42"E
BP2	21° 9'3.64"N	75°16'16.34"E
BP3	21° 9'4.93"N	75°16'15.60"E
BP4	21° 9'10.01"N	75°16'25.68"E

(iii) Size of the Mining Lease (Hectare): 1.49 HA

(vi) Capacity of Mining Lease (TPA): 5247Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 31.48200 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, 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 etc.	Bridge on SH-14, 4.16Km, W
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower	 Dharangaon Railway Station, 16.2Km, S NH-53, 20.8Km, SE SH-14, 4.16Km, W Nanded Salva Road, 1.83Km, S 1.0Km, SW ET, 1.28Km, SW

	Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	Hatnur Right Bank Canal, 9.30Km, N 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 Tapi River bed; Girna Nadi, 4.18Km, SE
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	Tapi River Bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53, 20.8Km, SE SH-14, 4.16Km, W Nanded Salva Road, 1.83Km, S
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Dharangaon, 15.2Km, S
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Nanded English School, 1.28Km, SW Shardha Hospital - General hospital, 25.4Km, SW
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed (this is the case of river sand mining) Girna Nadi, 4.18Km, SE
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,	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.

	erosion, flooding or extreme or adverse climatic conditions)	
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or 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.	No
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, Forest & Climate Change (MoEF&CC) 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

Nanded is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Nanded Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 34.1 KM towards SE from District headquarters Jalgaon. The Sand Ghat is 342 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 624 m in West direction. Dharangaon Railway Station is present at a distance of 16.2 km.

Area covered in SOI Toposheet No- 46O/8. The GPS reading of boundary point are given below:

Table 1: Salient Features of the Project

<table>
<tr><th>Items</th><th>Details</th></tr>
<tr><td>Location</td><td>Village- Nanded, Tehsil- Dharangaon District-Jalgaon, Maharashtra.</td></tr>
<tr><td>Latitude and Longitude</td><td>
<table>
<tr><th>Boundary points of Nanded</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>B.P 1</td><td>21° 9'8.71"N</td><td>75°16'26.42"E</td></tr>
<tr><td>B.P 2</td><td>21° 9'3.64"N</td><td>75°16'16.34"E</td></tr>
<tr><td>B.P 3</td><td>21° 9'4.93"N</td><td>75°16'15.60"E</td></tr>
<tr><td>B.P 4</td><td>21° 9'10.01"N</td><td>75°16'25.68"E</td></tr>
</table>
</td></tr>
<tr><td>Sand spot area (In Ha)</td><td>1.49</td></tr>
<tr><td>Proposed production capacity (In Brass)</td><td>5247</td></tr>
<tr><td>Manpower Requirement (considering 3-month period)</td><td>24 labours + 1 mate + 1 Supervisor=26 manpower</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 24X 7 daily.
3. One Computer / Android base Mobile for the online generation of Invoice number.</td></tr>
<tr><td>Water requirement & source</td><td>4.4 KLD – Tankers from nearby village.</td></tr>
<tr><td>Project cost INR (Lakh)</td><td>31.482 Lakhs</td></tr>
</table>

3 Baseline Environmental Status

i. Topography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Girna valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Girna valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Girna River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Girna river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Girna valley and southern hills. In Girna alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Dharangaon, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.

The slope of Sand Spot area is towards SW side ranging from Contour 170 to 166 from MSL i.e 6m. The Highest contour value is 170 and lower is 166. The flow direction of Tapi river is towards SW.

ii. Hydrology

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 1m 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 no impact on flow of water.

iii. Soil Environment

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 1m. There is no major impact on soil of the study area 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 waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 1m 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 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 1m that too 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&CC 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

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

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 wild life 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 analysing 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:

A. The mining operations will provide direct & indirect employment village people.
B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
C. Local work force will be given first preference for employment.
D. 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.
   - Improper disposal of packing material, carried by the workers like 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 banks 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 project area gives a clear idea about the need for the project.
- A major portion of the houses in the study area are semi- pucca type structures.
- 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, which can be managed by providing face mask.

c. Human Settlement:

There are no houses in and around lease area. 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 less 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 consider for calculation
1	Area under mining / pit	-	1.49	1.49	1.49	1.49
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			1.49	1.49	1.49	1.49

- ❖ 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.

Supply demand ratio:

Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available in district in Brass**

1	Jalgaon	191380	104531

8 Compliance of earlier Environmental Clearance

- Nanded has got earlier Environment clearance in the year 2016-2017. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

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:

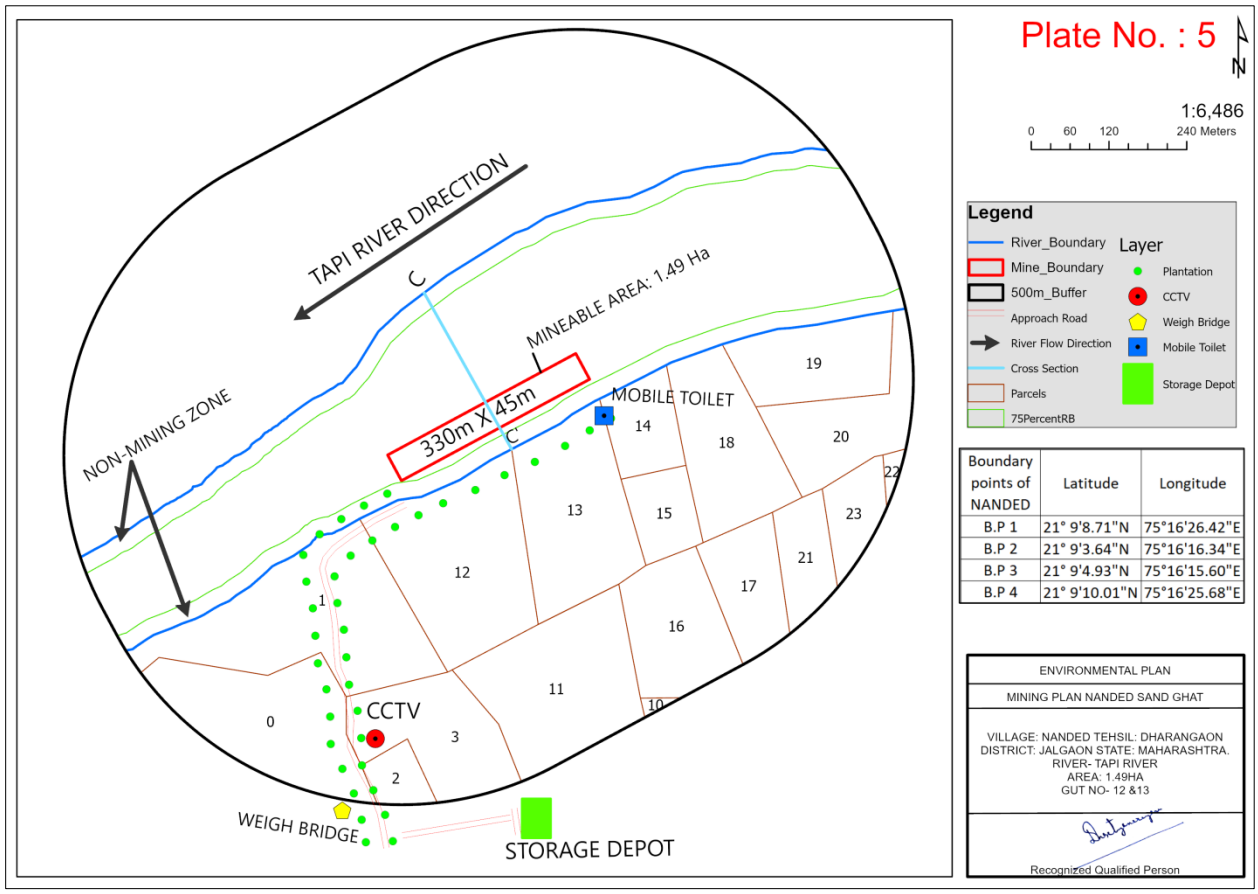
- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- GPS BASED VEHICLE TRACKING SYSTEM
- CCTV Camera

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.

Nanded does not form a 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:

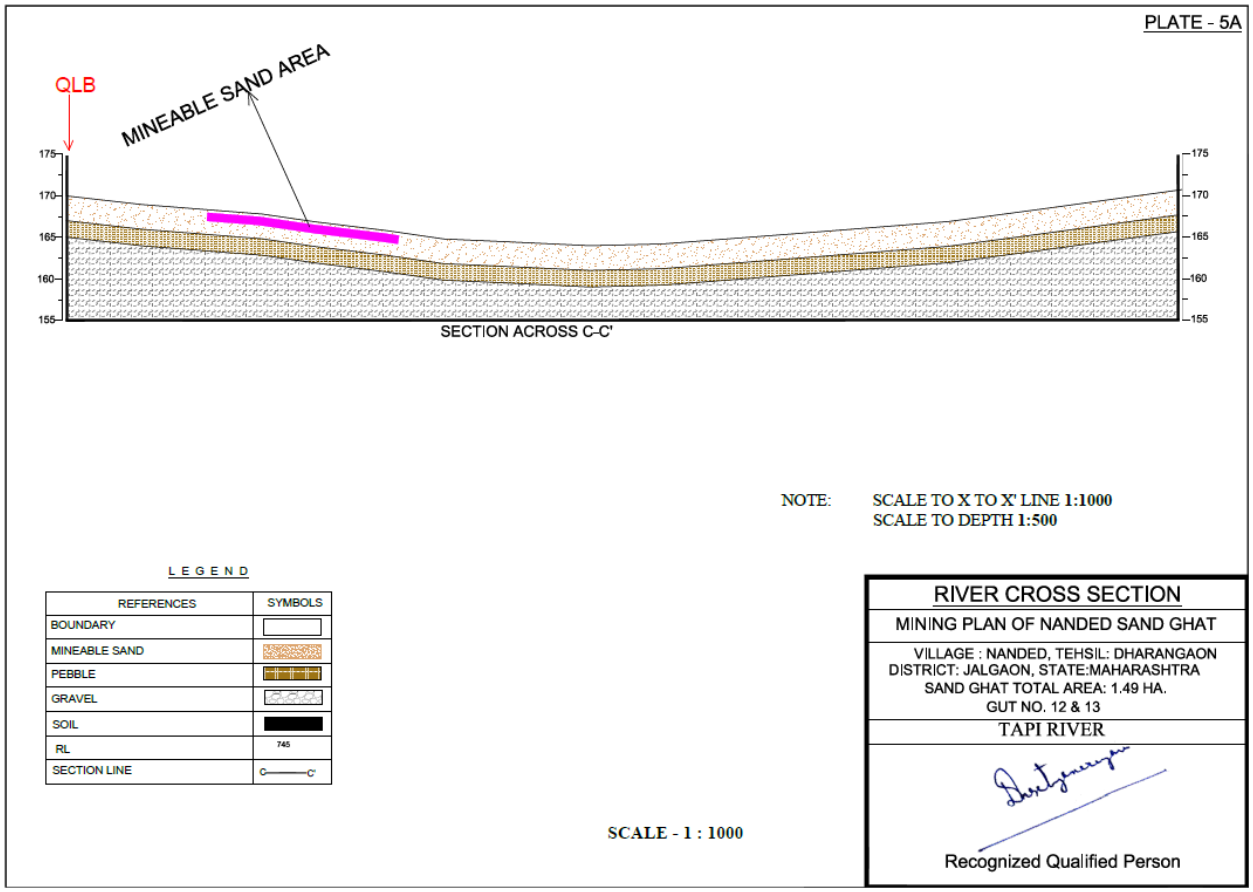


11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.

The proposed approach road length is at 624m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Dharangaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

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.

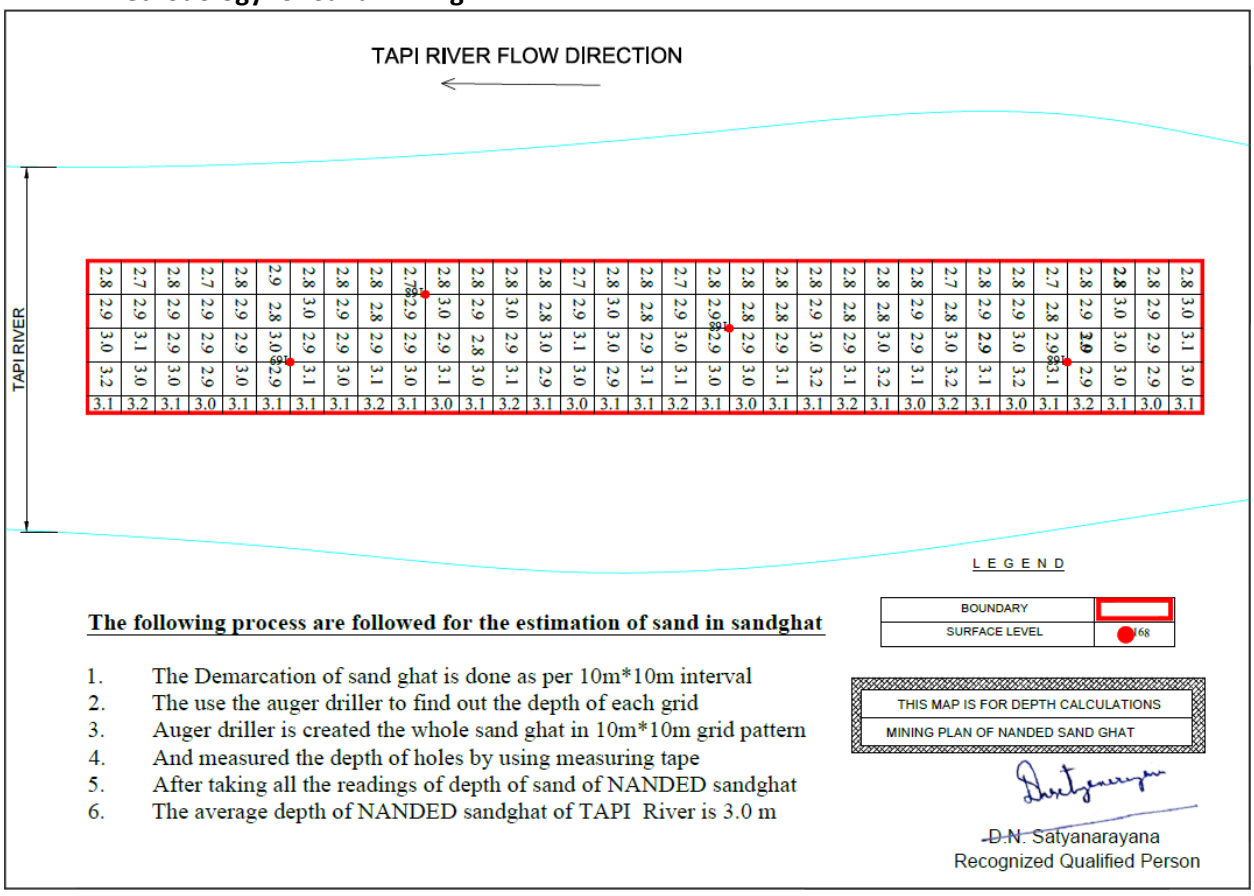
Cross section of riverbed is shown below:



13. 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.

14. 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 NANDED sandghat
6. The average depth of NANDED sandghat of TAPI River is 3.0 m

15. 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*(16-0.26log(A)) *F

2. **For Runoff More Than 2 Inches**

   S=*1958*(Q)*(e-0.055*Q) *(13-0.26log (A))

Where

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

Q= average annual runoff (m3),

A= net drainage area in sq. Mile

The sediment yield of Tapi river at Hatnur dam station are 1.08*1023 tonnes/year/km2 by Dandy-Bolton Equation

(Source: State Irrigation Department)

Conclusion:

As per above data sedimentation yield for Tapi River. 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	395
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	**Local name**	**Importance**
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

17 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 one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Colouring to Zp school with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Water purifier with chilled to ZP school with consultation of Grampanchayat)	70000
	Total	2,00,000

18 Environmental Management Plan (EMP)

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **2,57,250** and recurring cost provision of about INR **3,22,160** 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

		Nanded	EMP Budget		
SNo.	**Component**	**Description**	**Capital cost Rs.**	**Recurring Cost Rs.**	**Total Cost in Rs**
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	31200	31200
3	Approach Road Maintenance		-	24960	24960
4	Green Belt Plantation	Along the River Bank	41250	-	41250
		Along the Approach Road	156000	-	156000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	30000	-	30000
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	90000	90000
7	Security	Display Boards and other security	10000		10000

		measures			
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./Employee)	-	26000	26000
9	Tarpaulin Cover (5000 INR per one Cover)		20000		20000
		Total	**2,57,250**	**3,22,160**	**5,79,410**

19 Public Consultation Report

Dharangaon					
S.No	**Villager Name/Village,Taluka**	**Type of Person (Villager/Government Official)**	**Query raised by the Villager/Official**	**Response from the Proponent**	**Action Plan**

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 on surrounding environment and social life. 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 Nanded Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

PRE-FEASIBILITY REPORT

The Nanded Sand Spot is situated at Village Nanded, Taluka Dharangaon, District- Jalgaon. Sand Spot is 1.49 HA of area in Gut No. 12 & 13 of Nanded village of Dharangaon Tehsil, Jalgaon district. Detail of the project is summarised below,

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon 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 1.49 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 5247 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

1. Physiography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The slope of Sand Spot area is towards SW side ranging from Contour 166 to 170 from MSL i.e 6m. The Highest contour value is 170 and lower is 166. The flow direction of Tapi river is towards SW.

2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3 meter.

3. Details of Exploration

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 1 m of Sand along topo-relief, by advancing from NE to SW direction as per allotted area by auction. The production can be at the rate of 14850 Cu.m or 5247 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.49HA

Introduction of the project/ background information

The Nanded Sand Spot has been kept for Auction which is situated at Village Nanded, Taluka Dharangaon, and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

i) Brief description of project

The Sand Spot has sufficient Reserve of Sand to work at 14850 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 1 m area of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

ii) 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.

3. Project Description

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

i) Location

Nanded is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Nanded Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 34.1 KM towards SE from District headquarters Jalgaon. The Sand Ghat is 342 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46O/8.

The boundary pillars of Sand Spot area are given below with GPS values.

Boundary points of NANDED.	Latitude	Longitude
B.P 1	21° 9'8.71"N	75°16'26.42"E
B.P 2	21° 9'3.64"N	75°16'16.34"E
B.P 3	21° 9'4.93"N	75°16'15.60"E
B.P 4	21° 9'10.01"N	75°16'25.68"E

ii) Alternate Sites

No alternate site is proposed.

iii) Magnitude of Operation

Proposed period for mining of sand will be decided by the office of district collectorate 14850 cu.m. will be excavated during the period.

iv) Project description-mining details

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 330m L X 45m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable.

The Sand Spot has sufficient Reserve of Sand to work at 14850 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 1 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 laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

v) Raw material, marketing & transport of ore

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.

vi) Resource optimization, recycle, reuse

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

vii) Water & 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 4.4 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 labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

viii) Quantity of waste & scheme for management

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

ix) Schematic Representations

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

4. Site Analysis

i) Connectivity

Nanded is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India.
The sand spot area is connected to approach road at a distance of 624 m in West direction. Dharangaon Railway Station is present at a distance of 16.2 km.

ii) Land Use, form & Ownership

The ultimate land use pattern for the lease area of 1.49ha. will be consisting of

1. Mining Area : 1.49ha.
2. Construction of Temporary Roads : 0.00 ha.
3. Total : 1.49ha.

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.

iii) Geology

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

Existing land use pattern

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

Social-Economic Environment

Critically analysing 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:

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

Planning brief:

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available of district in Brass**

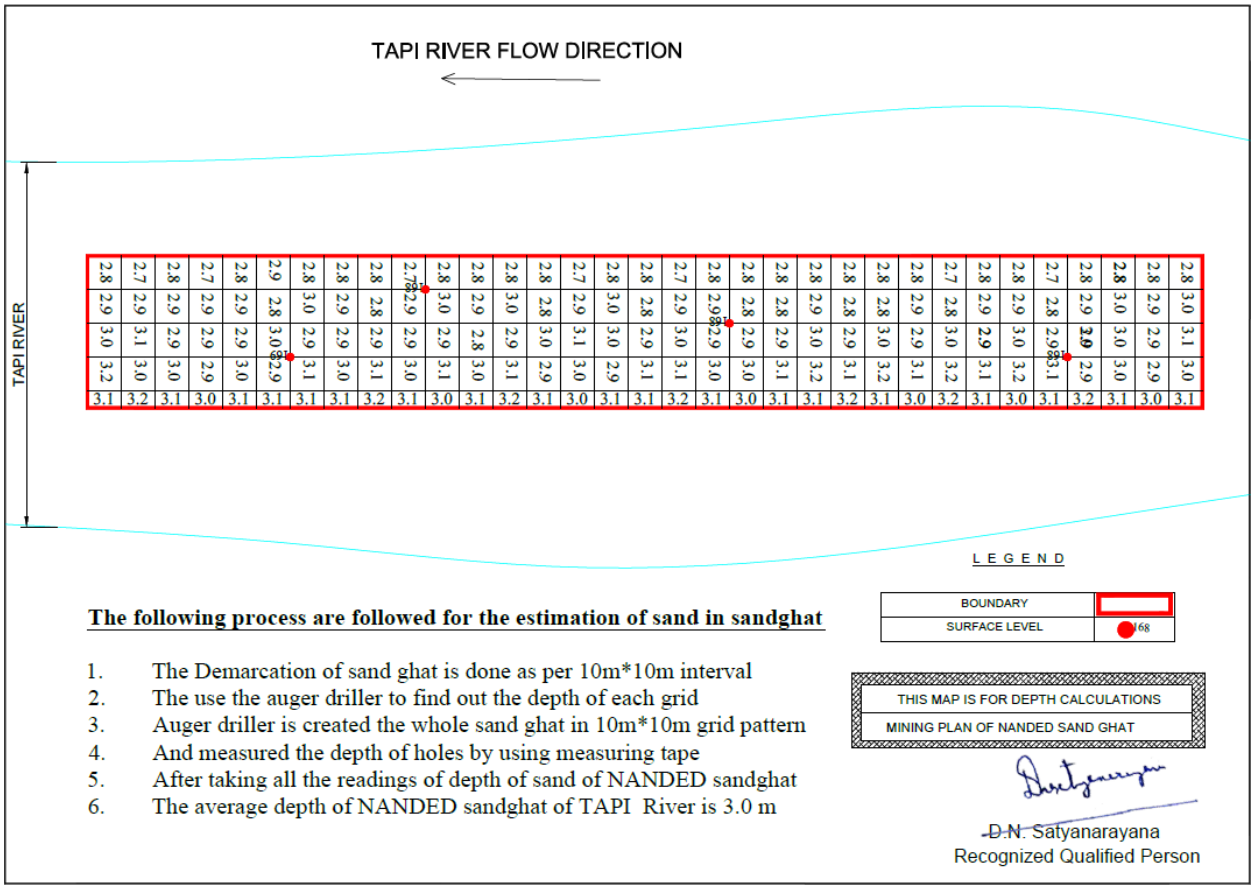
1	Jalgaon	191380	104531

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.

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.



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 NANDED sandghat
6. The average depth of NANDED sandghat of TAPI River is 3.0 m

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

The sediment yield of Tapi river at Hatnur dam station are 1.08*1023 tonnes/year/km2 by Dandy-Bolton Equation **(Source: State Irrigation Department)**

Conclusion:

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

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
- 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.

Compliance of earlier Environmental Clearance

- ❖ Nanded has got earlier Environment clearance in the year 2016-2017. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

7. 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.

8. R&R Plan

R&R is not involved.

9. Project schedule

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

10. Analysis of Proposal

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

1. It is proposed for opencast manual river sand mining.
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.

11. Costing

Costing parameters will be decided by the District Authorities.

12. Compliance to Environment Clearance

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

13. Any Other Information:

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of the Maharashtra Minor Minerals Extraction (Development and Regulation) Rule-2013, MoEF & CC Notification

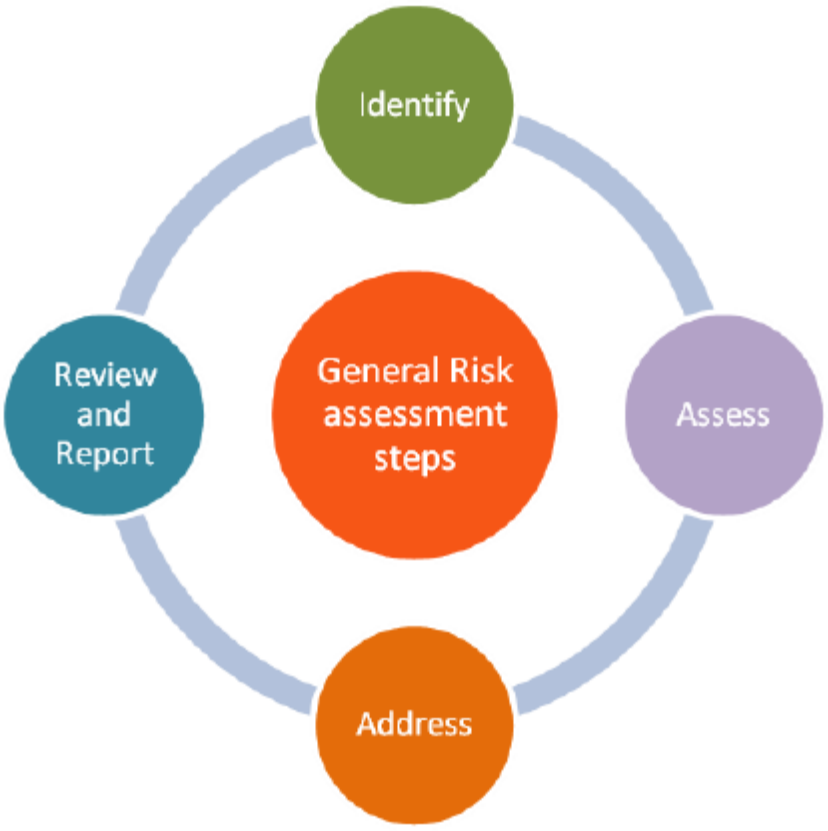
S.O. 141 (E) dated 15th January 2016, and MoEF & CC Sustainable Sand Mining Management Guidelines 2016, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

Risk Assessment for Nanded 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 NANDED 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 NANDED 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**
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
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 equipment's. 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.

- No mining activities during rainy days or just after heavy rain.
- 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

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: Bambhori Pra.Cha. Sand Spot

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

Boundary points of Bambhori Pra.Cha.	Latitude	Longitude
BP1	21° 0'37.67"N	75°30'34.36"E
BP2	21° 0'22.49"N	75°30'30.48"E
BP3	21° 0'22.72"N	75°30'29.47"E
BP4	21° 0'37.90"N	75°30'33.35"E

(iii) Size of the Mining Lease (Hectare): 1.44HA

(vi) Capacity of Mining Lease (TPA): 2544Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 15.264 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, 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 etc.	Bridges on NH-53, 744m,N
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower	 Paldhi Railway Station, 5.27Km, NW NH-53, 744m,N SH-186, 6.87Km, NE Savkheda Rd, 1.52Km, SE 0.71Km, W ET, 0.75Km, NW

	Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	Kantai Dam, 5.1Km, S 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 Girna River bed; Tapi River, 15Km, N
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	Girna River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53, 744m,N SH-186, 6.87Km, NE Savkheda Rd, 1.52Km, SE
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Jalgaon, 3.16Km, E
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Rukmai English Medium School, 1.1Km, SW Saichhaya Hospital, 4.88Km, NW
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed (this is the case of river sand mining) Tapi River, 15Km, N
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,	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.

	erosion, flooding or extreme or adverse climatic conditions)	
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or 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.	No
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, Forest & Climate Change (MoEF&CC) 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

Bambhori Pra. Cha. is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Bambhori Pra. Cha. Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 2.15 KM towards West from District headquarters Jalgaon. The Sand Ghat is 349 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 1320 m in West direction. Jalgaon Railway Station is present at a distance of 5.6 km.

Area covered in SOI Toposheet No- 46O/12. The GPS reading of boundary point are given below:

Table 1: Salient Features of the Project

<table>
<tr><th>Items</th><th>Details</th></tr>
<tr><td>Location</td><td>Village- Bambhori Pra. Cha., Tehsil- Dharangaon District- Jalgaon, Maharashtra.</td></tr>
<tr><td>Latitude and Longitude</td><td>
<table>
<tr><th>Boundary points of Bambhori Pra. Cha.</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>B.P 1</td><td>21° 0'37.67"N</td><td>75°30'34.36"E</td></tr>
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<tr><td>B.P 4</td><td>21° 0'37.90"N</td><td>75°30'33.35"E</td></tr>
</table>
</td></tr>
<tr><td>Sand spot area (In Ha)</td><td>1.44</td></tr>
<tr><td>Proposed production capacity (In Brass)</td><td>2544</td></tr>
<tr><td>Manpower Requirement (considering 3-month period)</td><td>12 labours + 1 mate + 1 Supervisor=14 manpower</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 24X 7 daily.
3. One Computer / Android base Mobile for the online generation of Invoice number.</td></tr>
<tr><td>Water requirement & source</td><td>7.2 KLD – Tankers from nearby village.</td></tr>
<tr><td>Project cost INR (Lakh)</td><td>15.264 Lakhs</td></tr>
</table>

3 Baseline Environmental Status

i. Topography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Girna valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Girna valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Girna River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Girna river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Girna valley and southern hills. In Girna alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Dharangaon, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.

The slope of Sand Spot area is towards North side ranging from Contour 201 to 195 from MSL i.e 6m. The Highest contour value is 201 and lower is 195. The flow direction of Girna River is towards North

ii. Hydrology

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m 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 no impact on flow of water.

iii. Soil Environment

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area 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 waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m 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 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too 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&CC 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

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

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 wild life 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 analysing 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:

A. The mining operations will provide direct & indirect employment village people.
B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
C. Local work force will be given first preference for employment.
D. 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.
   - ❖ Improper disposal of packing material, carried by the workers like 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 banks 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 project area gives a clear idea about the need for the project.
- A major portion of the houses in the study area are semi- pucca type structures.
- 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, which can be managed by providing face mask.

c. Human Settlement:

There are no houses in and around lease area. 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 less 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 consider for calculation
1	Area under mining / pit	-	1.44	1.44	1.44	1.44
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			1.44	1.44	1.44	1.44

- ❖ 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.

Supply demand ratio:

Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available in district in Brass**

1	Jalgaon	191380	104531

8 Compliance of earlier Environmental Clearance

- Bambhori Pra. Cha. Has got earlier Environment clearance in the year 2020-2021. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

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:

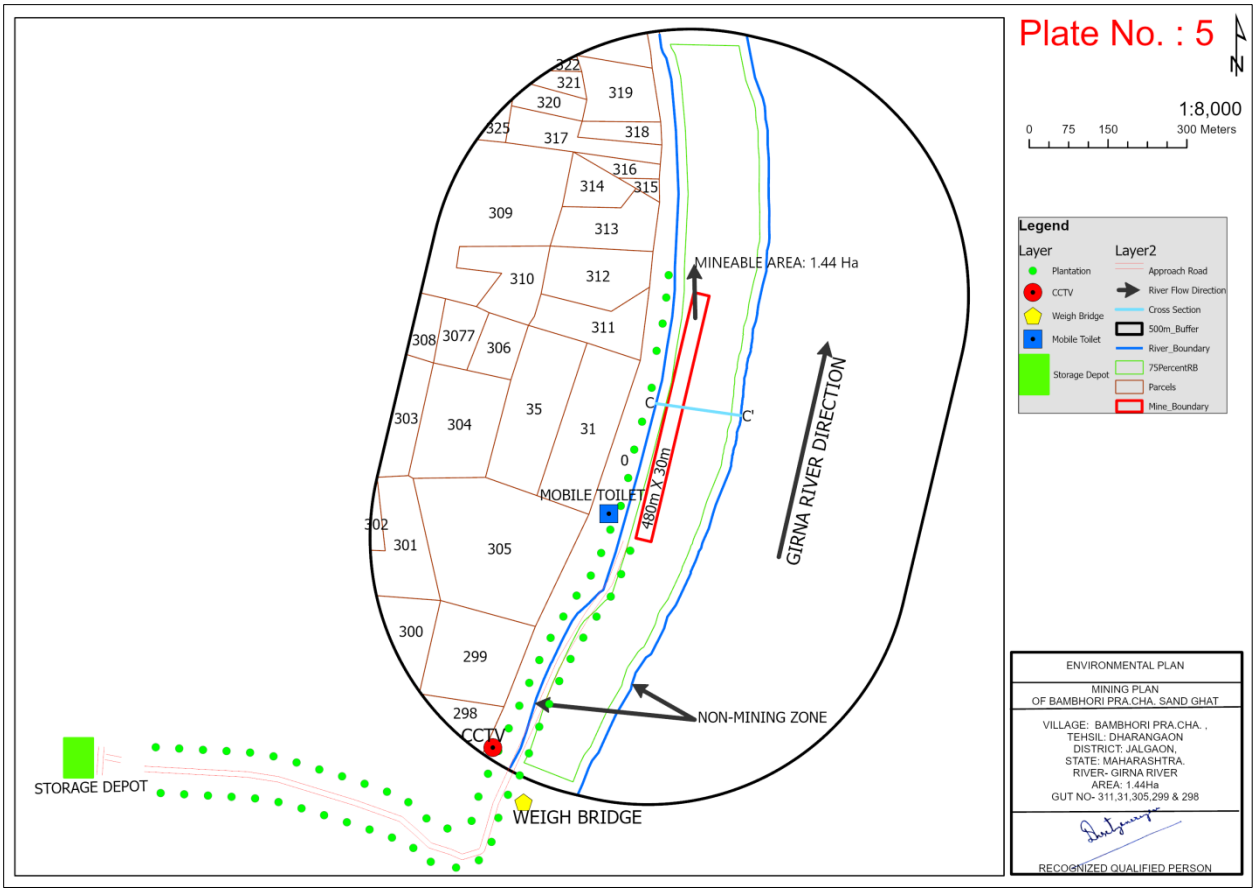
- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- GPS BASED VEHICLE TRACKING SYSTEM
- CCTV Camera

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.

Bambhori Pra. Cha. does not form a 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:

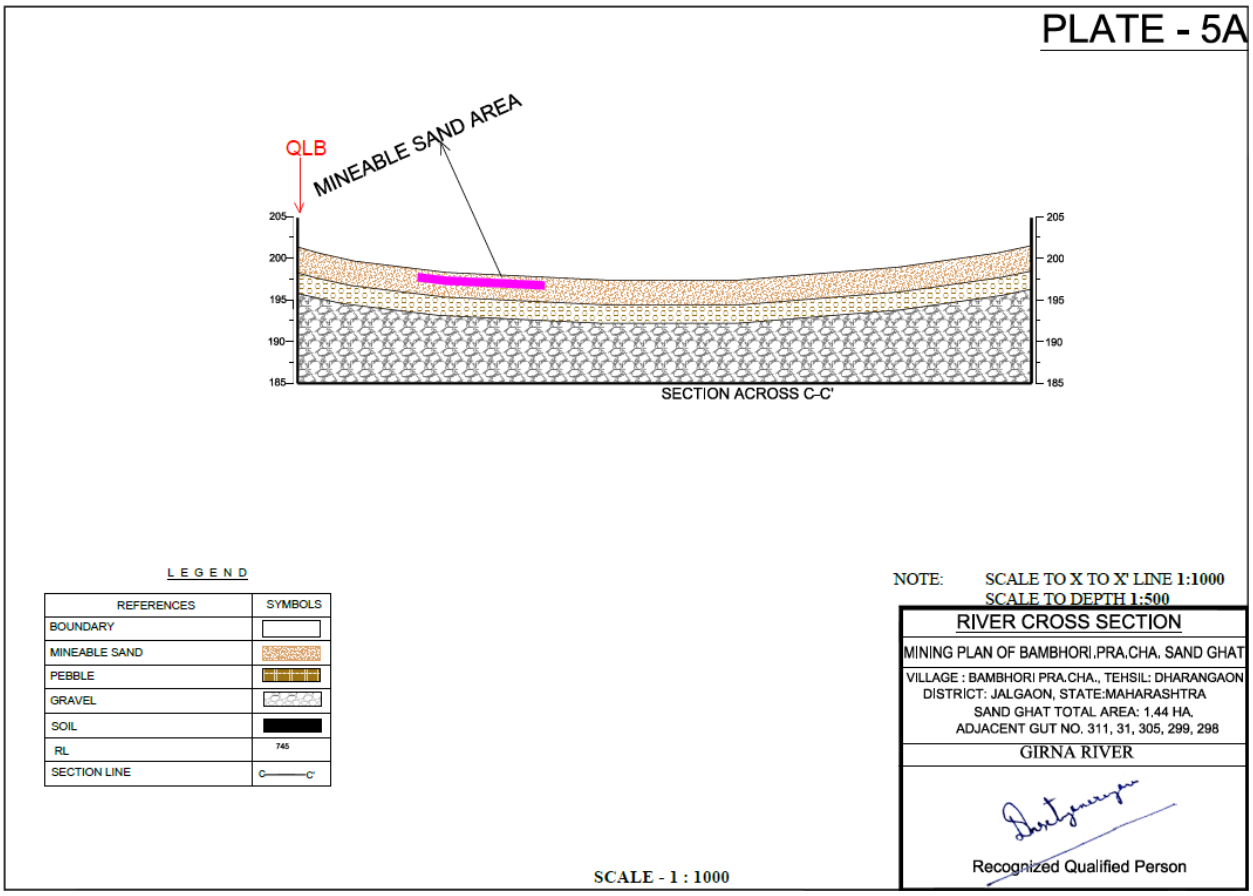


11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.

The proposed approach road length is at 1320m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Dharangaon Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

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.

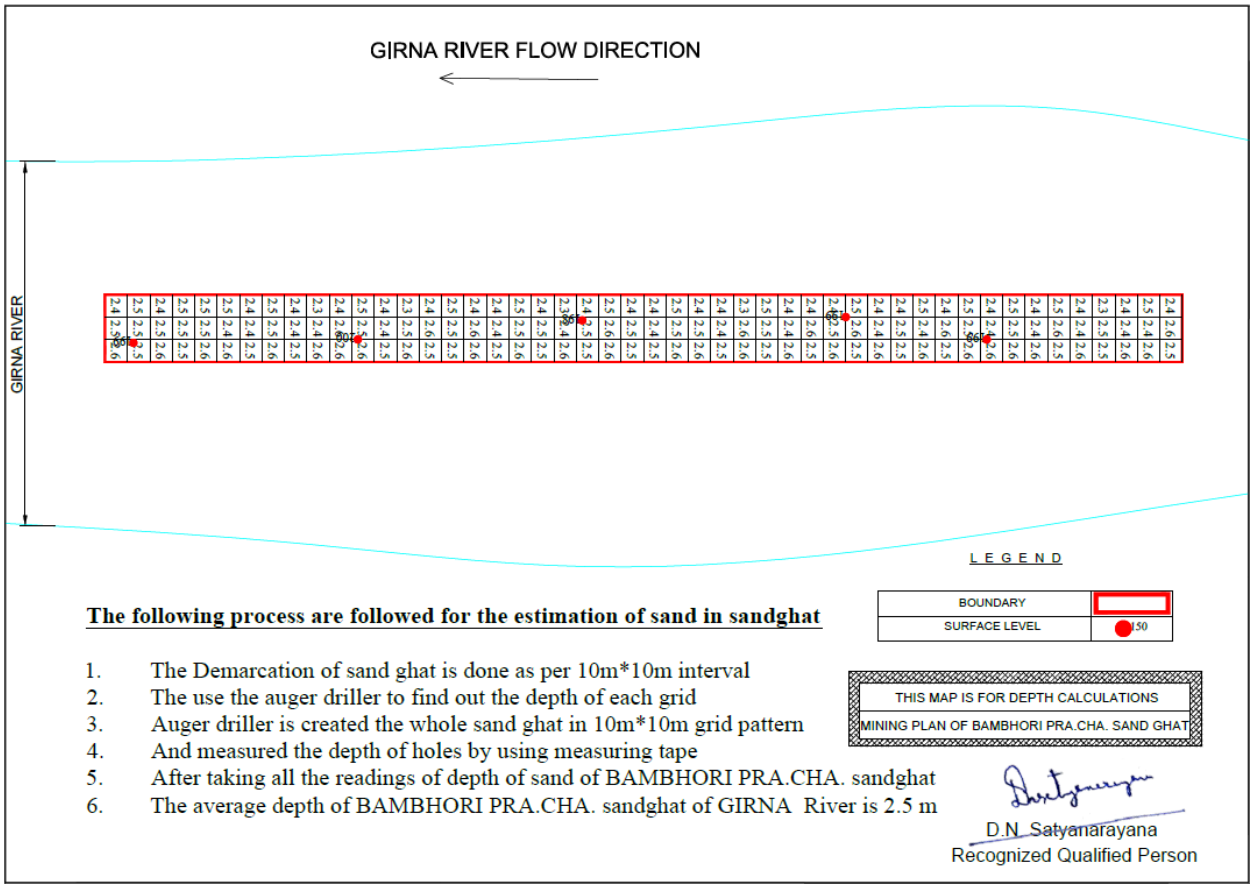
Cross section of riverbed is shown below:



13. 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.

14. 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 BAMBHORI PRA.CHA. sandghat
6. The average depth of BAMBHORI PRA.CHA. sandghat of GIRNA River is 2.5 m

15. 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*(16-0.26log(A)) *F

2. **For Runoff More Than 2 Inches**

   S=*1958*(Q)*(e-0.055*Q) *(13-0.26log (A))

Where

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

Q= average annual runoff (m3),

A= net drainage area in sq. Mile

The sediment yield of Girna river at Girna dam station is 4.612*1020 tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

As per above data sedimentation yield for Girna River. 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	780
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	**Local name**	**Importance**
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

17 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 one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Street light for Village with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Benches for ZP School with consultation with Grampanchayat)	70000
	Total	2,00,000

18 Environmental Management Plan (EMP)

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **4,24,100** and recurring cost provision of about INR **3,42,800** 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

		Bambhori pra.Cha.	EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	66000	66000
3	Approach Road Maintenance		-	52800	52800
4	Green Belt Plantation	Along the River Bank	60000	-	60000
		Along the Approach Road	330000	-	330000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	14100	-	14100
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	60000	60000
7	Security	Display Boards and other security	10000	-	10000

		measures			
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	14000	14000
9	Tarpaulin Cover (5000 INR per one Cover)		10000	-	10000
		Total	**4,24,100**	**3,42,800**	**7,66,900**

19 Public Consultation Report

Dharangaon					
S.No	**Villager Name/Village,Taluka**	**Type of Person (Villager/Government Official)**	**Query raised by the Villager/Official**	**Response from the Proponent**	**Action Plan**

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 on surrounding environment and social life. 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 Bambhori Pra. Cha. Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

PRE-FEASIBILITY REPORT

The Bambhori Pra. Cha. Sand Spot is situated at Village Bambhori Pra. Cha., Taluka Dharangaon, District-Jalgaon. Sand Spot is 1.44 HA of area in Gut No. 311,31,305,299 & 298 of Bambhori Pra. Cha. village of Dharangaon Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon 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 1.44 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 2544 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Girna river bank.

1. Physiography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Girna valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Girna valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Girna River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Girna river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The slope of Sand Spot area is towards North side ranging from Contour 195 to 201 from MSL i.e 6m. The Highest contour value is 201 and lower is 195. The flow direction of Girna river is towards North

2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3meter.

3. Details of Exploration

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from North to South direction as per allotted area by auction. The production can be at the rate of 7200 Cu.m or 2544 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.44HA

Introduction of the project/ background information

The Bambhori Pra. Cha. Sand Spot has been kept for Auction which is situated at Village Bambhori Pra. Cha., Taluka Dharangaon, and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

i) Brief description of project

The Sand Spot has sufficient Reserve of Sand to work at 7200 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

ii) 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.

3. Project Description

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

i) Location

Bambhori Pra. Cha. is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India. It comes under Bambhori Pra. Cha. Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 2.15 KM towards West from District headquarters Jalgaon. The Sand Ghat is 349 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46O/12.

The boundary pillars of Sand Spot area are given below with GPS values.

Boundary points of Bambhori Pra. Cha.	Latitude	Longitude
B.P 1	21° 0'37.67"N	75°30'34.36"E
B.P 2	21° 0'22.49"N	75°30'30.48"E
B.P 3	21° 0'22.72"N	75°30'29.47"E

B.P 4	21° 0'37.90"N	75°30'33.35"E

ii) Alternate Sites

No alternate site is proposed.

iii) Magnitude of Operation

Proposed period for mining of sand will be decided by the office of district collectorate 7200 cu.m. will be excavated during the period.

iv) Project description-mining details

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 480m L X 30m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable.

The Sand Spot has sufficient Reserve of Sand to work at 7200 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

v) Raw material, marketing & transport of ore

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.

vi) Resource optimization, recycle, reuse

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

vii) Water & 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 7.2 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 labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

viii) Quantity of waste & scheme for management

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

ix) Schematic Representations

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

4. Site Analysis

i) Connectivity

Bambhori Pra. Cha. is a small Village in Dharangaon Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 1320 m in West direction. Jalgaon Railway Station is present at a distance of 5.6 km.

ii) Land Use, form & Ownership

The ultimate land use pattern for the lease area of 1.05ha. will be consisting of

1. Mining Area : 1.44ha.
2. Construction of Temporary Roads : 0.00 ha.
3. Total : 1.44ha.

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.

iii) Geology

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

Existing land use pattern

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

Social-Economic Environment

Critically analysing 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:

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

Planning brief:

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

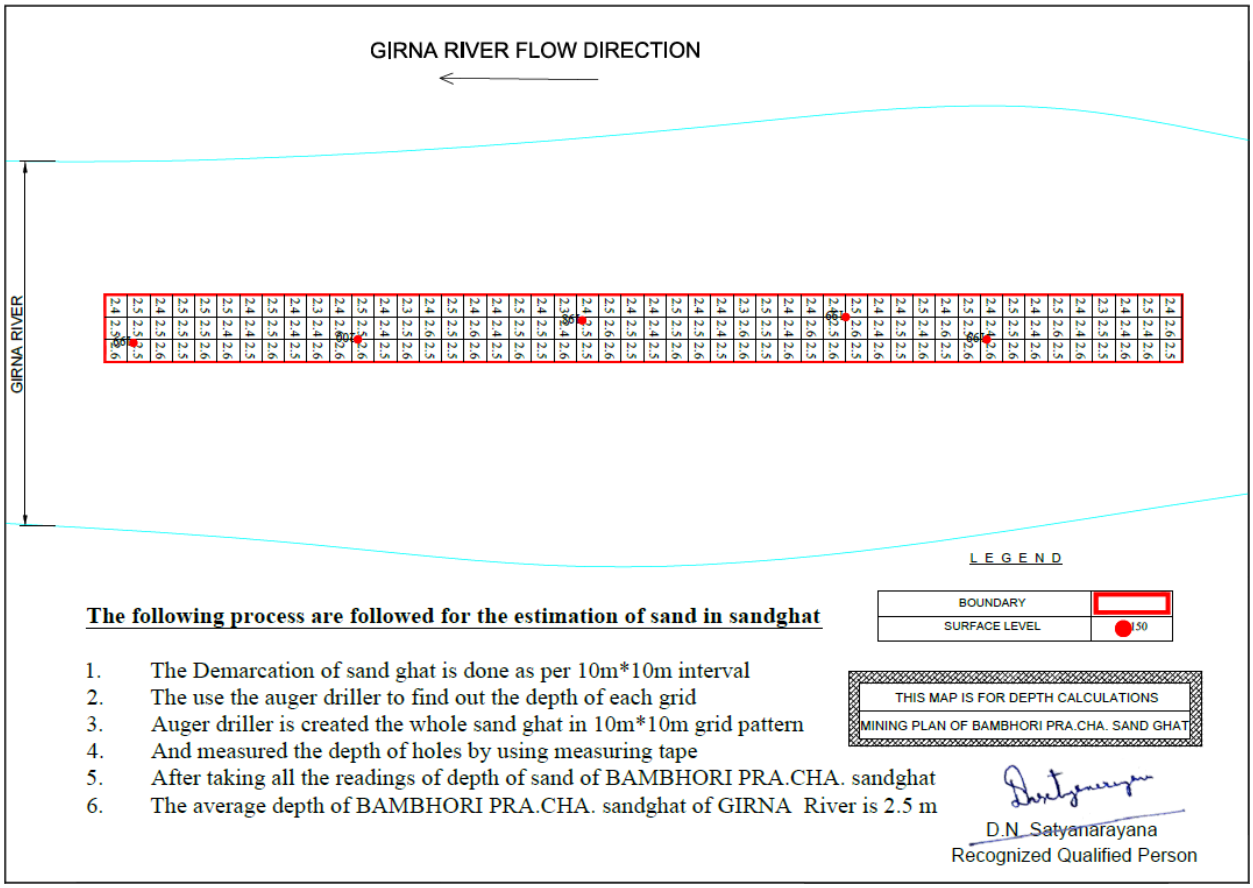
Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available of district in Brass**
1	Jalgaon	191380	104531

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.

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

The sediment yield of Girna river at Girna dam station is 4.612*1020 tonnes/year/km2 by Dandy-Bolton Equation **(Source: State Irrigation Department)**

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

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
- 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.

Compliance of earlier Environmental Clearance

- Bambhori Pra. Cha. Has got earlier Environment clearance in the year 2020-2021. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

7. 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.

8. R&R Plan

R&R is not involved.

9. Project schedule

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

10. Analysis of Proposal

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

1. It is proposed for opencast manual river sand mining.
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.

11. Costing

Costing parameters will be decided by the District Authorities.

12. Compliance to Environment Clearance

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

13. Any Other Information:

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

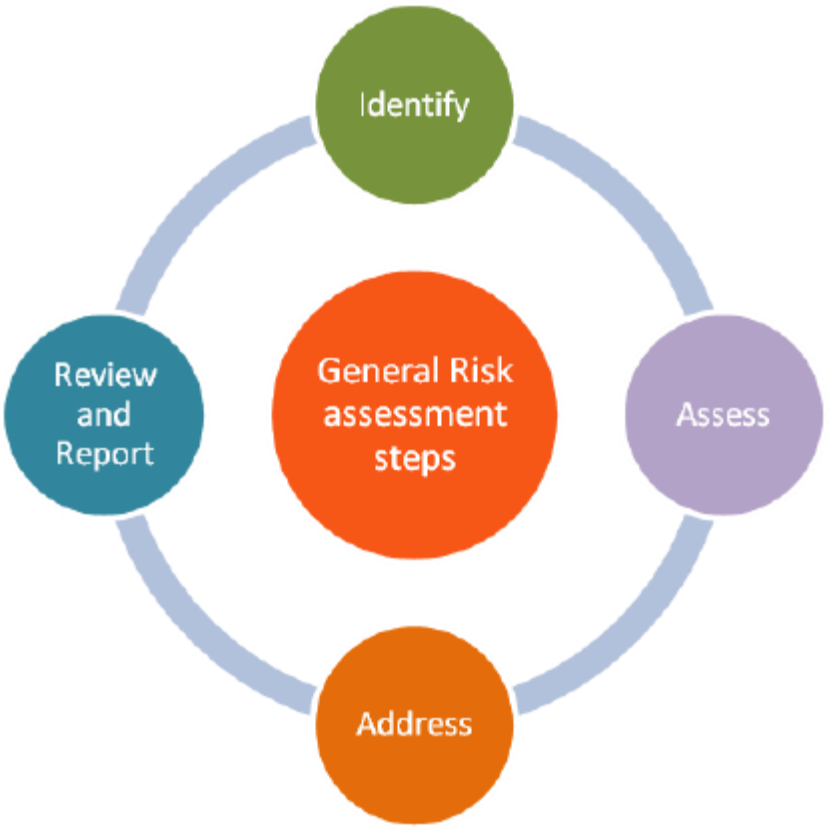
All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of 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, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

Risk Assessment for Bambhori Pra.Cha. 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 BAMBHORI PRA.CHA. 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 BAMBHORI PRA.CHA. 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**
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
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 equipment's. 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.

- No mining activities during rainy days or just after heavy rain.
- 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

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: Budhgaon Sand Spot

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

Boundary points of Budhgaon	Latitude	Longitude
BP1	21° 0'37.67"N	75°30'34.36"E
BP2	21° 0'22.49"N	75°30'30.48"E
BP3	21° 0'22.72"N	75°30'29.47"E
BP4	21° 0'37.90"N	75°30'33.35"E

(iii) Size of the Mining Lease (Hectare): 1.9HA

(vi) Capacity of Mining Lease (TPA): 3357Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 20.142 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, 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 etc.	Bridge on SH-1, 1.52Km, W
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road Electric transmission line pole or tower	 Amalner Railway station, 17.4 Km, SW NH-53, 31.1Km, SE SH-1, 1.52Km, W 6.75Km, N 1.24Km, N ET, 0.86Km, NW

	Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	Padalsare dam, 16Km, W 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 Tapi River bed; RF,16Km, S
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	Tapi River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53, 31.1Km, SE SH-1, 1.52Km, W 6.75Km, N
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Chahardi, 9.21Km, NE
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Shiv Nivas - School, 1.21Km, N Shardha Hospital, 18.2 Km,SW
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed (this is the case of river sand mining) RF,16Km, S
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,	The mine lease area falls in Seismic Zone III (Moderate), according to the Indian Standard Seismic Zoning Map.

	erosion, flooding or extreme or adverse climatic conditions)	
15	Is proposed mining site located over or near fissure / fracture for ground water recharge	No
16	Whether the proposal involves approval or 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.	No
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, Forest & Climate Change (MoEF&CC) 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

Budhgaon is a small Village in Chopda Taluka in Jalgaon District of Maharashtra State, India. It comes under Budhgaon Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 42.8 KM towards NE from District headquarters Jalgaon. The Sand Ghat is 331 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 1436 m in North direction. Jalgaon Railway Station is present at a distance of 42 km.

Area covered in SOI Toposheet No- 46O/4. The GPS reading of boundary point are given below:

Table 1: Salient Features of the Project

<table>
<tr><th>Items</th><th>Details</th></tr>
<tr><td>Location</td><td>Village- Budhgaon, Tehsil- Chopda District-Jalgaon, Maharashtra.</td></tr>
<tr><td>Latitude and Longitude</td><td>
<table>
<tr><th>Boundary points of Budhgaon</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>B.P 1</td><td>21°10'22.18"N</td><td>75° 9'46.20"E</td></tr>
<tr><td>B.P 2</td><td>21°10'14.58"N</td><td>75° 9'35.81"E</td></tr>
<tr><td>B.P 3</td><td>21°10'15.87"N</td><td>75° 9'34.74"E</td></tr>
<tr><td>B.P 4</td><td>21°10'23.46"N</td><td>75° 9'45.13"E</td></tr>
</table>
</td></tr>
<tr><td>Sand spot area (In Ha)</td><td>1.9</td></tr>
<tr><td>Proposed production capacity (In Brass)</td><td>3357</td></tr>
<tr><td>Manpower Requirement (considering 3-month period)</td><td>18 labours + 1 mate + 1 Supervisor=20 manpower</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 24X 7 daily.
3. One Computer / Android base Mobile for the online generation of Invoice number.</td></tr>
<tr><td>Water requirement & source</td><td>7.6 KLD – Tankers from nearby village.</td></tr>
<tr><td>Project cost INR (Lakh)</td><td>20.142Lakhs</td></tr>
</table>

3 Baseline Environmental Status

i. Topography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.

The slope of Sand Spot area is towards SW side ranging from Contour 168 to 164 from MSL i.e 4m. The Highest contour value is 168 and lower is 164. The flow direction of Tapi river is towards SW.

ii. Hydrology

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m 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 no impact on flow of water.

iii. Soil Environment

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area 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 waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m 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 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too 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

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

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 wild life 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 analysing 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:

A. The mining operations will provide direct & indirect employment village people.
B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
C. Local work force will be given first preference for employment.
D. 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.
   - Improper disposal of packing material, carried by the workers like 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 banks 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 project area gives a clear idea about the need for the project.
- A major portion of the houses in the study area are semi- pucca type structures.
- 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, which can be managed by providing face mask.

c. Human Settlement:

There are no houses in and around lease area. 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 consider for calculation
1	Area under mining / pit	-	1.9	1.9	1.9	1.9
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			1.9	1.9	1.9	1.9

- ❖ 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.

Supply demand ratio:

Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available in district in Brass**
1	Jalgaon	191380	104531

8 Compliance of earlier Environmental Clearance

- Budhgaon has got earlier Environment clearance in the year 2016-2017. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

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:

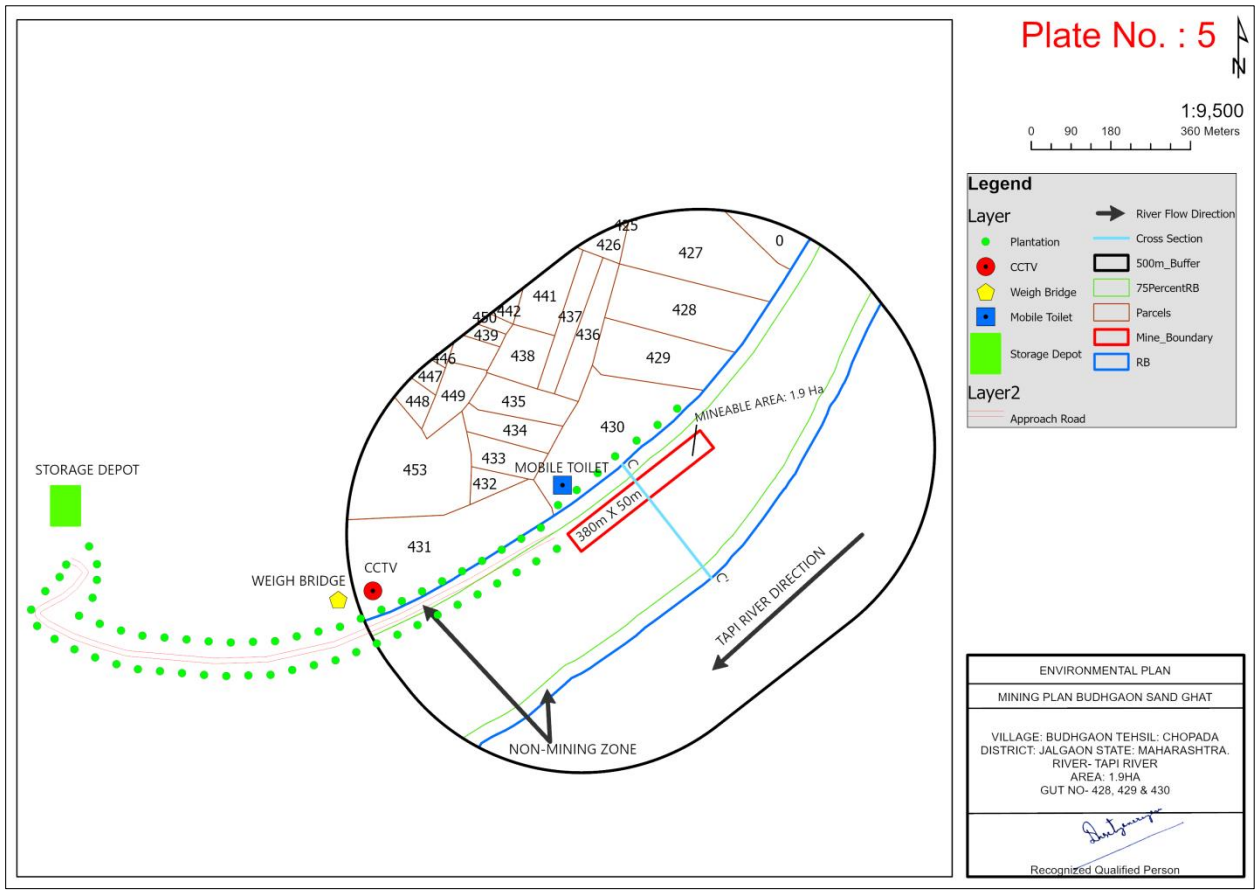
- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- GPS BASED VEHICLE TRACKING SYSTEM
- CCTV Camera

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.

Budhgaon does not form a 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:



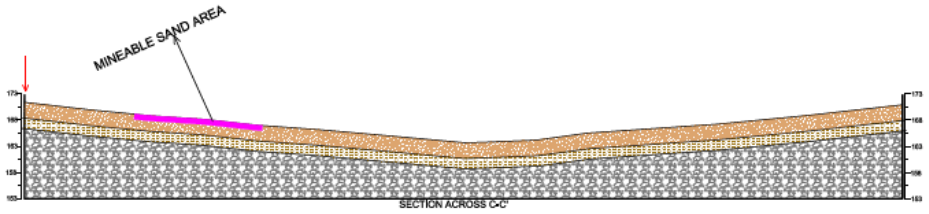
11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.

The proposed approach road length is at 1436 m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Chopda Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

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 BUDHGAON SAND GHAT

VILLAGE : BUDHGAON, TEHSIL: CHOPADA
DISTRICT: JALGAON, STATE:MAHARASHTRA
SAND GHAT TOTAL AREA: 1.90 HA.
ADJACENT GUT NO. 428, 429 & 430

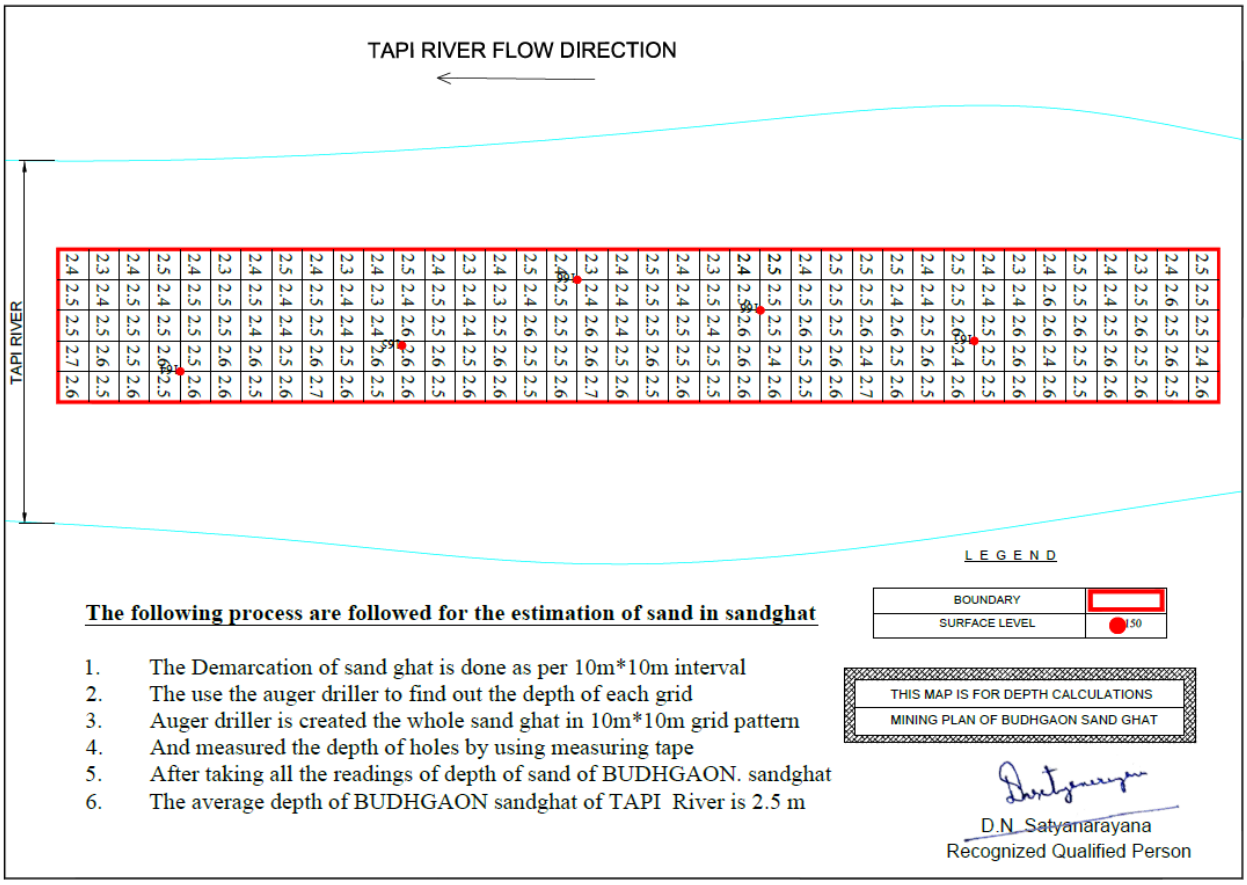
TAPI RIVER

Recognized Qualified Person

13. 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.

14. 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 BUDHGAON. sandghat
6. The average depth of BUDHGAON sandghat of TAPI River is 2.5 m

15. 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*(16-0.26log(A)) *F

2. **For Runoff More Than 2 Inches**

   S=*1958*(Q)*(e-0.055*Q) *(13-0.26log (A))

Where

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

Q= average annual runoff (m3),

A= net drainage area in sq. Mile

- The sediment yield of Tapi river at Hatnur dam station are $1.08*10^{23}$ tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

As per above data sedimentation yield for Tapi River. 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	815
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	Local name	Importance
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

17 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 one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Steel fencing to ZP school with consultation of Grampanchayat)	70000
	Total	2,00,000

18 Environmental Management Plan (EMP)

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **4,55,000** and recurring cost provision of about INR **3,59,240** 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

		Budhgaon	EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	71800	71800
3	Approach Road Maintenance		-	57440	57440
4	Green Belt Plantation	Along the River Bank	47500	-	47500
		Along the Approach Road	359000	-	359000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	23500	-	23500
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	60000	60000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./	-	20000	20000

		Employee)			
9	Tarpaulin Cover (5000 INR per one Cover)		15000	-	15000
		Total	**4,55,000**	**3,59,240**	**8,14,240**

19 Public Consultation Report

Yawal					
S.No	**Villager Name/Village,Taluka**	**Type of Person (Villager/Government Official)**	**Query raised by the Villager/Official**	**Response from the Proponent**	**Action Plan**

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 Budhgaon Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

PRE-FEASIBILITY REPORT

The Budhgaon Sand Spot is situated at Village Budhgaon, Taluka Chopda, District- Jalgaon. Sand Spot is 1.9 HA of area in Gut No. 428, 429 & 43 of Budhgaon village of Chopda Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon 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 1.9Ha 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 3357 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

1. Physiography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The slope of Sand Spot area is towards SW side ranging from Contour 164 to 168 from MSL i.e 4m. The Highest contour value is 168 and lower is 164. The flow direction of TAPI river is towards SW

2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3meter.

3. Details of Exploration

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5m of Sand along topo-relief, by advancing from SW to NE direction as per allotted area by auction. The production can be at the rate of 9500 Cu.m or 3357 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.9HA.

Introduction of the project/ background information

The Budhgaon Sand Spot has been kept for Auction which is situated at Village Budhgaon, Taluka Chopda , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

i) Brief description of project

The Sand Spot has sufficient Reserve of Sand to work at 9500 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m area of Sand by advancing from North to South direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

ii) 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.

3. Project Description

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

i) Location

Budhgaon is a small Village in Chopda Taluka in Jalgaon District of Maharashtra State, India. It comes under Budhgaon Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 42.8 KM towards NE from District headquarters Jalgaon. The Sand Ghat is 331 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46O/4.

The boundary pillars of Sand Spot area are given below with GPS values.

Boundary points of BUDHGAON	Latitude	Longitude
B.P 1	21°10'22.18"N	75° 9'46.20"E
B.P 2	21°10'14.58"N	75° 9'35.81"E
B.P 3	21°10'15.87"N	75° 9'34.74"E

B.P 4	21°10'23.46"N	75° 9'45.13"E

ii) Alternate Sites

No alternate site is proposed.

iii) Magnitude of Operation

Proposed period for mining of sand will be decided by the office of district collectorate 9500 cu.m. will be excavated during the period.

iv) Project description-mining details

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 380m L X 50m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. The Sand Spot has sufficient Reserve of Sand to work at 9500 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from SW to NE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

v) Raw material, marketing & transport of ore

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.

vi) Resource optimization, recycle, reuse

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

vii) Water & 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 7.6 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 labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

viii) Quantity of waste & scheme for management

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

ix) Schematic Representations

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

4. Site Analysis

i) Connectivity

Budhgaon is a small Village in Chopda Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 1436 m in North direction. Jalgaon Railway Station is present at a distance of 42 km.

ii) Land Use, form & Ownership

The ultimate land use pattern for the lease area of 1.9ha. will be consisting of

1. Mining Area : 1.9ha.
2. Construction of Temporary Roads : 0.00 ha.
3. Total : 1.9ha.

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.

iii) Geology

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

Existing land use pattern

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

Social-Economic Environment

Critically analysing 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:

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

Planning brief:

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

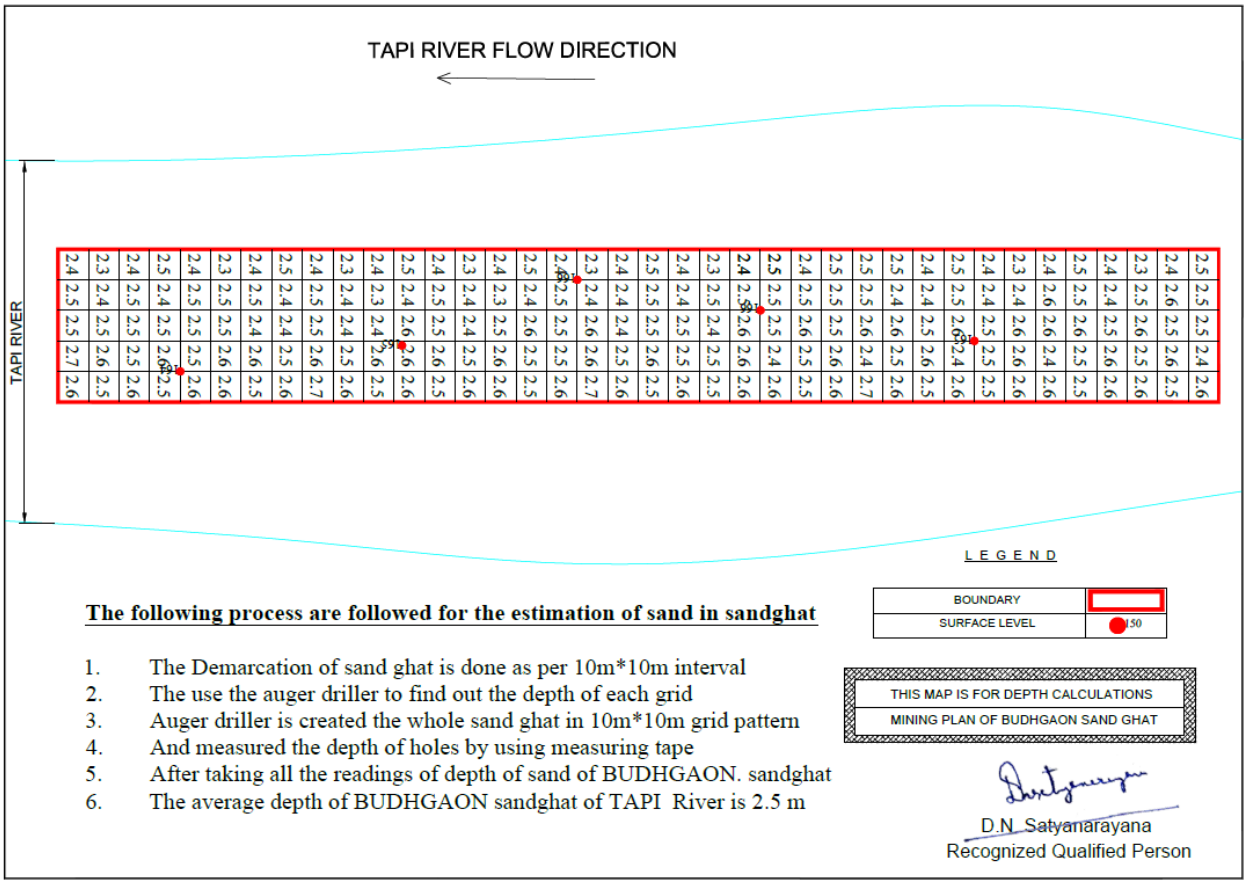
Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available of district in Brass**
1	Jalgaon	191380	104531

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.

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**

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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

- The sediment yield of Tapi river at Hatnur dam station are $1.08*10^{23}$ tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

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

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
- 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.

Compliance of earlier Environmental Clearance

- Budhgaon has got earlier Environment clearance in the year 2016-2017. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

7. 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.

8. R&R Plan

R&R is not involved.

9. Project schedule

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

10. Analysis of Proposal

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

1. It is proposed for opencast manual river sand mining.
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.

11. Costing

Costing parameters will be decided by the District Authorities.

12. Compliance to Environment Clearance

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

13. Any Other Information:

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

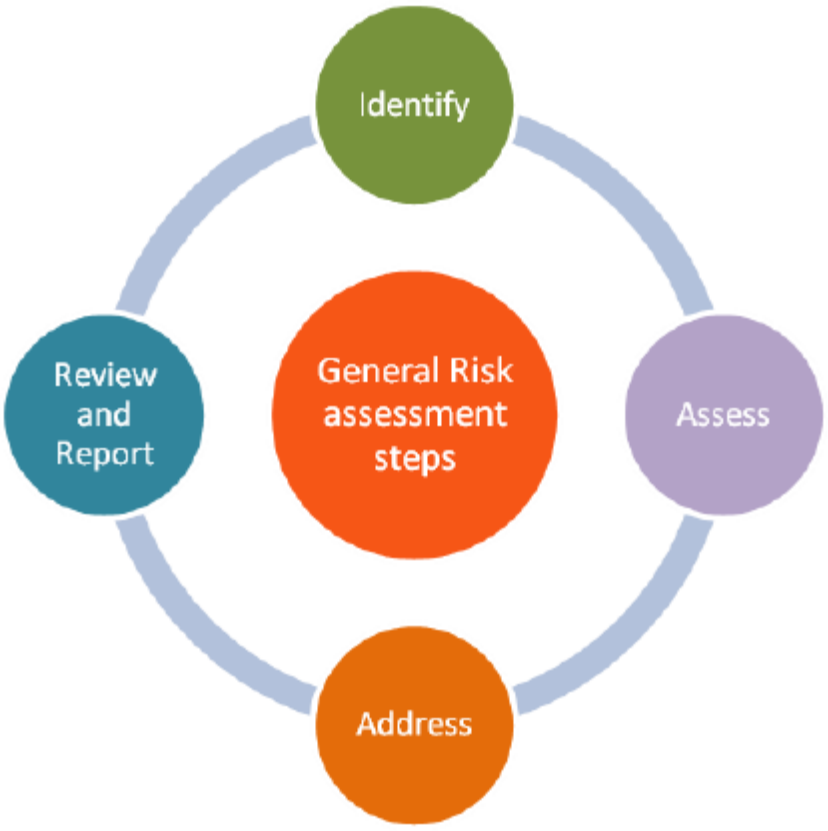
All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of 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, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

Risk Assessment for Budhgaon 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 BUDHGAON 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 BUDHGAON 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**
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
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 equipment's. 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.

- No mining activities during rainy days or just after heavy rain.
- 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

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: Thorgavan Sand Spot

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

Boundary points of Thorgavan	Latitude	Longitude
B.P 1	21° 7'10.99"N	75°35'11.63"E
B.P 2	21° 7'10.41"N	75°35'11.61"E
B.P 3	21° 7'10.65"N	75°35'3.25"E
B.P 4	21° 7'12.99"N	75°34'52.25"E
B.P 5	21° 7'13.56"N	75°34'52.39"E
B.P 6	21° 7'11.23"N	75°35'3.34"E

(iii) Size of the Mining Lease (Hectare): 1.02HA

(vi) Capacity of Mining Lease (TPA): 3594Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 21.564 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, 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 etc.	Bridge on SH-186, 5.2Km, NW
2	Distance from infrastructural facilities Railway line National Highway	 Jalgaon Railway Station, 11.6Km, S NH-53, 12.5Km, SW

	State Highway Major District Road Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	SH-186, 3.71Km, W 1.98Km, NE 1Km, NE ET, 1.18Km, NE Hatnur Right Bank Canal, 5.51Km, N 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 Tapi River bed; Girna River, 9.64Km, SW
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	Tapi River bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53, 12.5Km, SW SH-186, 3.71Km, W 1.98Km, NE
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Jalgaon, 11.6Km, S
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	GAURAV Ananda Patil - Elementary school, 0.93Km, NE Indo-American Hospital - General hospital, 11.6 Km,S
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed (this is the case of river sand mining) Girna River, 9.64Km, SW
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 III (Moderate), 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 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.	No
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, Forest & Climate Change (MoEF&CC) 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

Thorgavan is a small Village in Yaval Taluka in Jalgaon District of Maharashtra State, India. It comes under Thorgavan Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 10.6 KM towards North from District headquarters Jalgaon. The Sand Ghat is 357 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 647 m in North direction. Jalgaon Railway Station is present at a distance of 10 km.

Area covered in SOI Toposheet No- 46O/12. The GPS reading of boundary point are given below:

Table 1: Salient Features of the Project

<table>
<tr><th>Items</th><th>Details</th></tr>
<tr><td>Location</td><td>Village- Thorgavan, Tehsil- Yaval District-Jalgaon, Maharashtra.</td></tr>
<tr><td>Latitude and Longitude</td><td>
<table>
<tr><th>Boundary points of Thorgavan</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>B.P 1</td><td>21° 7'10.99"N</td><td>75°35'11.63"E</td></tr>
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<tr><td>B.P 6</td><td>21° 7'11.23"N</td><td>75°35'3.34"E</td></tr>
</table>
</td></tr>
<tr><td>Sand spot area (In Ha)</td><td>1.02</td></tr>
<tr><td>Proposed production capacity (In Brass)</td><td>3594</td></tr>
<tr><td>Manpower Requirement (considering 3-month period)</td><td>18 labours + 1 mate + 1 Supervisor=20 manpower</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 24X 7 daily.
3. One Computer / Android base Mobile for the online generation of Invoice number.</td></tr>
<tr><td>Water requirement & source</td><td>4.4 KLD – Tankers from nearby village.</td></tr>
<tr><td>Project cost INR (Lakh)</td><td>21.564 Lakhs</td></tr>
</table>

3 Baseline Environmental Status

i. Topography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.

The slope of Sand Spot area is towards West side ranging from Contour 148 to 146 from MSL i.e 2m. The Highest contour value is 148 and lower is 146. The flow direction of Tapi river is towards West.

ii. Hydrology

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 1m 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 no impact on flow of water.

iii. Soil Environment

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 1m. There is no major impact on soil of the study area 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 waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 1m 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 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 1m that too 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

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

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 wild life 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 analysing 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:

A. The mining operations will provide direct & indirect employment village people.
B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
C. Local work force will be given first preference for employment.
D. 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.
   - Improper disposal of packing material, carried by the workers like 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 banks 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 project area gives a clear idea about the need for the project.
- A major portion of the houses in the study area are semi- pucca type structures.
- 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, which can be managed by providing face mask.

c. Human Settlement:

There are no houses in and around lease area. 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 consider for calculation
1	Area under mining / pit	-	1.02	1.02	1.02	1.02
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			1.02	1.02	1.02	1.02

- ❖ 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.

Supply demand ratio:

Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available in district in Brass**
1	Jalgaon	191380	104531

8 Compliance of earlier Environmental Clearance

- Thorgavan has got earlier Environment clearance in the year 2021-2022. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

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.
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- 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:

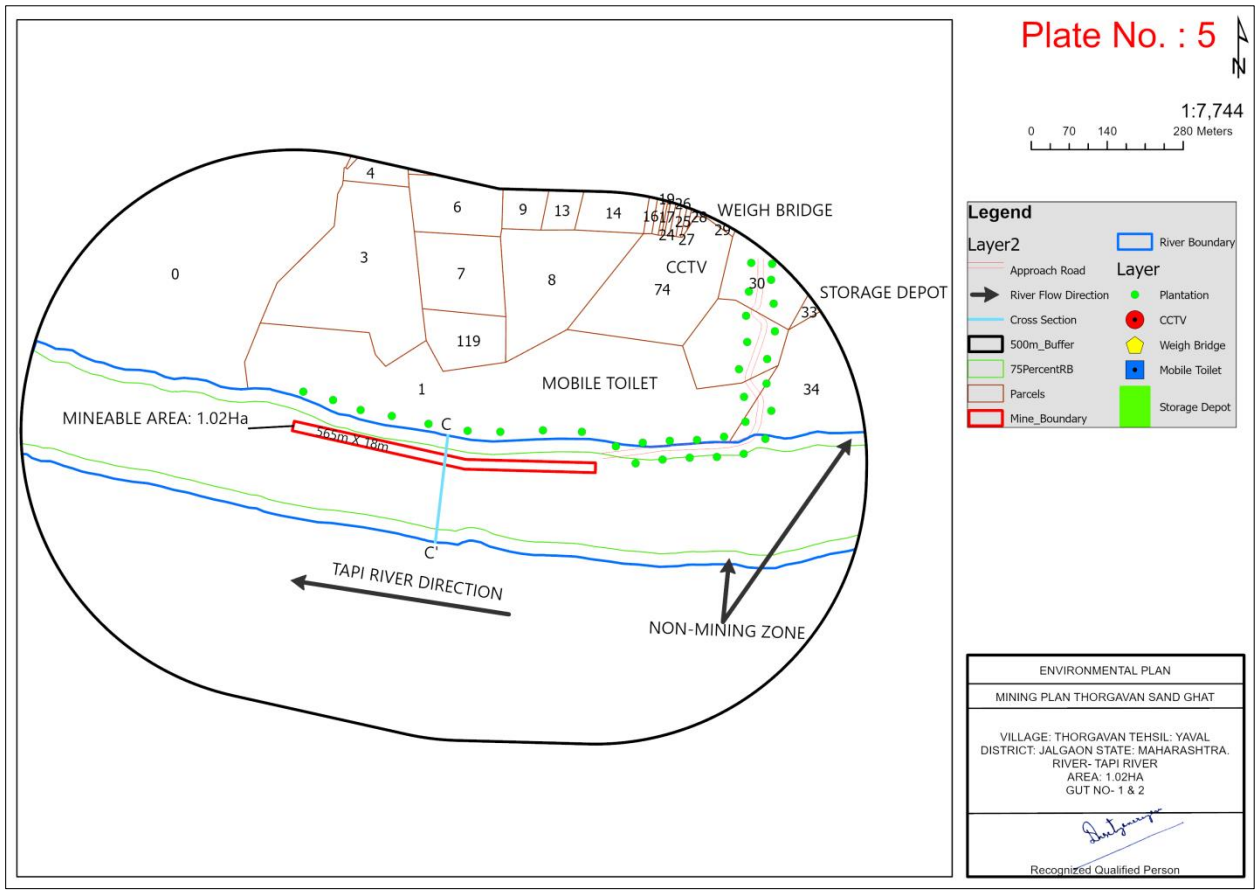
- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- GPS BASED VEHICLE TRACKING SYSTEM
- CCTV Camera

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.

Thorgavan does not form a 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:

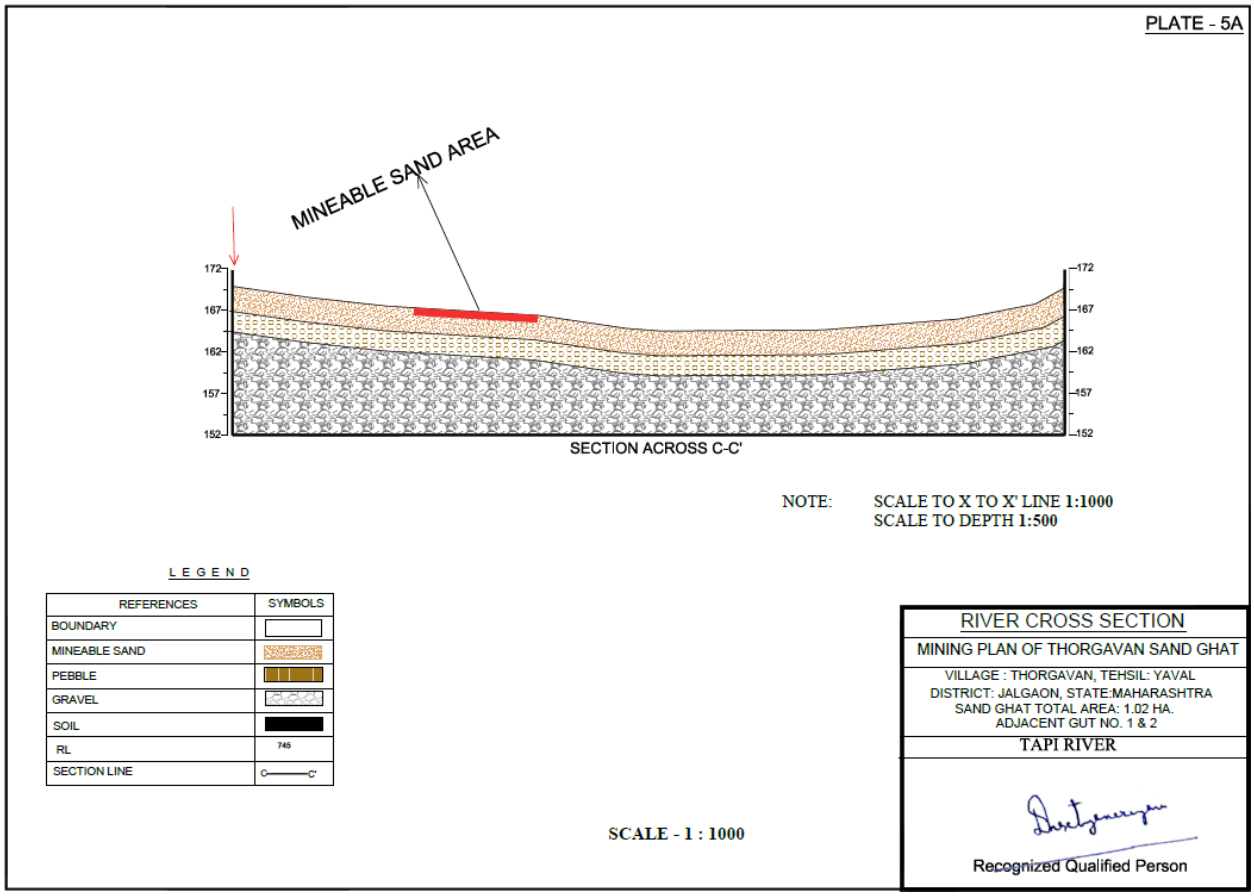


11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.

The proposed approach road length is at 647 m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Yaval Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

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.

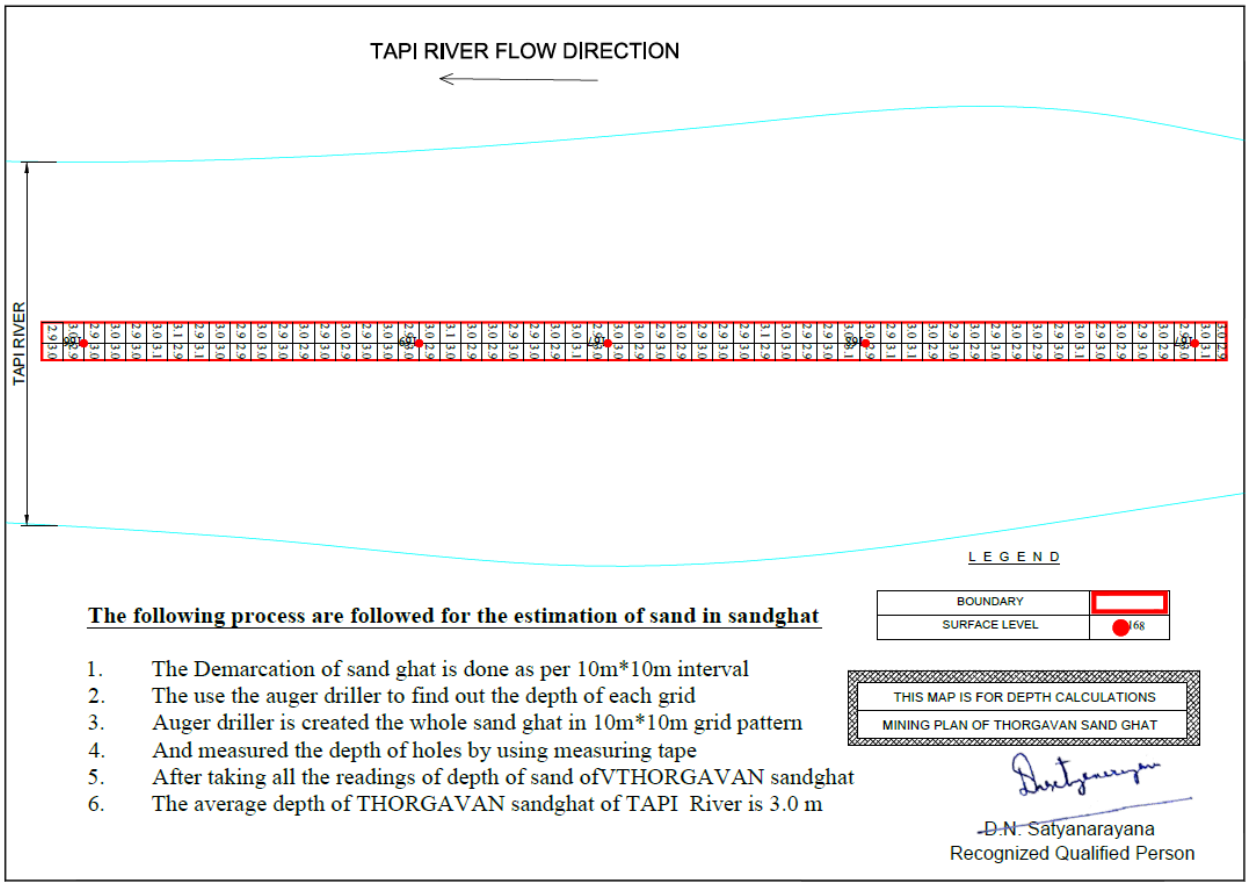
Cross section of riverbed is shown below:



13. 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.

14. 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 ofVTHORGAVAN sandghat
6. The average depth of THORGAVAN sandghat of TAPI River is 3.0 m

15. 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*(16-0.26log(A)) *F

2. **For Runoff More Than 2 Inches**

   S=*1958*(Q)*(e-0.055*Q) *(13-0.26log (A))

Where

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

Q= average annual runoff (m3),

A= net drainage area in sq. Mile

- The sediment yield of Tapi river at Hatnur dam station are $1.08*10^{23}$ tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

As per above data sedimentation yield for Tapi River. 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	465
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	Local name	Importance
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

17 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 one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Computer set with printer to ZP school with consultation of Grampanchayat)	70000
	Total	2,00,000

18 Environmental Management Plan (EMP)

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **2,69,525** and recurring cost provision of about INR **2,88,230** 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

		Thorgavan	EMP Budget		
SNo.	Component	Description	Capital cost Rs.	Recurring Cost Rs.	Total Cost in Rs
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	32350	32350
3	Approach Road Maintenance		-	25880	25880
4	Green Belt Plantation	Along the River Bank	70625	-	70625
		Along the Approach Road	162000	-	162000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	11900	-	11900
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	60000	60000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./	-	20000	20000

		Employee)			
9	Tarpaulin Cover (5000 INR per one Cover)		15000	-	15000
		Total	**2,69,525**	**2,88,230**	**5,57,755**

19 Public Consultation Report

Yawal					
S.No	**Villager Name/Village,Taluka**	**Type of Person (Villager/Government Official)**	**Query raised by the Villager/Official**	**Response from the Proponent**	**Action Plan**

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 Thorgavan Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

PRE-FEASIBILITY REPORT

The Thorgavan Sand Spot is situated at Village Thorgavan, Taluka Yaval, District- Jalgaon. Sand Spot is 1.02 HA of area in Gut No. 1 & 2 of Thorgavan village of Yaval Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon 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 1.02 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 3594 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

1. Physiography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The slope of Sand Spot area is towards West side ranging from Contour 168 to 166 from MSL i.e 2m. The Highest contour value is 168 and lower is 166. The flow direction of Tapi river is towards West.

2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3meter.

3. Details of Exploration

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 1m of Sand along topo-relief, by advancing from West to North direction as per allotted area by auction. The production can be at the rate of 10170 Cu.m or 3594 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.02HA

Introduction of the project/ background information

The Thorgavan Sand Spot has been kept for Auction which is situated at Village Thorgavan, Taluka Yaval, and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

i) Brief description of project

The Sand Spot has sufficient Reserve of Sand to work at 10170 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 1 m area of Sand by advancing from West to East direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

ii) 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.

3. Project Description

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

i) Location

The area under Mining of Sand Spot is 1.02HA, in river bed of Tapi river in Gut No. 1 & 2 of Thorgavan village. The land being Government- non forest land. The mining plan is being prepared as per government of M.S., minor minerals extraction [Development and Regulation] rules 2013, by section 15, of Mines and Minerals act 1957 vide government notification Revenue and forest Department No. Gaukhani10/0812/c.r.613/kh dated 18 July 2013.

The Khasara Plan and Key Plan are enclosed as plates–1 & 2. The boundary pillars of Sand Spot area are given below with GPS values.

Area covered in SOI Toposheet No- 46O/12.

Boundary points of Thorgavan	Latitude	Longitude
B.P 1	21° 7'10.99"N	75°35'11.63"E
B.P 2	21° 7'10.41"N	75°35'11.61"E

B.P 3	21° 7'10.65"N	75°35'3.25"E
B.P 4	21° 7'12.99"N	75°34'52.25"E
B.P 5	21° 7'13.56"N	75°34'52.39"E
B.P 6	21° 7'11.23"N	75°35'3.34"E

ii) Alternate Sites

No alternate site is proposed.

iii) Magnitude of Operation

Proposed period for mining of sand will be decided by the office of district collectorate 10170 Cu.m . will be excavated during the period.

iv) Project description-mining details

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 565m L X 18m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. These Mine features are shown on Surface Plan and are enclosed as Plate No – 3.

The Sand Spot has sufficient Reserve of Sand to work at 10170 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 1 m slice of Sand by advancing from W to E direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

v) Raw material, marketing & transport of ore

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.

vi) Resource optimization, recycle, reuse

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

vii) Water & 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 4.4 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 labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

viii) Quantity of waste & scheme for management

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

ix) Schematic Representations

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

4. Site Analysis

i) Connectivity

Thorgavan is a small Village in Yaval Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 647 m in North direction. Jalgaon Railway Station is present at a distance of 10 km.

ii) Land Use, form & Ownership

The ultimate land use pattern for the lease area of 1.02ha. will be consisting of

1. Mining Area : 1.02ha.
2. Construction of Temporary Roads : 0.00 ha.
3. Total : 1.02ha.

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.

iii) Geology

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

Existing land use pattern

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

Social-Economic Environment

Critically analysing 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:

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

Planning brief:

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

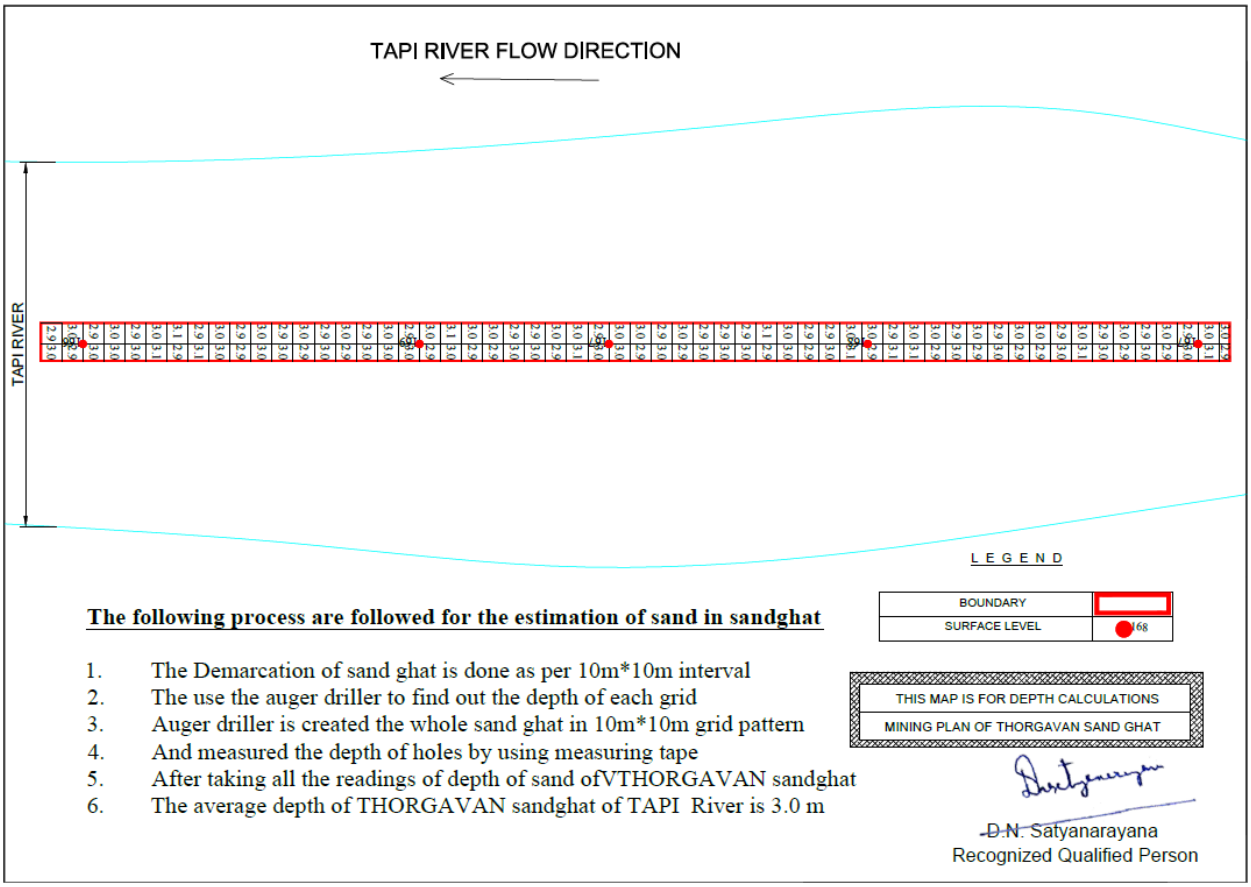
Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available of district in Brass**
1	Jalgaon	191380	104531

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.

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*(16-0.26log(A)) *F

2. **For Runoff More Than 2 Inches**

   S=*1958*(Q)*(e-0.055*Q) *(13-0.26log (A))

Where

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

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A= net drainage area in sq. mile

The sediment yield of Tapi river at Hatnur dam station are 1.08*1023 tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

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

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.
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- 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.

Compliance of earlier Environmental Clearance

- Thorgavan has got earlier Environment clearance in the year 2021-2022. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

7. 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.

8. R&R Plan

R&R is not involved.

9. Project schedule

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

10. Analysis of Proposal

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

1. It is proposed for opencast manual river sand mining.
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.

11. Costing

Costing parameters will be decided by the District Authorities.

12. Compliance to Environment Clearance

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

13. Any Other Information:

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

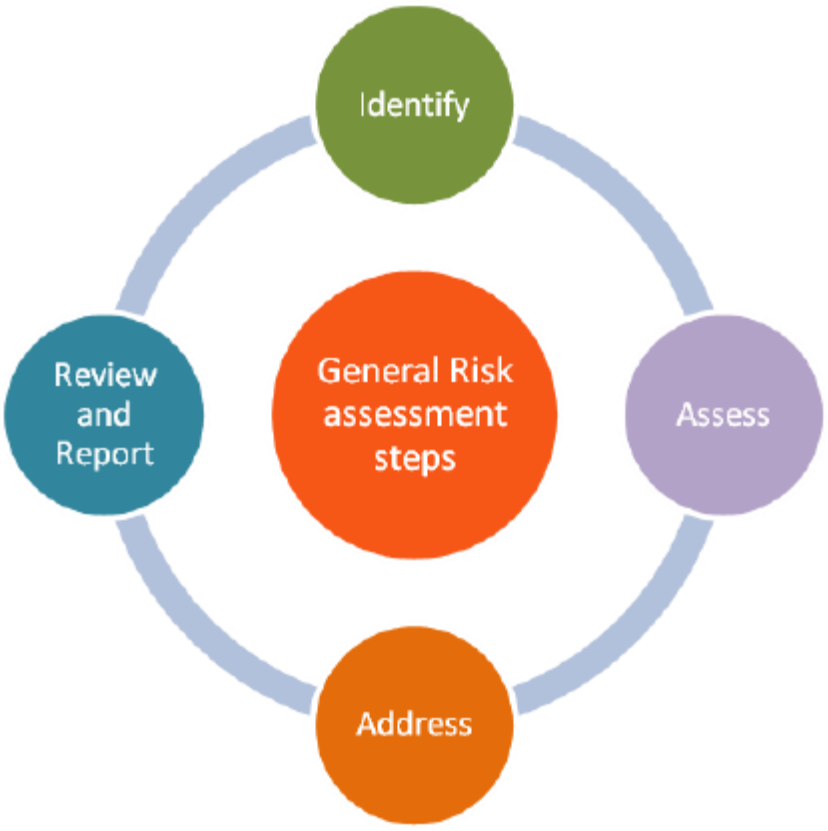
All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of 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, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.1994 and 04.09.2006.

Risk Assessment for Thorgavan 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 THORGAVAN 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 THORGAVAN 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**
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
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 equipment's. 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.

- No mining activities during rainy days or just after heavy rain.
- 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

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: Pimpri Sand Spot

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

Boundary points of Pimpri	Latitude	Longitude
BP1	21°06' 31.85" N	75°39' 01.48" E
BP2	21°06' 31.20" N	75°39' 01.47" E
BP3	21°06' 31.29" N	75°38' 52.43" E
BP4	21°06' 32.41" N	75°38' 43.07" E
BP5	21°06' 33.05" N	75°38' 43.16" E
BP6	21°06' 31.94" N	75°38' 52.46" E

(iii) Size of the Mining Lease (Hectare): 1.06 HA

(vi) Capacity of Mining Lease (TPA): 1880 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 11.28 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, 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 etc.	Bridge, 12Km, NW
2	Distance from infrastructural facilities Railway line	Jalgaon Junction Railway Station, 13.38Km, SW

	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 In-take for drinking water pump house Intake for Irrigation canal pumps	NH-53,12.34Km, SW SH-4, 7.2Km, N 1.09Km, NE 1.1Km, NE ET, 0.81Km, N Hatnur Dam Right Canal, 5.032Km, N Nil Nil
3	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	None within 15 Km radius
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 Tapi River bed; Vaghur River, 5.14Km, SE
5	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, overwintering, migration	None within 15 Km radius
6	Inland, coastal, marine or underground waters	Tapi River Bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53,12.34Km, SW SH-4, 7.2Km, N 1.09Km, NE
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Jalgaon , 13.38Km, SW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Madyamik Vidyalaya Bholane - School, 1.3Km, SW Indo-American Hospital - General hospital, 13.9Km, SW
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed (this is the case of river sand mining); Vaghur River, 5.14Km, SE
13	Areas already subjected to pollution or	Nil

	environmental damage. (those where existing legal environmental standards are exceeded)	
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 III (Moderate), 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 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.	No
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, Forest & Climate Change (MoEF&CC) 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

Pimpri is a small Village in Yawal Taluka in Jalgaon District of Maharashtra State, India. It comes under Pimpri Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 13.68 KM towards SW from District headquarters Jalgaon. The Sand Ghat is 13.68 KM from Jalgaon and 367 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 284 m in North direction. Jalgaon Railway Station is present at a distance of 13.38km.

Area covered in SOI Toposheet No- 46O/12.

The GPS reading of boundary point are given below:

Table 1: Salient Features of the Project

<table>
<tr><th>Items</th><th>Details</th></tr>
<tr><td>Location</td><td>Village- Pimpri, Tehsil-Yawal District-Jalgaon, Maharashtra.</td></tr>
<tr><td>Latitude and Longitude</td><td>
<table>
<tr><th>Boundary points of PIMPRI</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>BP 1</td><td>21°06' 31.85" N</td><td>75°39' 01.48" E</td></tr>
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</table>
</td></tr>
<tr><td>Sand spot area (In Ha)</td><td>1.06</td></tr>
<tr><td>Proposed production capacity (In Brass)</td><td>1880</td></tr>
<tr><td>Manpower Requirement (considering 3-month period)</td><td>12 labours + 1 mate + 1 Supervisor=14 manpower</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 24X 7 daily.
3. One Computer / Android base Mobile for the online generation of Invoice number.</td></tr>
<tr><td>Water requirement & source</td><td>3 KLD – Tankers from nearby village.</td></tr>
<tr><td>Project cost INR (Lakh)</td><td>11.28 Lakhs</td></tr>
</table>

3 Baseline Environmental Status

i. Topography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley

contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Yawal, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Yawal, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.

The slope of Sand Spot area is towards W side ranging from Contour 159 to 156 from MSL i.e 3m. The Highest contour value is 156 and lower is 159. The flow direction of Tapi river is towards W.

ii. Hydrology

There will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5 m 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 no any impact on flow of water.

iii. Soil Environment

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area 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 waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m 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 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too 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

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

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 wild life 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 analysing 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:

A. The mining operations will provide direct & indirect employment village people.

B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

C. Local work force will be given first preference for employment.

D. 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.
   - Improper disposal of packing material, carried by the workers like 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 banks 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 project area gives a clear idea about the need for the project.
- A major portion of the houses in the study area are semi- pucca type structures.
- 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, which can be managed by providing face mask.

c. Human Settlement:

There are no houses in and around lease area. 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	Additional Requirement during Plan period [in Ha]	Total [in Ha]	Area considered as	Net consider for calculation

		[in Ha]				
1	Area under mining / pit	-	1.06	1.06	1.06	1.06
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			1.06	1.06	1.06	1.06

- ❖ 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.

Supply demand ratio:

Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available in district in Brass**
1	Jalgaon	191380	104531

8 Compliance of earlier Environmental Clearance

- ❖ Pimpri has got earlier Environment clearance in the year 2018-2019. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

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:

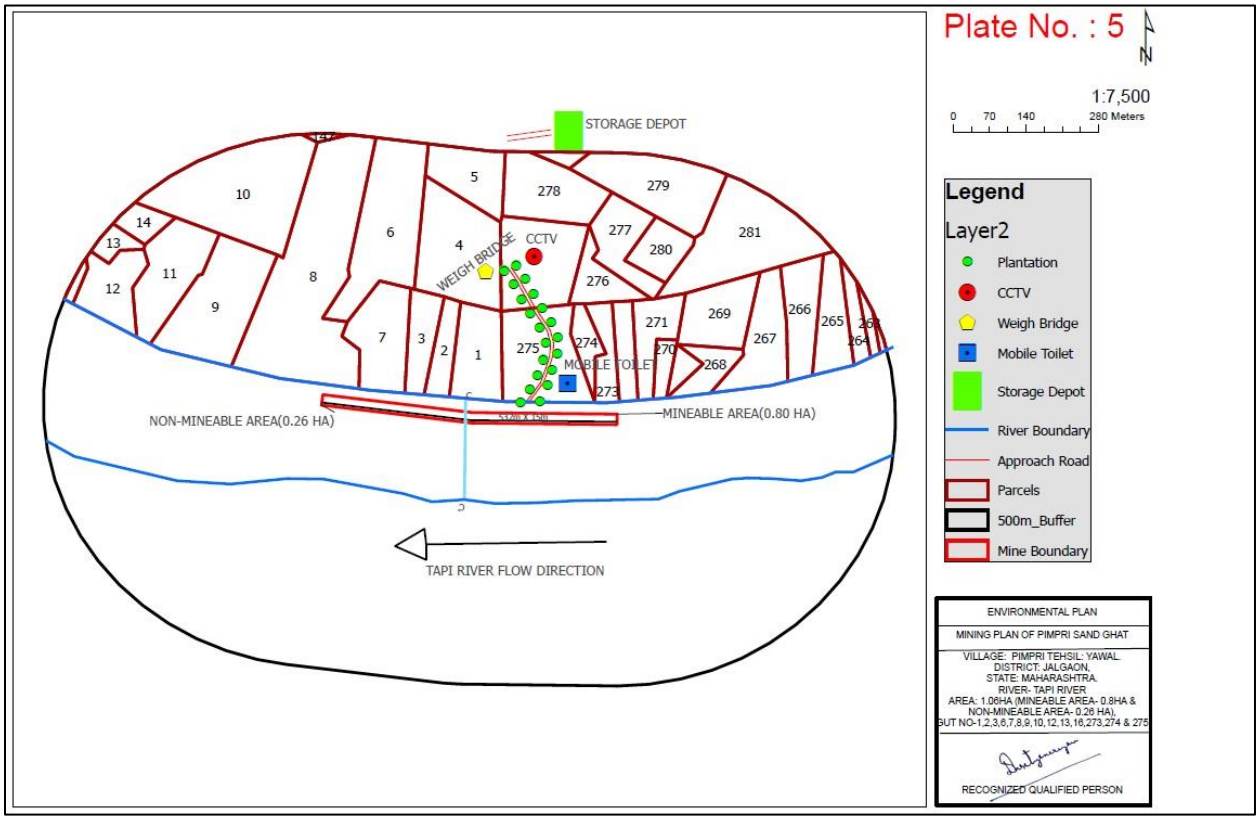
- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- GPS BASED VEHICLE TRACKING SYSTEM
- CCTV Camera

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.

Pimpri does not form a 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.

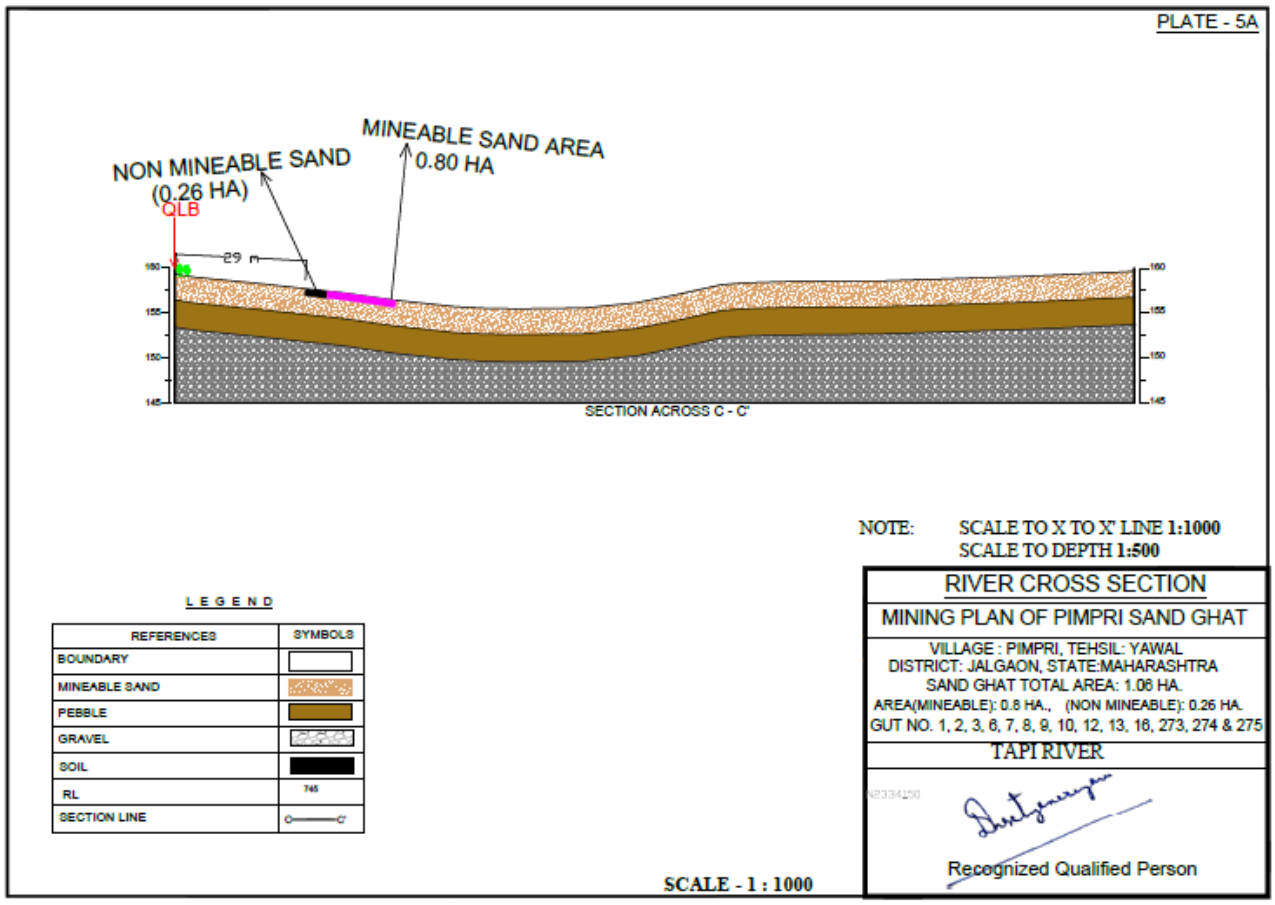
Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



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 284m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Yawal Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

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.

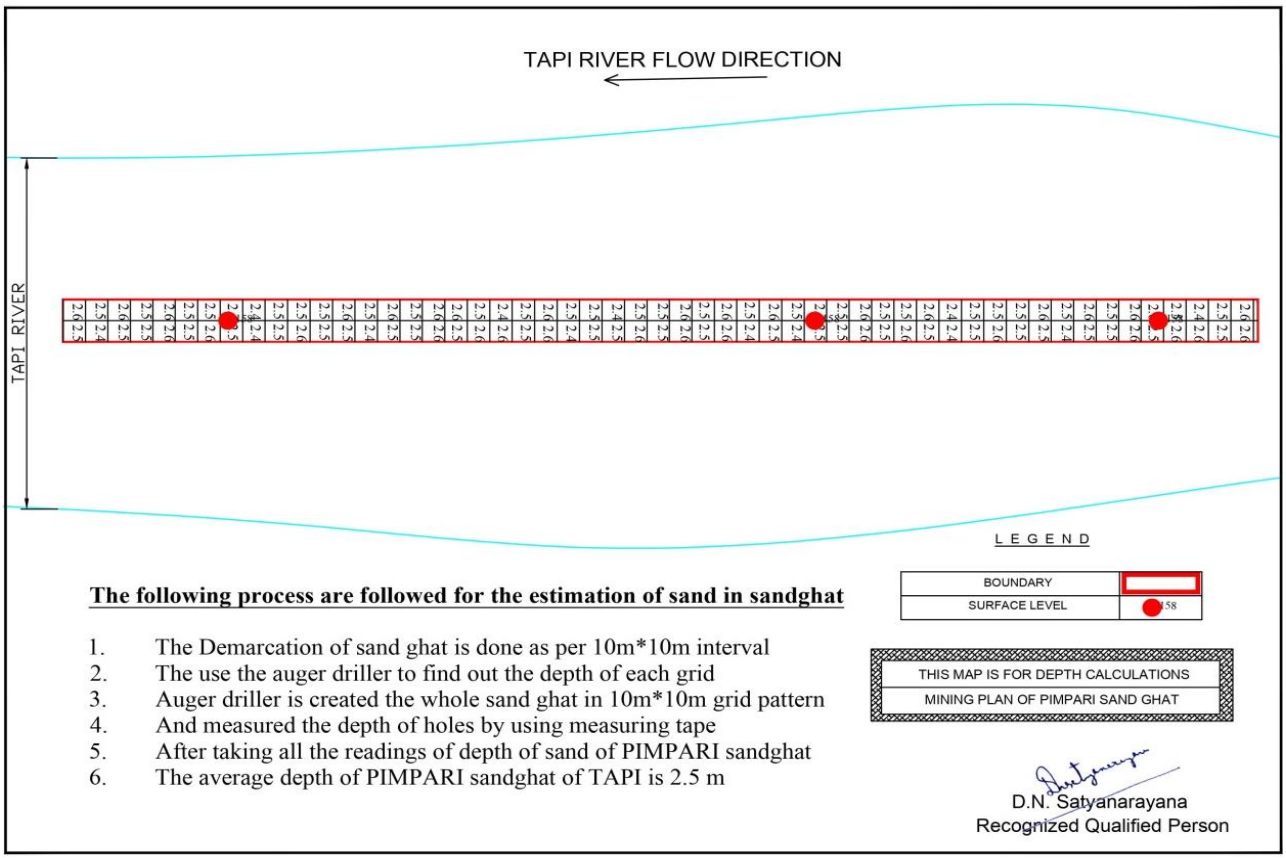


Cross section of riverbed is shown below:

13. 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.

14. 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 PIMPARI sandghat
6. The average depth of PIMPARI sandghat of TAPI is 2.5 m

15. 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

The sediment yield of Tapi river at Hatnur dam station are 1.08*1023 tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

As per above data sedimentation yield for Tapi River. 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	275
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	**Local name**	**Importance**
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

17 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:

S.No.	**Budget Allocated**	**Budget (In INR)**
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000

4	Community Infrastructure Development(Benches for ZP School with consultation with Grampanchayat)	70000
	Total	2,00,000

18 Environmental Management Plan (EMP)

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **1,67,000** Lakh and recurring cost provision of about INR **2,49,560** 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

		Pimpri	**EMP Budget**		
SNo.	**Component**	**Description**	**Capital cost Rs.**	**Recurring Cost Rs.**	**Total Cost in Rs**
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	14200	14200
3	Approach Road Maintenance		-	11360	11360
4	Green Belt Plantation	Along the River Bank	66500	-	66500
		Along the Approach Road	71000	-	71000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	9500	-	9500
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	60000	60000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	14000	14000
9	Tarpaulin Cover (5000 INR per one Cover)		10000	-	10000
		Total	**1,67,000**	**2,49,560**	**4,16,560**

19 Public Consultation Report

Yawal					
S.No	**Villager Name/Village,Taluka**	**Type of Person (Villager/Government Official)**	**Query raised by the Villager/Official**	**Response from the Proponent**	**Action Plan**

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 Pimpri Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

PRE-FEASIBILITY REPORT

The Pimpri Sand Spot is situated at Village Pimpri, Taluka Yaval, District- Jalgaon. Sand Spot is 1.49 HA of area in Gut No. 1,2,3,6,7,8,9,10,12,13,16,273,274 & 275 of Nanded village of Yaval Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon 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 1.06 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 1880 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

1. Physiography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The slope of Sand Spot area is towards W side ranging from Contour 159 to 156 from MSL i.e 3m. The Highest contour value is 156 and lower is 159. The flow direction of Tapi river is towards W.

2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3meter.

3. Details of Exploration

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5 m of Sand along topo-relief, by advancing from W to E direction as per allotted area by auction. The production can be at the rate of 5320 Cu.m or 1880 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.06 HA.

Introduction of the project/ background information

The Pimpri Sand Spot has been kept for Auction which is situated at Village Pimpri. , Taluka Yawal , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

i) Brief description of project

The Sand Spot has sufficient Reserve of Sand to work 5320 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval. The mining will continue with opencast method of Mining by cutting 0.5 m area of Sand by advancing from South to North direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

ii) 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.

3. Project Description

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

i) Location

The area under Mining of Sand Spot is 1.06HA at river bed of Tapi adjacent to gut No. 1,2,3,6,7,8,9,10,12,13,16,273,274 & 275 of Pimpri village. The land being Government-non forest land. The mining plan is being prepared as per government of M.S. Minor minerals extraction [Development and Regulation] rules 2013, by section 15, of Mines and Minerals act 1957 vide government notification Revenue and forest Department No. Gaukhani10/0812/c.r.613/kh dated 18 July 2013.The Khasara Plan and Key Plan are enclosed as plates–1 & 2. The boundary pillars of Sand Spot area are given below with GPS values.

Boundary points of PIMPRI	Latitude	Longitude
BP 1	21°06' 31.85" N	75°39' 01.48" E
BP 2	21°06' 31.20" N	75°39' 01.47" E
BP 3	21°06' 31.29" N	75°38' 52.43" E
BP 4	21°06' 32.41" N	75°38' 43.07" E

BP 5	21°06' 33.05" N	75°38' 43.16" E
BP 6	21°06' 31.94" N	75°38' 52.46" E

ii) Alternate Sites

No alternate site is proposed.

iii) Magnitude of Operation

Proposed period for mining of sand will be decided by the office of district collectorate 5320 cu.m. will be excavated during the period.

iv) Project description-mining details

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 532m L X 20m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable.

The Sand Spot has sufficient Reserve of Sand to work at 5320 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5 m area of Sand by advancing from W to E direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

v) Raw material, marketing & transport of ore

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.

vi) Resource optimization, recycle, reuse

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

vii) Water & 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 3 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 labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

viii) Quantity of waste & scheme for management

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

ix) Schematic Representations

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

4. Site Analysis

i) Connectivity

Pimpri is a small Village in Yawal Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 284 m in North direction. Jalgaon Railway Station is present at a distance of 13.38km.

Area covered in SOI Toposheet No- 46O/12.

ii) Land Use, form & Ownership

The ultimate land use pattern for the lease area of 1.06ha. will be consisting of

1. Mining Area : 1.06ha.
2. Construction of Temporary Roads : 0.00 ha.
3. Total : 1.06ha.

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.

iii) Geology

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

Existing land use pattern

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

Social-Economic Environment

Critically analysing 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:

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

Planning brief:

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

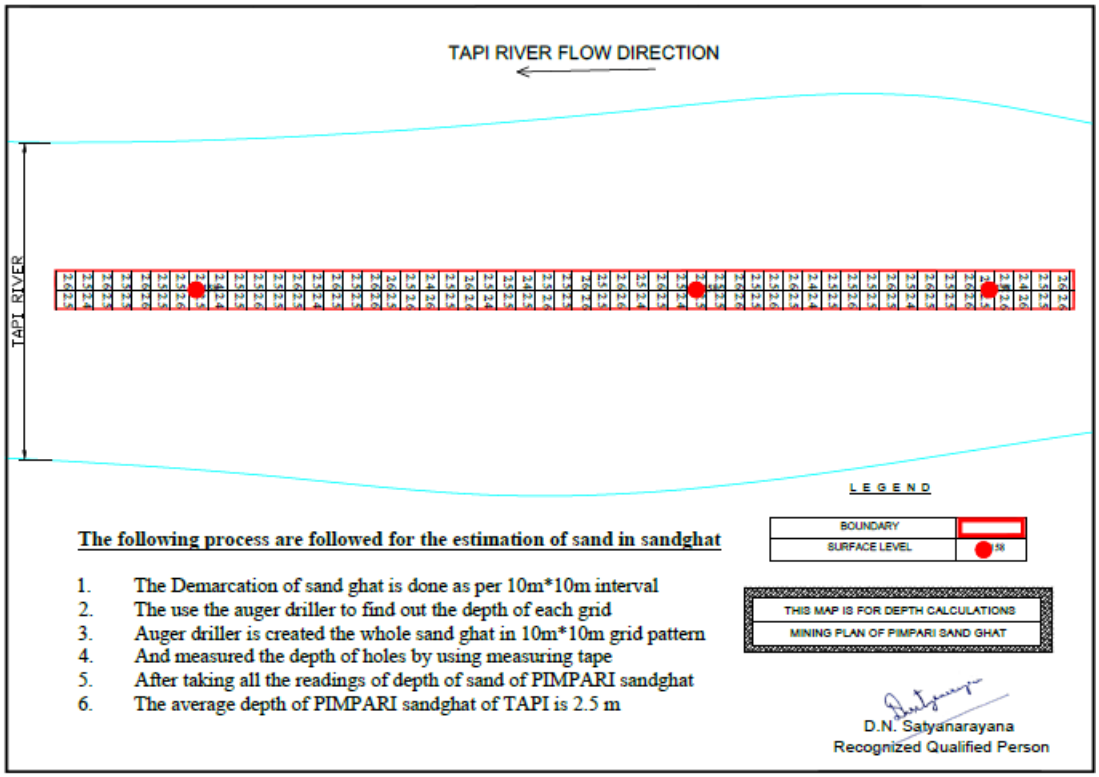
Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available of district in Brass**
1	Jalgaon	191380	104531

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.

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

The sediment yield of Tapi river at Hatnur dam station are 1.08*1023 tonnes/year/km2 by Dandy-Bolton Equation. (Source: State Irrigation Department)

Conclusion:

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

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
- 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.

Compliance of earlier Environmental Clearance

Pimpri has got earlier Environment clearance in the year 2018-2019. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

7. 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.

8. R&R Plan

R&R is not involved.

9. Project schedule

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

10. Analysis of Proposal

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

1. It is proposed for opencast manual river sand mining.
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.

11. Costing

Costing parameters will be decided by the District Authorities.

12. Compliance to Environment Clearance

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

13. Any Other Information:

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

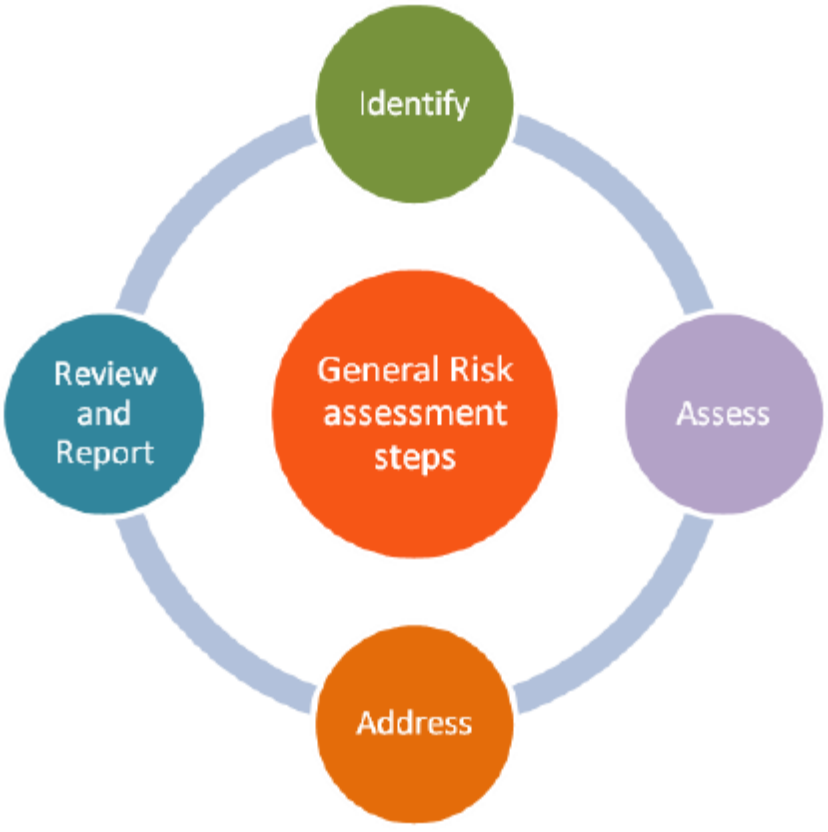
All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of 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, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.06.1994 and 04.09.2006.

Risk Assessment for Pimpri 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 PIMPRI 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 PIMPRI 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**
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
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 equipment's. 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.

- No mining activities during rainy days or just after heavy rain.
- 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

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: Shiragadh Sand Spot

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

Boundary points of Shiragadh	Latitude	Longitude
BP1	21°07' 48.67" N	75°33' 36.28" E
BP2	21°07' 48.37" N	75°33' 35.82" E
BP3	21°08' 05.57" N	75°33' 22.86" E
BP4	21°08' 05.87" N	75°33' 23.32" E

(iii) Size of the Mining Lease (Hectare): 1.04 HA

(vi) Capacity of Mining Lease (TPA): 3664 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 21.984 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, 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 etc.	Bridge, 2.2Km, NW
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road	 Jalgaon Junction Railway Station, 12.7Km, S NH-53, 13.01Km, SW SH-186, 1.4Km, SW Bhokar Rd, 2.2Km, W

	Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	751m, NE ET, 701m, NE Hatnur Dam Right Canal, 5.19Km, NE 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 Tapi River bed; Girna River, 8.69Km, SW
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	Tapi River Bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53, 13.01Km, SW SH-186, 1.4Km, SW Bhokar Rd, 2.2Km, W
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Jalgaon , 12.7Km, S
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Z.P. Shool Turkheda, 952m, SW Indo-American Hospital - General hospital, 13.14Km, S
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed (this is the case of river sand mining); Girna River, 8.69Km, SW
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 III (Moderate), 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 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.	No
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, Forest & Climate Change (MoEF&CC) 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

Shiragadh is a small Village in Yawal Taluka in Jalgaon District of Maharashtra State, India. It comes under Shiragadh Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 13.30 KM towards S from District headquarters Jalgaon. The Sand Ghat is 13.30 KM from Jalgaon and 367 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 334 m in NE direction. Jalgaon Railway Station is present at a distance of 12.65 km.

Area covered in SOI Toposheet No- 46O/12.The GPS reading of boundary point are given below:

Table 1: Salient Features of the Project

<table>
<tr><th>Items</th><th>Details</th></tr>
<tr><td>Location</td><td>Village- Shiragadh, Tehsil-Yawal District-Jalgaon, Maharashtra.</td></tr>
<tr><td>Latitude and Longitude</td><td>
<table>
<tr><th>Boundary points of SHIRAGADH</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>BP 1</td><td>21°07' 48.67" N</td><td>75°33' 36.28" E</td></tr>
<tr><td>BP 2</td><td>21°07' 48.37" N</td><td>75°33' 35.82" E</td></tr>
<tr><td>BP 3</td><td>21°08' 05.57" N</td><td>75°33' 22.86" E</td></tr>
<tr><td>BP 4</td><td>21°08' 05.87" N</td><td>75°33' 23.32" E</td></tr>
</table>
</td></tr>
<tr><td>Sand spot area (In Ha)</td><td>1.04</td></tr>
<tr><td>Proposed production capacity (In Brass)</td><td>3664</td></tr>
<tr><td>Manpower Requirement (considering 3-month period)</td><td>18 labours + 1 mate + 1 Supervisor=20 manpower</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 24X 7 daily.
3. One Computer / Android base Mobile for the online generation of Invoice number.</td></tr>
<tr><td>Water requirement & source</td><td>3.2 KLD – Tankers from nearby village.</td></tr>
<tr><td>Project cost INR (Lakh)</td><td>21.984</td></tr>
</table>

3 Baseline Environmental Status

i. Topography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Yawal, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Yawal, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.

The slope of Sand Spot area is towards NW side ranging from Contour 165 to 160 from MSL i.e 5m. The Highest contour value is 160 and lower is 165. The flow direction of Tapi river is towards NW.

ii. Hydrology

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 1m 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 no impact on flow of water.

iii. Soil Environment

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 1m. There is no major impact on soil of the study area 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 waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 1m 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 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 1m that too 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&CC 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

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

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 wild life 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 analysing 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:

A. The mining operations will provide direct & indirect employment village people.

B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

C. Local work force will be given first preference for employment.

D. 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.
   - Improper disposal of packing material, carried by the workers like 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 banks 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 project area gives a clear idea about the need for the project.
- A major portion of the houses in the study area are semi- pucca type structures.
- 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, which can be managed by providing face mask.

c. Human Settlement:

There are no houses in and around lease area. 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 consider for calculation
1	Area under mining / pit	-	1.04	1.04	1.04	1.04
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			1.04	1.04	1.04	1.04

- ❖ 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.

Supply demand ratio:

Information required on demand and supply of district (2022-23)

S.No.	Name of District	Total sand Demand of District in Brass	Total Sand Available in district in Brass
1	Jalgaon	191380	104531

8 Compliance of earlier Environmental Clearance

- Shiragadh has got earlier Environment clearance in the year 2018-2019. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

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:

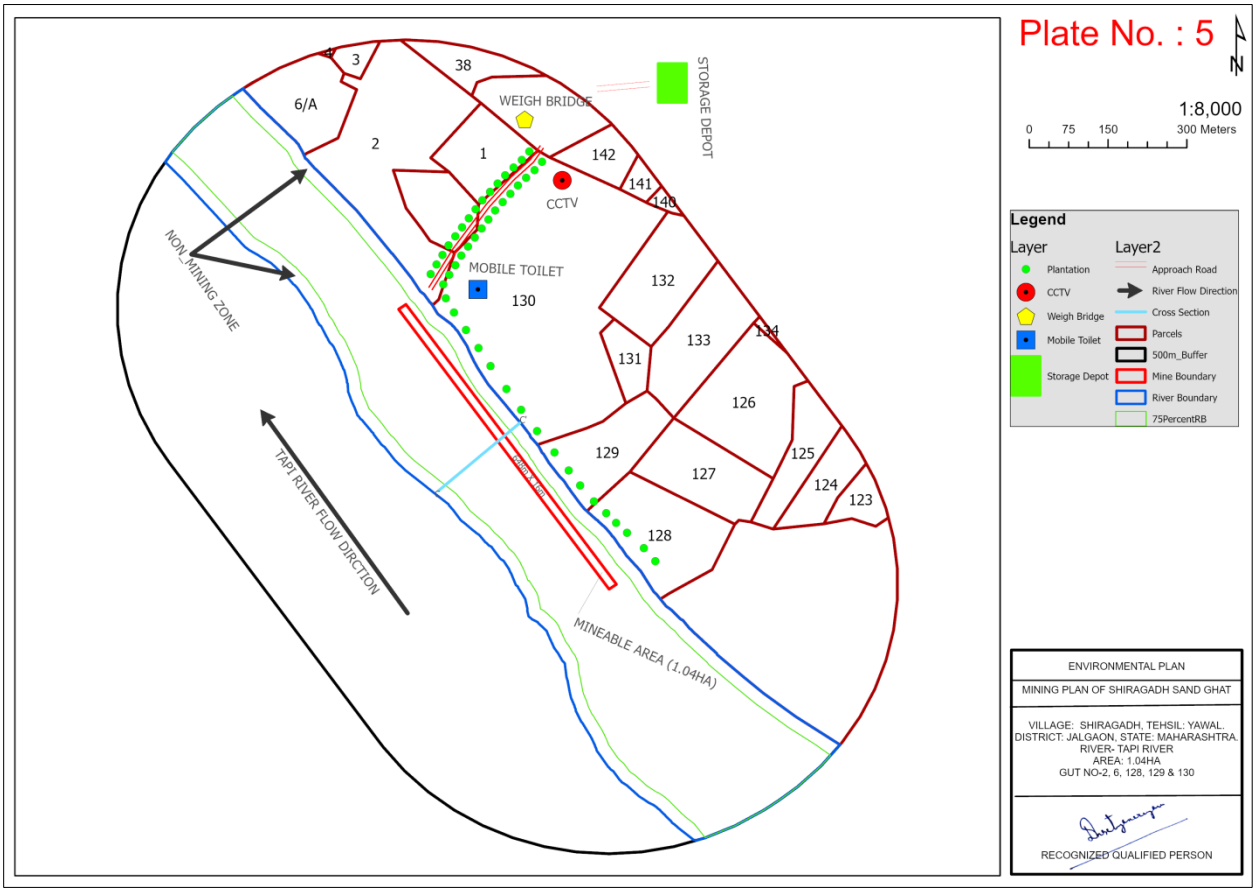
- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- GPS BASED VEHICLE TRACKING SYSTEM
- CCTV Camera

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.

Shiragadh does not form a 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.

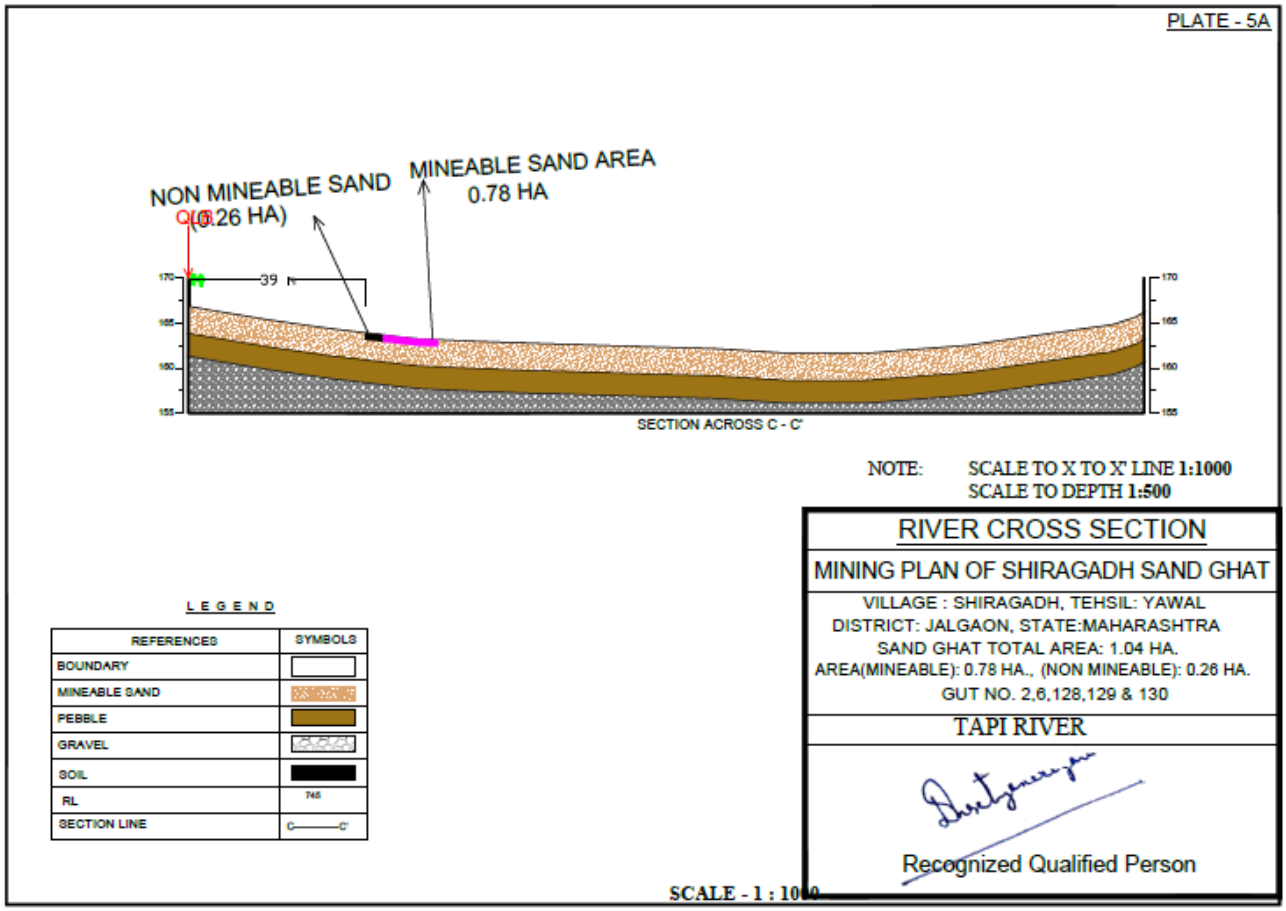
Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



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 334m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Yawal Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

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.

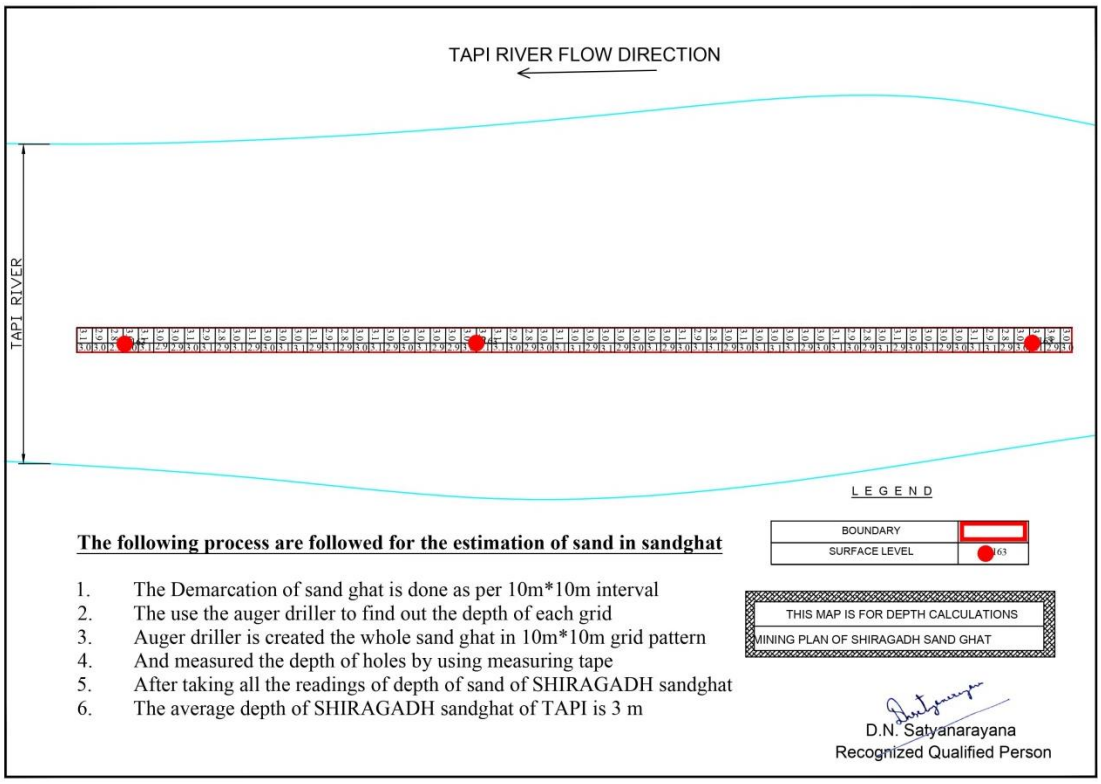


Cross section of riverbed is shown below:

13. 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.

14. 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 SHIRAGADH sandghat
6. The average depth of SHIRAGADH sandghat of TAPI is 3 m

15. 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

The sediment yield of Tapi river at Hatnur dam station are 1.08*1023 tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

As per above data sedimentation yield for Tapi River. 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	330
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	**Local name**	**Importance**
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

17 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:

S.No.	**Budget Allocated**	**Budget (In INR)**
1	Installation of one water tank in nearby village	80000

2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(colouring to Zp school with consultation of Grampanchayat)	70000
	Total	200000

18 Environmental Management Plan (EMP)

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **2,00,000** and recurring cost provision of about INR **2,60,060** 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

		Shiragadh	**EMP Budget**		
SNo.	**Component**	**Description**	**Capital cost Rs.**	**Recurring Cost Rs.**	**Total Cost in Rs**
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	16700	16700
3	Approach Road Maintenance		-	13360	13360
4	Green Belt Plantation	Along the River Bank	81000	-	81000
		Along the Approach Road	83500	-	83500
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	10500	-	10500
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	60000	60000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	20000	20000

9	Tarpaulin Cover (5000 INR per one Cover)		15000	-	15000
		Total	**2,00,000**	**2,60,060**	**4,60,060**

19 Public Consultation Report

Yawal					
S.No	**Villager Name/Village,Taluka**	**Type of Person (Villager/Government Official)**	**Query raised by the Villager/Official**	**Response from the Proponent**	**Action Plan**

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 Shiragadh Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

PRE-FEASIBILITY REPORT

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon 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 1.04 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 3664 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

1. Physiography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The slope of Sand Spot area is towards NW side ranging from Contour 165 to 160 from MSL i.e 5m. The Highest contour value is 160 and lower is 165. The flow direction of Tapi river is towards NW.

2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3meter depth.

3. Details of Exploration

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 1 m of Sand along topo-relief, by advancing from NW to SE direction as per allotted area by auction. The

production can be at the rate of 10,368 Cu.m or 3664 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.04 HA.

Introduction of the project/ background information

The Shiragadh Sand Spot has been kept for Auction which is situated at Village Shiragadh. , Taluka Yawal , and District Jalgaon and hence prior to go for Auction Environmental Clearance are required .

i) Brief description of project

The Sand Spot has sufficient Reserve of Sand to work at 10,368 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 1 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 laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

ii) 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.

3. Project Description

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

i) Location

Shiragadh is a small Village in Yawal Taluka in Jalgaon District of Maharashtra State, India. It comes under Shiragadh Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 13.30 KM towards S from District headquarters Jalgaon. The Sand Ghat is 13.30 KM from Jalgaon and 367 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46O/12.

The boundary pillars of Sand Spot area are given below with GPS values.

Boundary points of SHIRAGADH	Latitude	Longitude
BP 1	21°07' 48.67" N	75°33' 36.28" E
BP 2	21°07' 48.37" N	75°33' 35.82" E
BP 3	21°08' 05.57" N	75°33' 22.86" E
BP 4	21°08' 05.87" N	75°33' 23.32" E

ii) Alternate Sites

No alternate site is proposed.

iii) Magnitude of Operation

Proposed period for mining of sand will be decided by the office of district collectorate 10,368 cu.m. will be excavated during the period.

iv) Project description-mining details

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 648m L X 16 m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable.

The Sand Spot has sufficient Reserve of Sand to work at 10,368 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5m slice of Sand by advancing from NW to SE direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

v) Raw material, marketing & transport of ore

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.

vi) Resource optimization, recycle, reuse

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

vii) Water & 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 3.2 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 labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

viii) Quantity of waste & scheme for management

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

ix) Schematic Representations

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

4. Site Analysis

i) Connectivity

Shiragadh is a small Village in Yawal Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 334 m in NE direction. Jalgaon Railway Station is present at a distance of 12.65 km.

Area covered in SOI Toposheet No- 46O/12.

ii) Land Use, form & Ownership

The ultimate land use pattern for the lease area of 1.04ha. will be consisting of

1. Mining Area : 1.04ha.
2. Construction of Temporary Roads : 0.00 ha.
3. Total : 1.04ha.

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.

iii) Geology

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

Existing land use pattern

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

Social-Economic Environment

Critically analysing 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:

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

Planning brief:

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

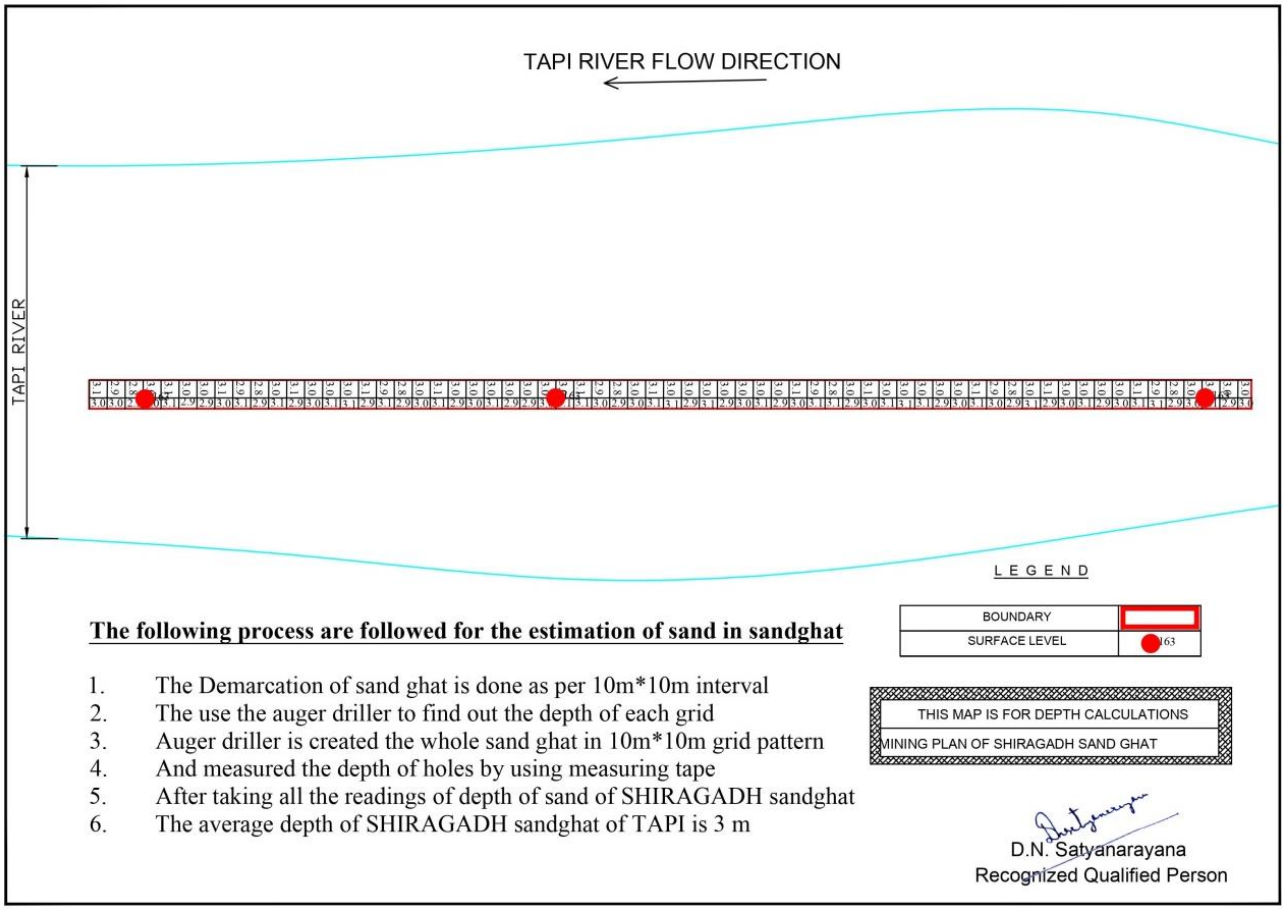
Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available of district in Brass**
1	Jalgaon	191380	104531

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.

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

The sediment yield of Tapi river at Hatnur dam station are 1.08*1023 tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

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

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
- 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.

Compliance of earlier Environmental Clearance

- Shiragadh has got earlier Environment clearance in the year 2018-2019. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

7. 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.

8. R&R Plan

R&R is not involved.

9. Project schedule

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

10. Analysis of Proposal

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

1. It is proposed for opencast manual river sand mining.
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.

11. Costing

Costing parameters will be decided by the District Authorities.

12. Compliance to Environment Clearance

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

13. Any Other Information:

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

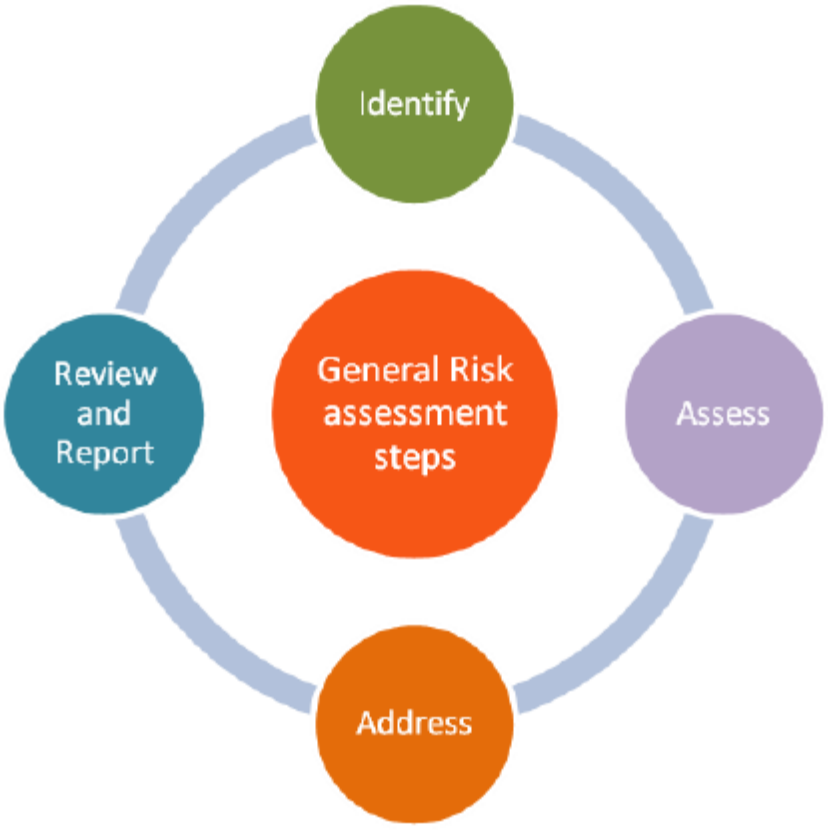
All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of 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, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.04.1994 and 04.09.2006.

Risk Assessment for Shiragadh 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 SHIRAGADH 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 SHIRAGADH 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**
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
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 equipment's. 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.

- No mining activities during rainy days or just after heavy rain.
- 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

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: Patharale Sand Spot

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

Boundary points of Patharale	Latitude	Longitude
BP1	21°07' 25.80" N	75°34' 13.78" E
BP2	21°07' 25.27" N	75°34' 13.52" E
BP3	21°07' 32.71" N	75°33' 55.71" E
BP4	21°07' 33.25" N	75°33' 55.97" E

(iii) Size of the Mining Lease (Hectare): 1.01 HA

(vi) Capacity of Mining Lease (TPA): 3581 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 21.486 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, 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 etc.	Bridge, 3.5Km, NW
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road	 Jalgaon Junction Railway Station, 11.8Km, S NH-53, 12.4Km, SW SH-186, 2.1Km, W Bhokar Rd, 3.33Km, NW

	Any Other Road Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	1.1Km, NE ET, 1.1Km, NE Hatnur Dam Right Canal, 5.42Km, NE 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 Tapi River bed; Girna River, 8.75Km, SW
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	Tapi 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-186, 2.1Km, W; Bhokar Rd, 3.33Km, NW
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Jalgaon , 11.8Km, S
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Z.P. Shool Dhamangaon, 1.1Km, SW Indo-American Hospital - General hospital, 12.3Km, S
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed (this is the case of river sand mining); Girna River, 8.75Km, SW
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 III (Moderate), 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 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.	No
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, Forest & Climate Change (MoEF&CC) 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

Patharale is a small Village in Yawal Taluka in Jalgaon District of Maharashtra State, India. It comes under Patharale Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 13.30 KM towards S from District headquarters Jalgaon. The Sand Ghat is 13.30 KM from Jalgaon and 367 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 952 m in NE direction. Jalgaon Railway Station is present at a distance of 11.82 km.

Area covered in SOI Toposheet No- 46O/12. The GPS reading of boundary point are given below:

Table 1: Salient Features of the Project

<table>
<tr><th>Items</th><th>Details</th></tr>
<tr><td>Location</td><td>Village- Patharale, Tehsil-Yawal District-Jalgaon, Maharashtra.</td></tr>
<tr><td>Latitude and Longitude</td><td>
<table>
<tr><th>Boundary points of PATHARALE</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>BP 1</td><td>21°07' 25.80" N</td><td>75°34' 13.78" E</td></tr>
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<tr><td>BP 4</td><td>21°07' 33.25" N</td><td>75°33' 55.97" E</td></tr>
</table>
</td></tr>
<tr><td>Sand spot area (In Ha)</td><td>1.01</td></tr>
<tr><td>Proposed production capacity (In Brass)</td><td>3581</td></tr>
<tr><td>Manpower Requirement (considering 3-month period)</td><td>18 labours + 1 mate + 1 Supervisor=20 manpower</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 24X 7 daily.
3. One Computer / Android base Mobile for the online generation of Invoice number.</td></tr>
<tr><td>Water requirement & source</td><td>5.8 KLD – Tankers from nearby village.</td></tr>
<tr><td>Project cost INR (Lakh)</td><td>21.486 Lakhs</td></tr>
</table>

3 Baseline Environmental Status

i. Topography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Yawal, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Raver, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Yawal, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.

The slope of Sand Spot area is towards NW side ranging from Contour 159 to 156 from MSL i.e 3m. The Highest contour value is 159 and lower is 156. The flow direction of Tapi river is towards NW.

ii. Hydrology

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 1m 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 no impact on flow of water.

iii. Soil Environment

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 1m. There is no major impact on soil of the study area 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 waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 1m 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 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 1m that too 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&CC 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

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

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 wild life 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 analysing 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:

A. The mining operations will provide direct & indirect employment village people.

B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

C. Local work force will be given first preference for employment.

D. 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.
   - Improper disposal of packing material, carried by the workers like 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 banks 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 project area gives a clear idea about the need for the project.
- A major portion of the houses in the study area are semi- pucca type structures.
- 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, which can be managed by providing face mask.

c. Human Settlement:

There are no houses in and around lease area. 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 consider for calculation
1	Area under mining / pit	-	1.01	1.01	1.01	1.01
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			1.01	1.01	1.01	1.01

- ❖ 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.

Supply demand ratio:

Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available in district in Brass**
1	Jalgaon	191380	104531

8 Compliance of earlier Environmental Clearance

- Patharale has got earlier Environment clearance in the year 2018-2019. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

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

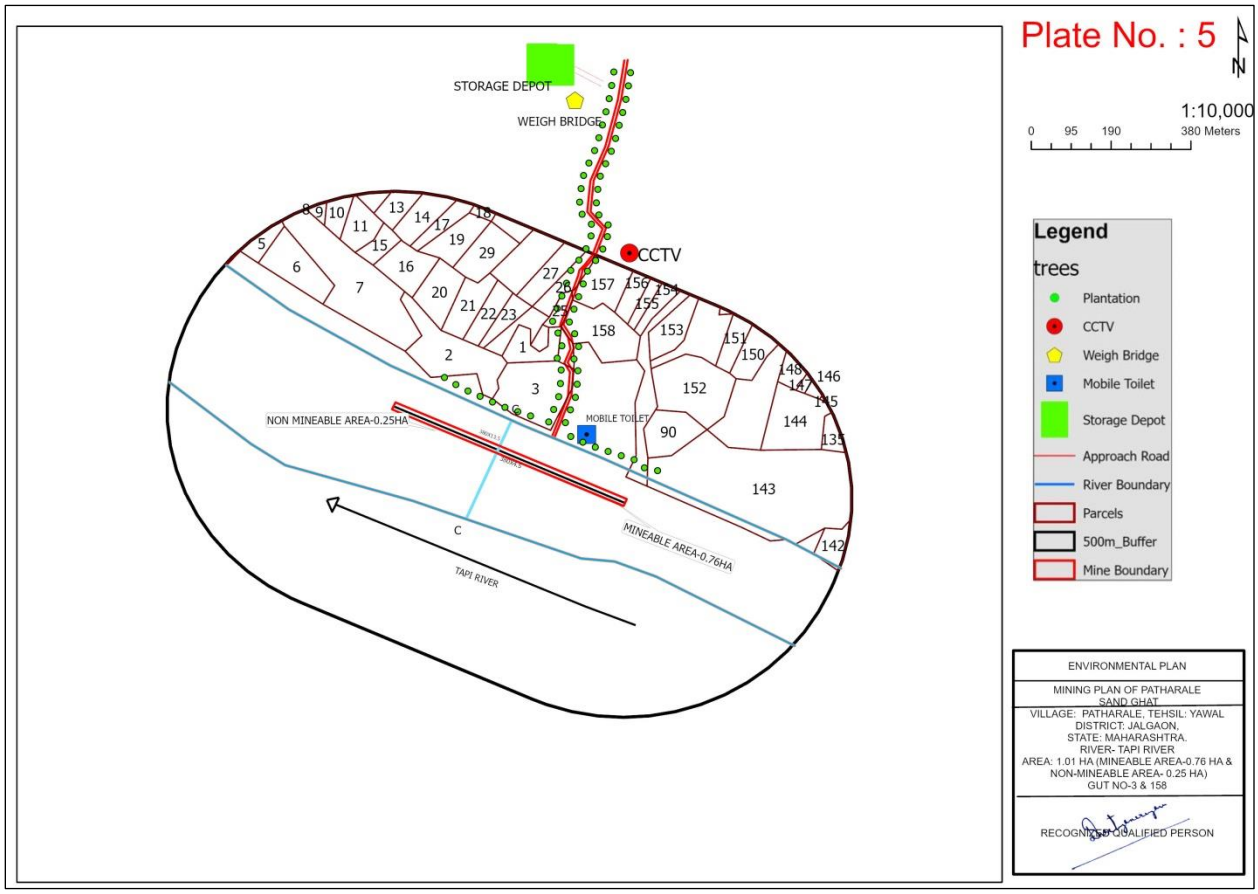
- Void Pantograph
- Watermark
- GPS BASED VEHICLE TRACKING SYSTEM
- CCTV Camera

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.

Patharale does not form a 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.

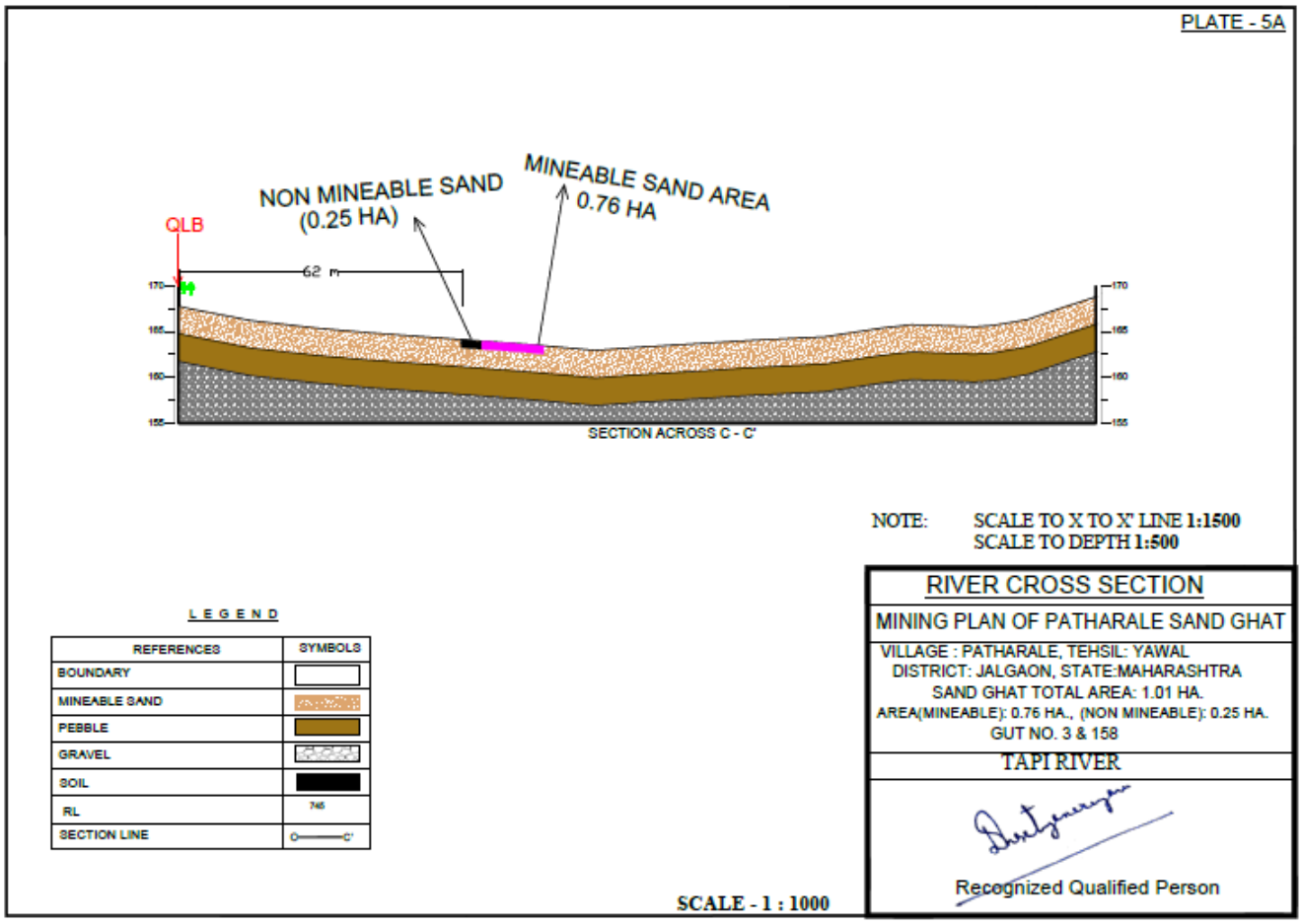
Proposed sand ghat showing mine area, non-mine area, location of bio toilets, location of CCTV cameras, fencing, weigh bridge, approach road etc. layout is given below:



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 952m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Yawal Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

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.

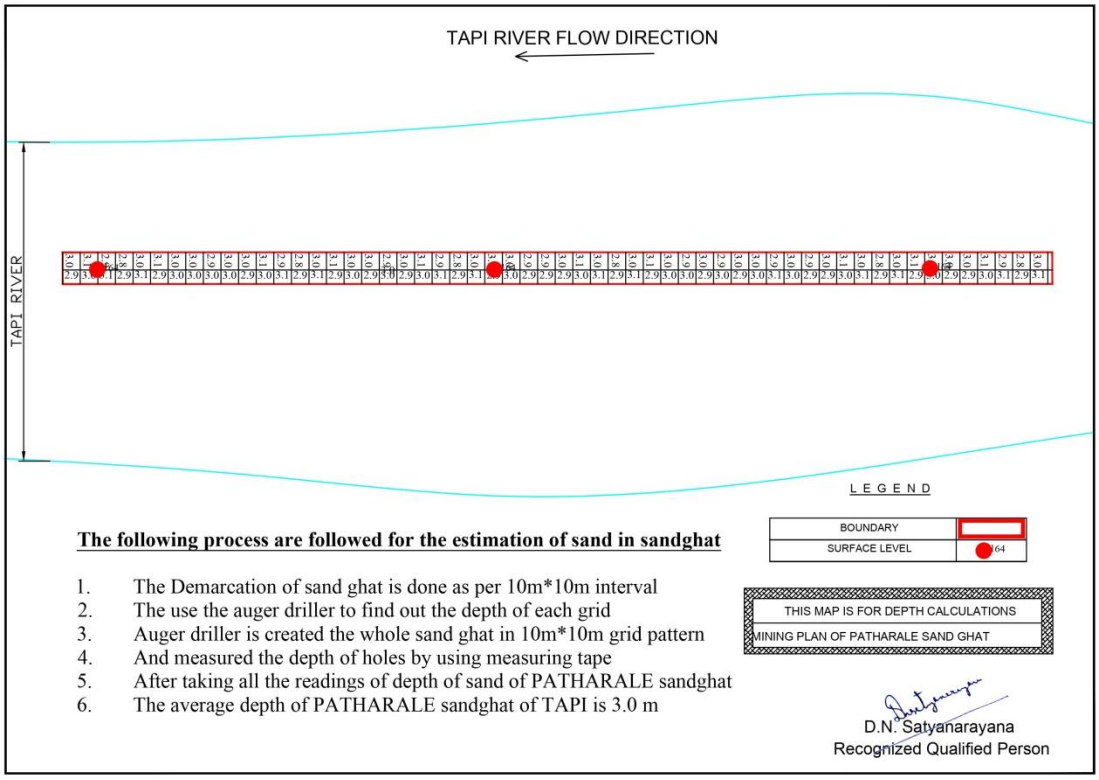


Cross section of riverbed is shown below:

13. 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.

14. 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 PATHARALE sandghat
6. The average depth of PATHARALE sandghat of TAPI is 3.0 m

15. 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

The sediment yield of Tapi river at Hatnur dam station are 1.08*1023 tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

As per above data sedimentation yield for Tapi River. 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	620
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	**Local name**	**Importance**
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

17 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:

S.No.	**Budget Allocated**	**Budget (In INR)**
1	Installation of one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000

3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development (Benches for ZP School with consultation with Grampanchayat)	70000
	Total	200000

18 Environmental Management Plan (EMP)

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **3,45,275** and recurring cost provision of about INR **3,15,680** 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

		Patharale	**EMP Budget**		
SNo.	**Component**	**Description**	**Capital cost Rs.**	**Recurring Cost Rs.**	**Total Cost in Rs**
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	47600	47600
3	Approach Road Maintenance		-	38080	38080
4	Green Belt Plantation	Along the River Bank	70375	-	70375
		Along the Approach Road	238000	-	238000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	11900	-	11900
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	60000	60000
7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	20000	20000
9	Tarpaulin Cover (5000 INR per one Cover)		15000	-	15000

Total	**3,45,275**	**3,15,680**	**6,60,955**

19 Public Consultation Report

Yawal					
S.No	**Villager Name/Village,Taluka**	**Type of Person (Villager/Government Official)**	**Query raised by the Villager/Official**	**Response from the Proponent**	**Action Plan**

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 Patharale Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

PRE-FEASIBILITY REPORT

The Patharale Sand Spot is situated at Village Patharale, Taluka Yawal, District- Jalgaon. Sand Spot is 1.01 HA of area in Gut No. 3 & 158 of Patharale village of Yawal Tehsil, Jalgaon district. Detail of the project is summarised below,

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon 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 1.01 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 3581 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

1. Physiography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The slope of Sand Spot area is towards NW side ranging from Contour 159 to 156 from MSL i.e 3m. The Highest contour value is 156 and lower is 159. The flow direction of Tapi river is towards NW.

2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3meter depth.

3. Details of Exploration

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed. Mining -The mining will be continued with present method of open cast mining by cutting slice of 1m of Sand along topo-relief, by advancing from South to North direction as per allotted area by auction. The production can be at the rate of 10134 Cu. M or 3581brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.01 HA.

Introduction of the project/ background information

The Patharale Sand Spot has been kept for Auction which is situated at Village Patharale , Taluka Yawal , and District Jalgaon and hence prior to go for Auction Environmental Clearance are required.

i) Brief description of project

The Sand Spot has sufficient Reserve of Sand to work at 10134 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 1 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 laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

ii) 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.

3. Project Description

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

i) Location

Patharale is a small Village in Yawal Taluka in Jalgaon District of Maharashtra State, India. It comes under Patharale Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 13.30 KM towards S from District headquarters Jalgaon. The Sand Ghat is 13.30 KM from Jalgaon and 367 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46O/12.

The boundary pillars of Sand Spot area are given below with GPS values.

Boundary points of PATHARALE	Latitude	Longitude
BP 1	21°07' 25.80" N	75°34' 13.78" E
BP 2	21°07' 25.27" N	75°34' 13.52" E
BP 3	21°07' 32.71" N	75°33' 55.71" E
BP 4	21°07' 33.25" N	75°33' 55.97" E

ii) Alternate Sites

No alternate site is proposed.

iii) Magnitude of Operation

Proposed period for mining of sand will be decided by the office of district collectorate 10134 cu.m. will be excavated during the period.

iv) Project description-mining details

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 563m L X 18 m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable.

The Sand Spot has sufficient Reserve of Sand to work at 10134Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 1 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 laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

v) Raw material, marketing & transport of ore

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.

vi) Resource optimization, recycle, reuse

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

vii) Water & 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 5.8 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 labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

viii) Quantity of waste & scheme for management

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

ix) Schematic Representations

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

4. Site Analysis

i) Connectivity

Patharale is a small Village in Yawal Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 952 m in NE direction. Jalgaon Railway Station is present at a distance of 11.82 km.

ii) Land Use, form & Ownership

The ultimate land use pattern for the lease area of 1.01ha. will be consisting of

1. Mining Area : 1.01ha.
2. Construction of Temporary Roads : 0.00 ha.
3. Total : 1.01ha.

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.

iii) Geology

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

Existing land use pattern

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

Social-Economic Environment

Critically analysing 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:

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

Planning brief:

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

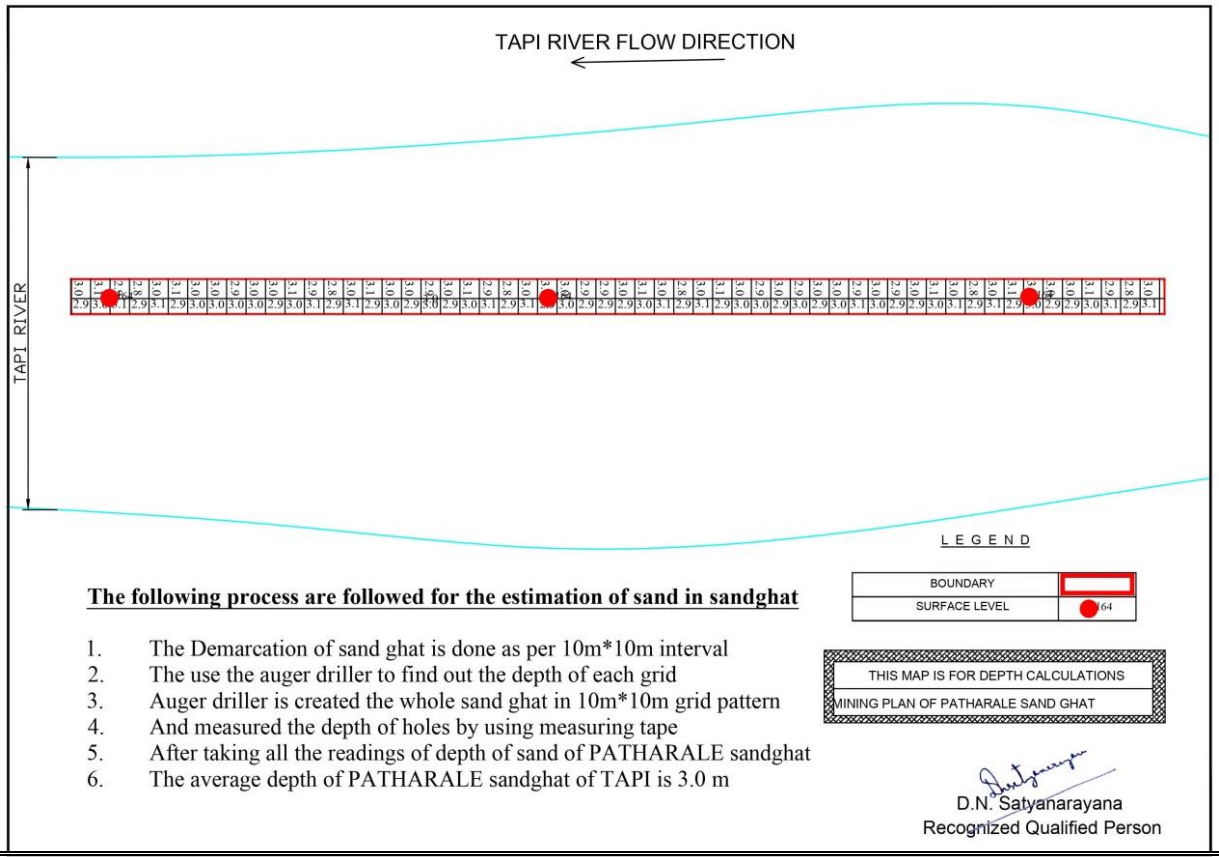
Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available of district in Brass**
1	Jalgaon	191380	104531

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.

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.



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 PATHARALE sandghat
6. The average depth of PATHARALE sandghat of TAPI is 3.0 m

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

The sediment yield of Tapi river at Hatnur dam station are 1.08*1023 tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

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

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
- 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.

Compliance of earlier Environmental Clearance

- ❖ Patharale has got earlier Environment clearance in the year 2018-2019. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

7. 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.

8. R&R Plan

R&R is not involved.

9. Project schedule

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

10. Analysis of Proposal

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

1. It is proposed for opencast manual river sand mining.
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.

11. Costing

Costing parameters will be decided by the District Authorities.

12. Compliance to Environment Clearance

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

13. Any Other Information:

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

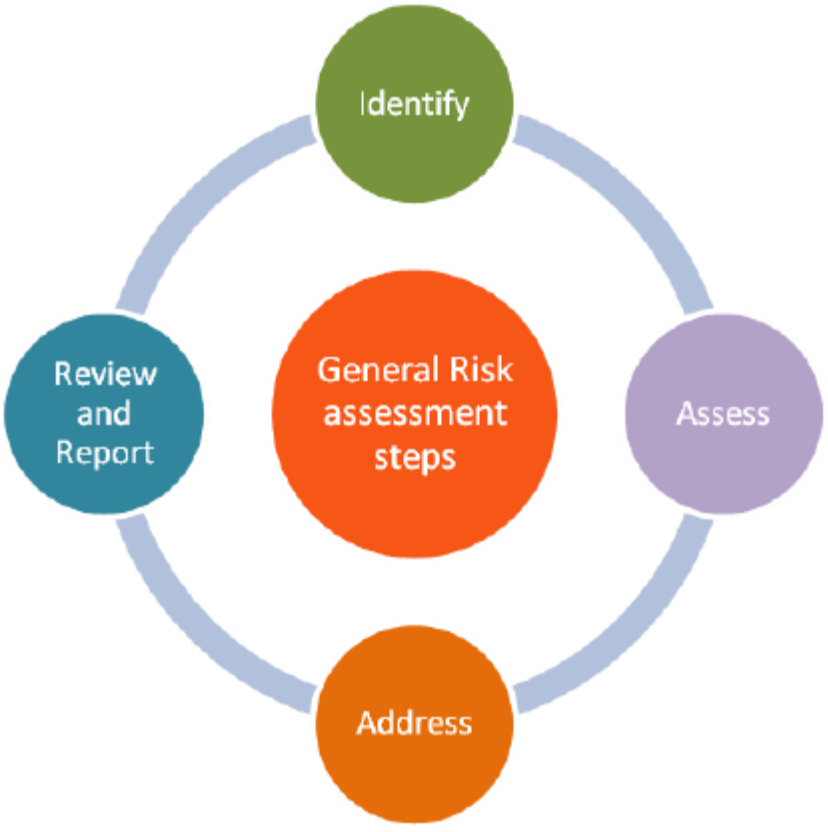
All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of 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, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.01.1994 and 04.09.2006.

Risk Assessment for Patharale 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 PATHARALE 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 PATHARALE 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**
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
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 equipment's. 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.

- No mining activities during rainy days or just after heavy rain.
- 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

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: Jalod Sand Spot

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

Boundary points of JALOD	Latitude	Longitude
B.P 1	21°10'26.64"N	75° 8'2.99"E
B.P 2	21°10'25.35"N	75° 8'2.88"E
B.P 3	21°10'25.95"N	75° 7'54.25"E
B.P 4	21°10'27.25"N	75° 7'54.35"E

(iii) Size of the Mining Lease (Hectare): 1 HA

(vi) Capacity of Mining Lease (TPA): 3534 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 21.204 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, 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 etc.	Bridge, 1.35 Km, SE
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 In-take for drinking water pump house	 Amalner Railway Station, 15.8 Km, SE NH52, 31.5 Km SW SH-1, 1.2 Km, SE Highway, 12.16Km, SW 1.3 Km, S ET, 0.79 Km SW Padalsare Dam, 13Km, W Nil

	Intake for Irrigation canal pumps	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 Tapi River bed; Bori River, 6.69 Km, SW
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	Tapi River Bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH52, 31.5 Km SW SH-1, 1.2 Km, SE Highway, 12.16Km, SW
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Amlaner, 15.67 Km, SW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	School, 1.35 Km, S Hospital, 5.49 Km, S
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Tapi River Bed (this is the case of river sand mining) Bori River, 6.69 Km, SW
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 III (Moderate), according to the Indian Standard Seismic Zoning Map.
15	Is proposed mining site located over or near fissure / fracture for ground water	No

	recharge	
16	Whether the proposal involves approval or 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.	No
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, Forest & Climate Change (MoEF&CC) 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

Jalod is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India. It comes under Jalod Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 48 KM towards North West from District headquarters Jalgaon. The Sand Ghat is 16 KM from Amalner and 328 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 1227 m in West direction. Jalgaon Railway Station is present at a distance of 47.5 KM.

Area covered in SOI Toposheet No- 46O/4. The GPS reading of boundary point are given below:

Table 1: Salient Features of the Project

<table>
<tr><th>Items</th><th>Details</th></tr>
<tr><td>Location</td><td>Village- Jalod, Tehsil-Amalner District-Jalgaon, Maharashtra.</td></tr>
<tr><td>Latitude and Longitude</td><td>
<table>
<tr><th>Boundary points of JALOD</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>B.P 1</td><td>21°10'26.64"N</td><td>75° 8'2.99"E</td></tr>
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<tr><td>B.P 4</td><td>21°10'27.25"N</td><td>75° 7'54.35"E</td></tr>
</table>
</td></tr>
<tr><td>Sand spot area (In Ha)</td><td>1</td></tr>
<tr><td>Proposed production capacity (In Brass)</td><td>3534</td></tr>
<tr><td>Manpower Requirement (considering 3-month period)</td><td>18 labours + 1 mate + 1 Supervisor=20 manpower</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 24X 7 daily.
3. One Computer / Android base Mobile for the online generation of Invoice number.</td></tr>
<tr><td>Water requirement & source</td><td>6.8 KLD – Tankers from nearby village.</td></tr>
<tr><td>Project cost INR (Lakh)</td><td>21.204 Lakhs</td></tr>
</table>

3 Baseline Environmental Status

i. Topography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Amalner, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Tapi valley and southern hills. In Tapi alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Amalner, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Amalner, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.

The slope of Sand Spot area is towards West side ranging from Contour 148 to 146 from MSL i.e 2m. The Highest contour value is 148 and lower is 146. The flow direction of Tapi river is towards West.

ii. Hydrology

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 1m 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 no impact on flow of water.

iii. Soil Environment

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 1m. There is no major impact on soil of the study area 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 waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 1m 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 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 1m that too 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&CC 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

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

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 wild life 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 analysing 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:

A. The mining operations will provide direct & indirect employment village people.

B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.

C. Local work force will be given first preference for employment.

D. 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.
   - Improper disposal of packing material, carried by the workers like 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 banks 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 project area gives a clear idea about the need for the project.
- A major portion of the houses in the study area are semi- pucca type structures.
- 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, which can be managed by providing face mask.

c. Human Settlement:

There are no houses in and around lease area. 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 consider for calculation
1	Area under mining / pit	-	1	1	1	1
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			1	1	1	1

- ❖ 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.

Supply demand ratio:

Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available in district in Brass**
1	Jalgaon	191380	104531

8 Compliance of earlier Environmental Clearance

- Jalod has got earlier Environment clearance in the year 2016-2017. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

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

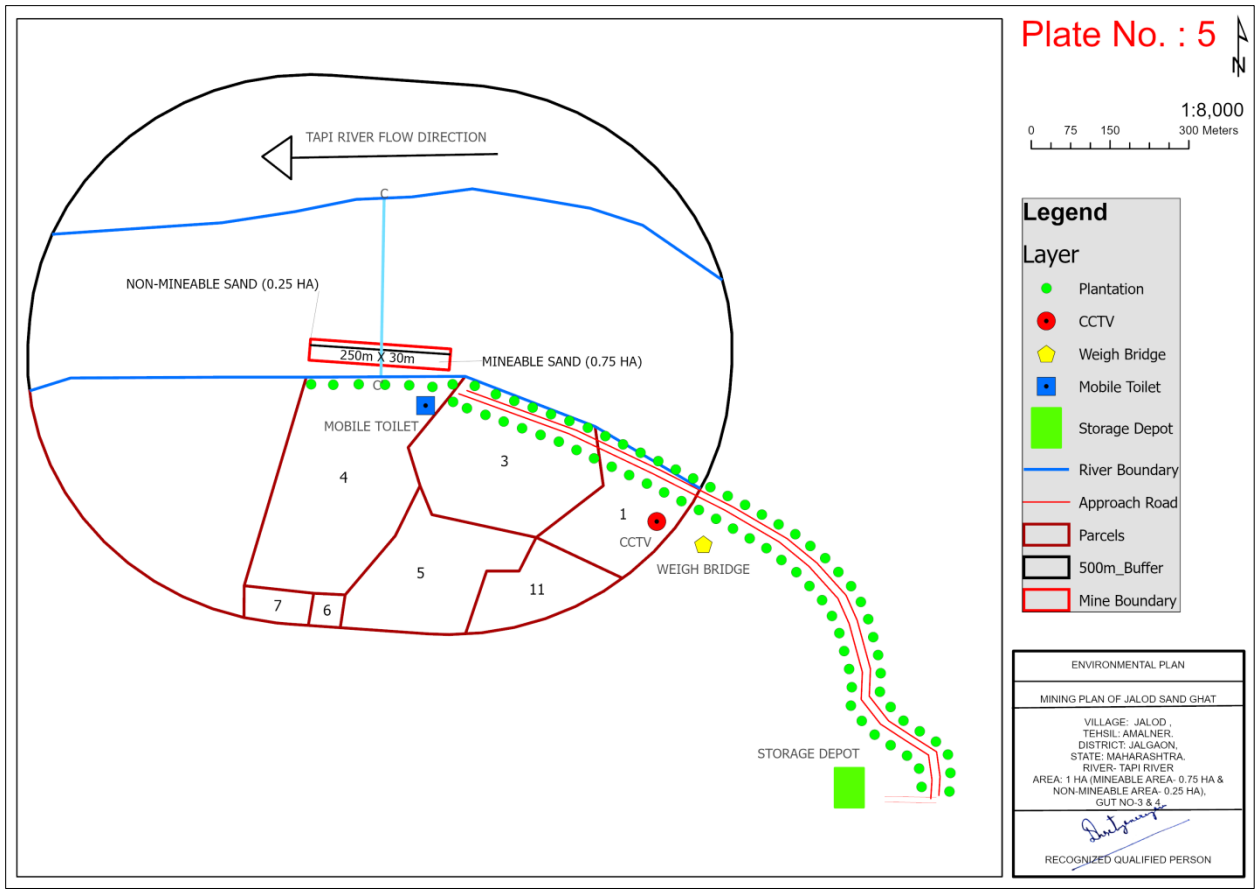
- ❖ CCTV Camera

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.

Jalod does not form a 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:



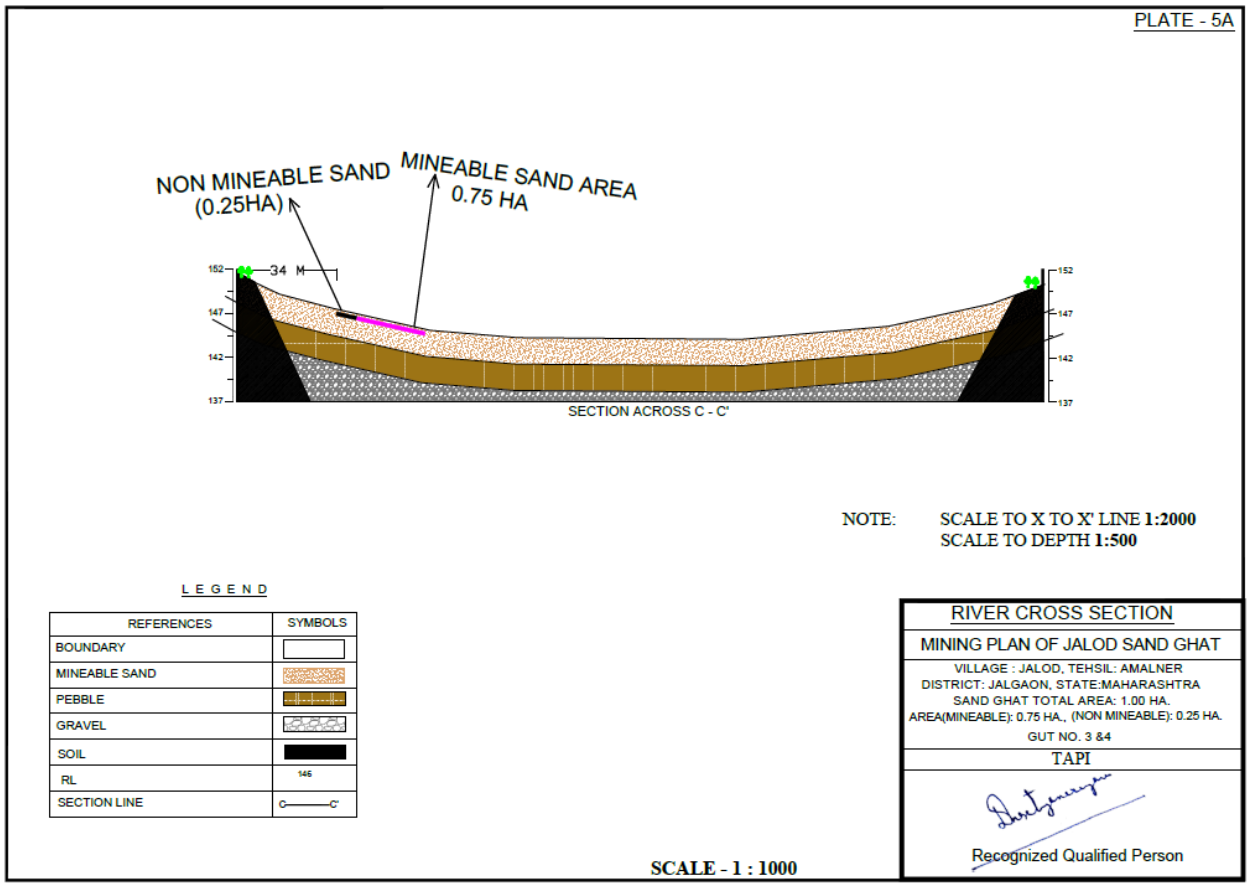
11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.

The proposed approach road length is at 1227 m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by

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

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.

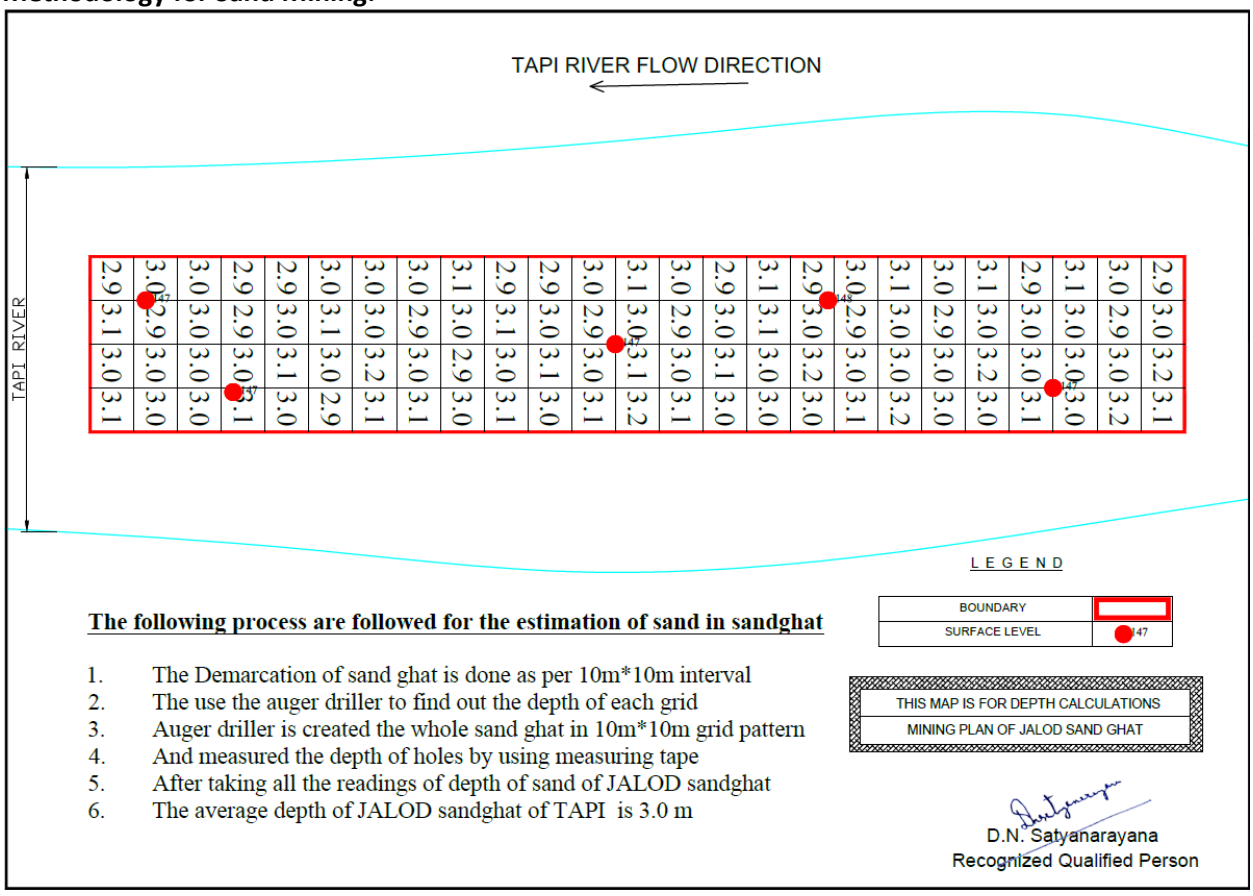
Cross section of riverbed is shown below:



13. 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.

14. 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 JALOD sandghat
6. The average depth of JALOD sandghat of TAPI is 3.0 m

15. 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*(16-0.26log(A)) *F

2. **For Runoff More Than 2 Inches**

   S=*1958*(Q)*(e-0.055*Q) *(13-0.26log (A))

Where

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

Q= average annual runoff (m3),

A= net drainage area in sq. Mile

- The sediment yield of Tapi river at Hatnur dam station are $1.08*10^{23}$ tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

As per above data sedimentation yield for Tapi River. 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	680
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	**Local name**	**Importance**
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

17 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 one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Benches for ZP School with consultation with Grampanchayat)	70000
	Total	2,00,000

18 Environmental Management Plan (EMP)

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **3,89,550** and recurring cost provision of about INR **3,40,430** 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

		Jalod	EMP Budget		
SNo.	**Component**	**Description**	**Capital cost Rs.**	**Recurring Cost Rs.**	**Total Cost in Rs**
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	61350	61350
3	Approach Road Maintenance		-	49080	49080
4	Green Belt Plantation	Along the River Bank	31250	-	31250
		Along the Approach Road	307000	-	307000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	26300	-	26300
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	60000	60000

7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	20000	20000
9	Tarpaulin Cover (5000 INR per one Cover)		15000	-	15000
		Total	**3,89,550**	**3,40,430**	**7,29,980**

19 Public Consultation Report

Amalner					
S.No	**Villager Name/Village,Taluka**	**Type of Person (Villager/Government Official)**	**Query raised by the Villager/Official**	**Response from the Proponent**	**Action Plan**

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 Jalod Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

PRE-FEASIBILITY REPORT

The Jalod Sand Spot is situated at Village Jalod, Taluka Amalner, District- Jalgaon. Sand Spot is 1 HA of area in Gut No. 3 & 4 of Jalod village of Amalner Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon 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 1 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 3534 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Tapi river bank.

1. Physiography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Tapi valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Tapi valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Tapi River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Tapi river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The slope of Sand Spot area is towards West side ranging from Contour 148 to 146 from MSL i.e 2m. The Highest contour value is 148 and lower is 146. The flow direction of Tapi river is towards West.

2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3meter.

3. Details of Exploration

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.

Mining - The mining will be continued with present method of open cast mining by cutting slice of 1m of Sand along topo-relief, by advancing from West to East direction as per allotted area by auction. The production can be at the rate of 10000 Cu.m or 3534 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.00HA.

Introduction of the project/ background information

The Jalod Sand Spot has been kept for Auction which is situated at Village Jalod, Taluka Amalner, and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

i) Brief description of project

The Sand Spot has sufficient Reserve of Sand to work at 10000 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 1 m slice of Sand by advancing from West to East direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

ii) 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.

3. Project Description

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

i) Location

Jalod is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India. It comes under Jalod Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 48 KM towards North West from District headquarters Jalgaon. The Sand Ghat is 16 KM from Amalner and 328 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 1227 m in SE direction. Jalgaon Railway Station is present at a distance of 47.5 KM.

Area covered in SOI Toposheet No- 46O/4.

The boundary pillars of Sand Spot area are given below with GPS values.

Boundary points of JALOD	Latitude	Longitude
B.P 1	21°10'26.64"N	75° 8'2.99"E
B.P 2	21°10'25.35"N	75° 8'2.88"E
B.P 3	21°10'25.95"N	75° 7'54.25"E

B.P 4	21°10'27.25"N	75° 7'54.35"E

ii) Alternate Sites

No alternate site is proposed.

iii) Magnitude of Operation

Proposed period for mining of sand will be decided by the office of district collectorate 10,000 Cu.m . will be excavated during the period.

iv) Project description-mining details

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 250m L X 40m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable. These Mine features are shown on Surface Plan and are enclosed as Plate No – 3.

The Sand Spot has sufficient Reserve of Sand to work at 10,000 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 1 m slice of Sand by advancing from West to East direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

v) Raw material, marketing & transport of ore

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.

vi) Resource optimization, recycle, reuse

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

vii) Water & 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 6.8 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 labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

viii) Quantity of waste & scheme for management

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

ix) Schematic Representations

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

4. Site Analysis

i) Connectivity

Jalod is a small Village in Amalner Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 1227 m in West direction. Jalgaon Railway Station is present at a distance of 47.5 KM.

Area covered in SOI Toposheet No- 46O/4.

ii) Land Use, form & Ownership

The ultimate land use pattern for the lease area of 1ha. will be consisting of

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

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.

iii) Geology

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

Existing land use pattern

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

Social-Economic Environment

Critically analysing 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:

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

Planning brief:

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

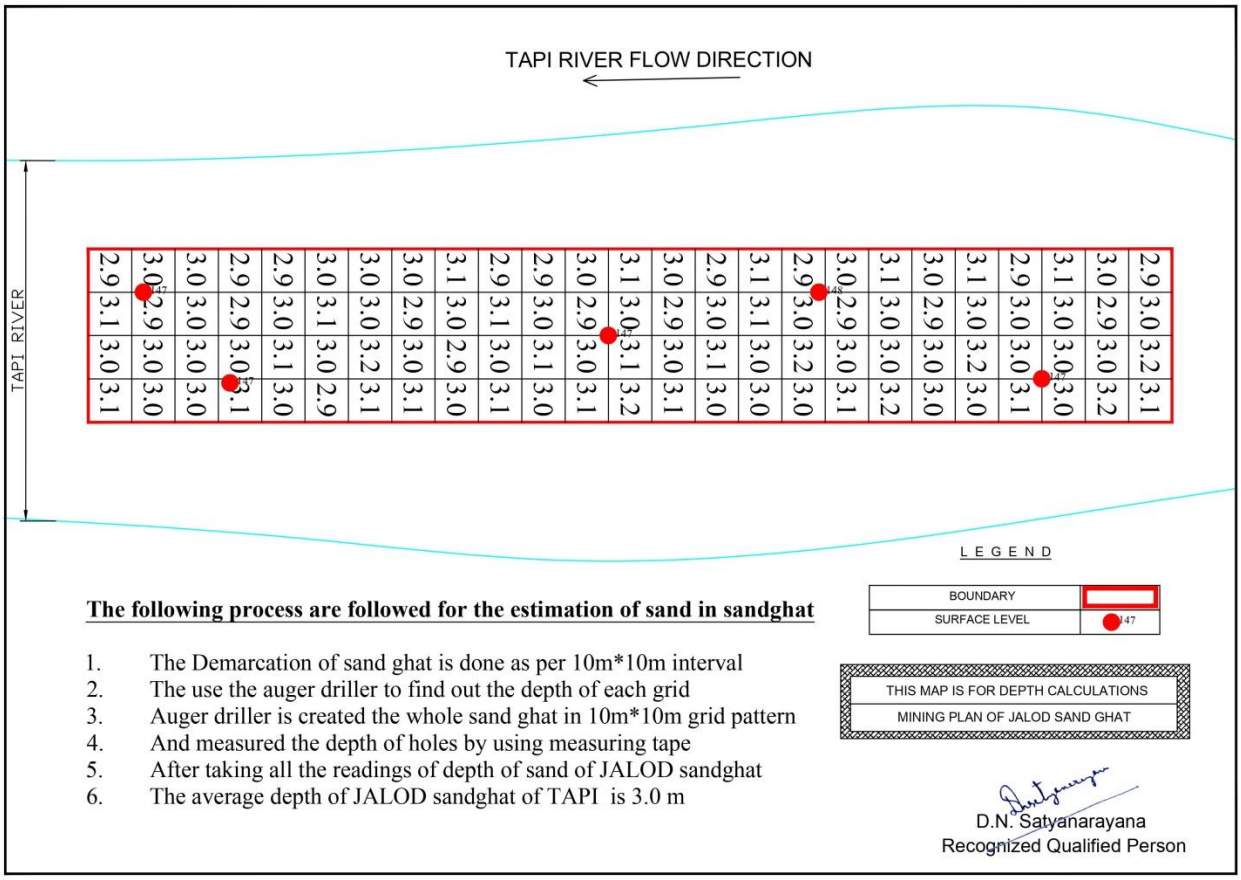
Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available of district in Brass**
1	Jalgaon	191380	104531

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.

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*(16-0.26log(A)) *F

2. **For Runoff More Than 2 Inches**

   S=*1958*(Q)*(e-0.055*Q) *(13-0.26log (A))

Where

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

Q= average annual runoff (m3),

A= net drainage area in sq. mile

The sediment yield of Tapi river at Hatnur dam station are 1.08*1023 tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

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

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
- 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.

Compliance of earlier Environmental Clearance

- Jalod has got earlier Environment clearance in the year 2016-2017. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

7. 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.

8. R&R Plan

R&R is not involved.

9. Project schedule

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

10. Analysis of Proposal

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

1. It is proposed for opencast manual river sand mining.
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.

11. Costing

Costing parameters will be decided by the District Authorities.

12. Compliance to Environment Clearance

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

13. Any Other Information:

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

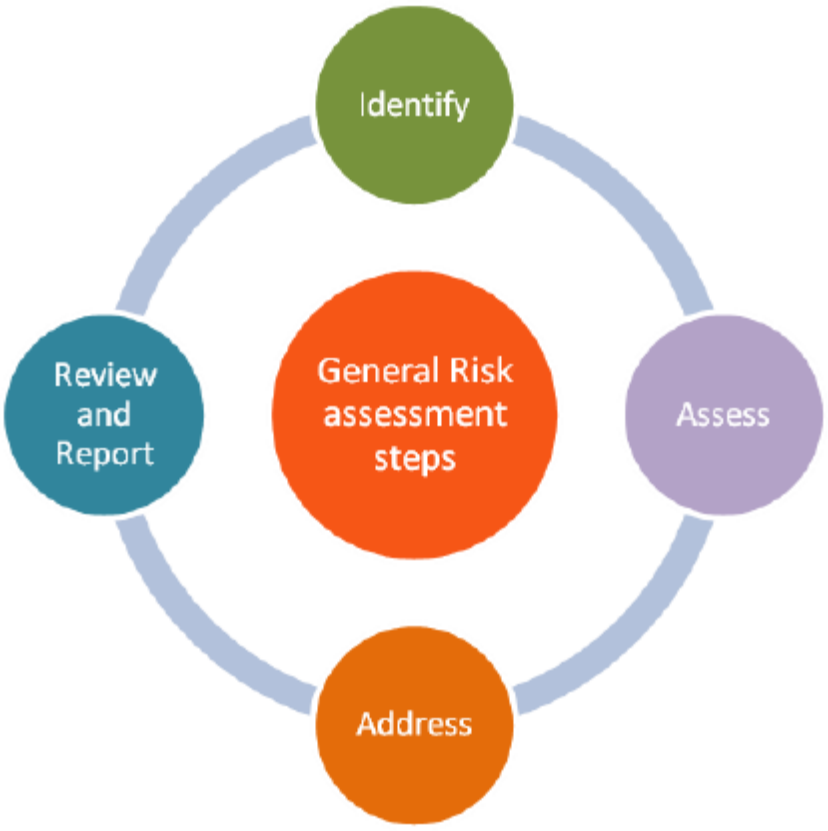
All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of 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, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.1994 and 04.09.2006.

Risk Assessment for Jalod 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 JALOD 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 JALOD 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**
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
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 equipment's. 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.

- No mining activities during rainy days or just after heavy rain.
- 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

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: Utran A.H. Sand Spot

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

Boundary points of Utran A.H.	Latitude	Longitude
BP1	20°43' 51.23" N	75°22' 19.57" E
BP2	20°43' 49.82" N	75°22' 14.61" E
BP3	20°43' 51.99" N	75°22' 13.91" E
BP4	20°43' 53.41" N	75°22' 18.87" E

(iii) Size of the Mining Lease (Hectare): 1.05 HA

(vi) Capacity of Mining Lease (TPA): 1855 Brass

(v) Period of Mining Lease: 1 year

(vi) Expected cost of the Project: 11.13 Lakhs

(vii) Contact Information: District Mining Officer Jalgaon, 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 etc.	Bridge, 5.56Km, SW
2	Distance from infrastructural facilities Railway line National Highway State Highway Major District Road Any Other Road	 Pardhade Railway Station, 0.64Km, SE NH-53, 22.6Km, NW SH-25, 9.9Km, NW Pachora-Jalgaon Highway, 4.56Km, E 0.32Km, S

	Electric transmission line pole or tower Canal or check dam or reservoirs or lake or ponds In-take for drinking water pump house Intake for Irrigation canal pumps	ET, 0.40Km, SE Bahula Dam, 3.98Km, SE 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 Girna River bed; Hivara River, 1.66KM, SE
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	Girna River Bed
7	State, National boundaries	Nil
8	Routes or facilities used by the public for access to recreation or other tourist, Pilgrim areas	NH-53, 22.6Km, NW SH-25, 9.9Km, NW Pachora-Jalgaon Highway, 4.56Km, E
9	Defence installations	Nil
10	Densely populated or built-up area, distance from nearest human habitation	Pachora, 7.11Km, SW
11	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Z P School Duskheda, 1.65Km, E Indira Nagar Hospital, 2.27Km, N
12	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Girna River Bed (this is the case of river sand mining) Hivara River, 1.66KM, SE
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 III (Moderate), 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 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.	No
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, Forest & Climate Change (MoEF&CC) 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

Utran A.H. is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India. It comes under Utran A.H. Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 33.5 KM towards NE from District headquarters Jalgaon. The Sand Ghat is 33.5 KM from Jalgaon and 319.91 KM from State capital Mumbai.

The sand spot area is connected to approach road at a distance of 444 m in West direction. Pachora Railway Station is present at a distance of 7.27km.

Area covered in SOI Toposheet No- 46P/6.The GPS reading of boundary point are given below:

Table 1: Salient Features of the Project

<table>
<tr><th>Items</th><th>Details</th></tr>
<tr><td>Location</td><td>Village- Utran A.H, Tehsil-Erandol District-Jalgaon, Maharashtra.</td></tr>
<tr><td>Latitude and Longitude</td><td>
<table>
<tr><th>Boundary points of UTRAN A.H.</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>B.P 1</td><td>20°43' 51.23" N</td><td>75°22' 19.57" E</td></tr>
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<tr><td>B.P 4</td><td>20°43' 53.41" N</td><td>75°22' 18.87" E</td></tr>
</table>
</td></tr>
<tr><td>Sand spot area (In Ha)</td><td>1.05</td></tr>
<tr><td>Proposed production capacity (In Brass)</td><td>1855</td></tr>
<tr><td>Manpower Requirement (considering 3-month period)</td><td>12 labours + 1 mate + 1 Supervisor=14 manpower</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 24X 7 daily.
3. One Computer / Android base Mobile for the online generation of Invoice number.</td></tr>
<tr><td>Water requirement & source</td><td>3.6 KLD – Tankers from nearby village.</td></tr>
<tr><td>Project cost INR (Lakh)</td><td>11.13 Lakhs</td></tr>
</table>

3 Baseline Environmental Status

i. Topography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Girna valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Girna valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Girna River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Girna river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The soils in Jalgaon district are essentially derived from the basaltic lava flows and are classified as, a) Deep black soils, b) Medium black soils, c) Loamy and sandy soils and d) Forest soils. Deep black soils are observed in the northern part of Amalner, Erandol, Jalgaon, Bhusaval and Edlabad blocks. Medium black soils occur over large areas in the district viz.; the central belt of the wide Girna valley and southern hills. In Girna alluvial basin, soils are black alluvial clay occurring in the southern parts of Yawal, Erandol, Chopda, Jalgaon, Bhusaval, Chalisgaon, Amalner, and Bhadgaon blocks. Loamy soils are observed in the southern-most part of Amalner, Erandol, Jalgaon and Bhusawal blocks. Sandy soils are observed on the foothills of Satpuda ranges and near southern hillocks. Forest soils are dark brown and occur on slopes mainly in the Satpuda ranges.

The slope of Sand Spot area is towards NE side ranging from Contour 228 to 227 from MSL i.e 1m. The Highest contour value is 228 and lower is 227. The flow direction of Girna river is towards North East.

ii. Hydrology

The will be no change in water table during mining operation, as the depth of mining shall be restricted to 0.5m 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 no impact on flow of water.

iii. Soil Environment

The area is not having any top soil or fertile soil. The depth of mining shall be restricted to 0.5m. There is no major impact on soil of the study area 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 waste water discharges to water bodies from the mining operations. As observed in the River, the thickness of sand to be excavated will be 0.5m 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 2.80 to 12.10 m BGL in pre-monsoon season and the depth to water levels in post-monsoon ranges from 2.00 to 8.70 m BGL. As the mining activities presently proposed are maximum up to 0.5m that too 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&CC 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

In Jalgaon, the wet season is oppressive and mostly cloudy, the dry season is mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 58°F to 108°F and is rarely below 52°F or above 112°F.

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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 wild life 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 analysing 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:

A. The mining operations will provide direct & indirect employment village people.
B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
C. Local work force will be given first preference for employment.
D. 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.
   - Improper disposal of packing material, carried by the workers like 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 banks 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 project area gives a clear idea about the need for the project.
- A major portion of the houses in the study area are semi- pucca type structures.
- 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, which can be managed by providing face mask.

c. Human Settlement:

There are no houses in and around lease area. 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 consider for calculation
1	Area under mining / pit	-	1.05	1.05	1.05	1.05
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			1.05	1.05	1.05	1.05

- ❖ 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.

Supply demand ratio:

Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available in district in Brass**
1	Jalgaon	191380	104531

8 Compliance of earlier Environmental Clearance

- Utran A.H has earlier Environment clearance in the year 2020-2021. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

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:

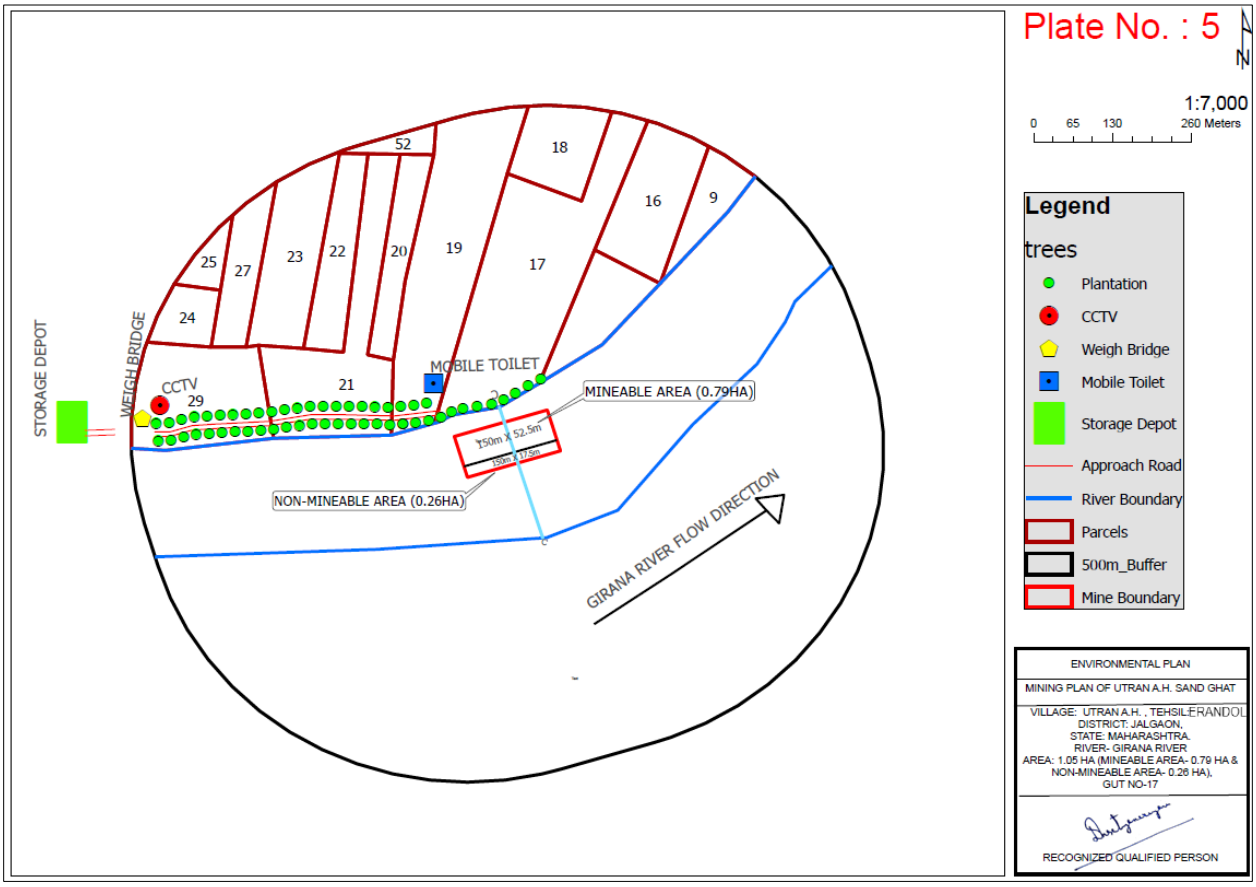
- Printed on Indian Bank Association (IBA) Approved
- Magnetic Ink Character Recognition Code (MICR) paper
- Unique Barcode
- Unique Quick Response Code (QR)
- Fugitive Ink Background
- Invisible Ink Mark
- Void Pantograph
- Watermark
- GPS BASED VEHICLE TRACKING SYSTEM
- CCTV Camera

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.

Utran A.H does not form a 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:

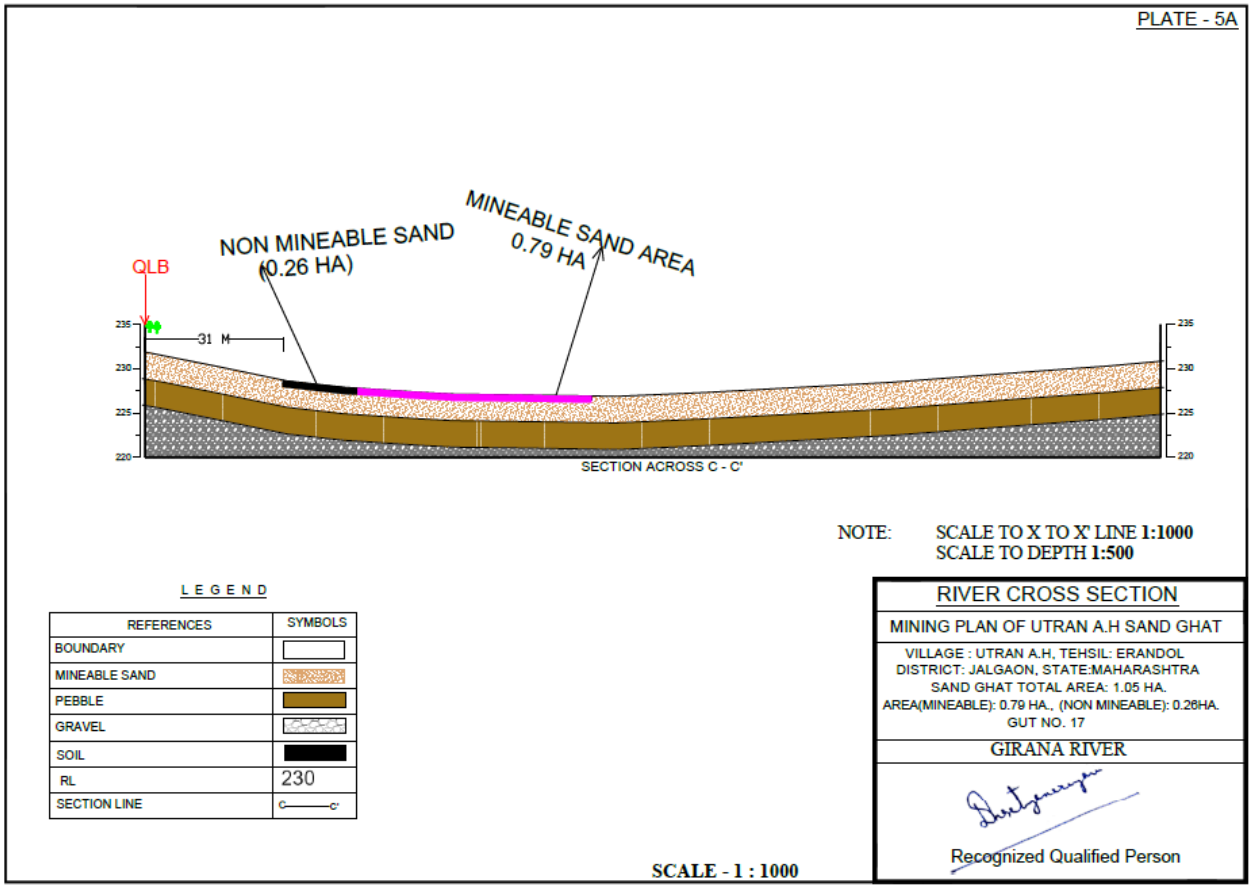


11. Proposed approach road for transport of mined sand from sand ghat to the storage area and consent of storage area from the concerned landowners is an after-auction activity to use their land as approach road.

The proposed approach road length is at 444m and it belongs to Gram Panchayat. The mined-out sand from sand ghat will be stored adjacent to approach near the river bank. Consent of road submitted by Erandol Tahsildar is enclosed for use of land as approach road. The successful bidder will be deciding the storage area and get concern from land owner.

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.

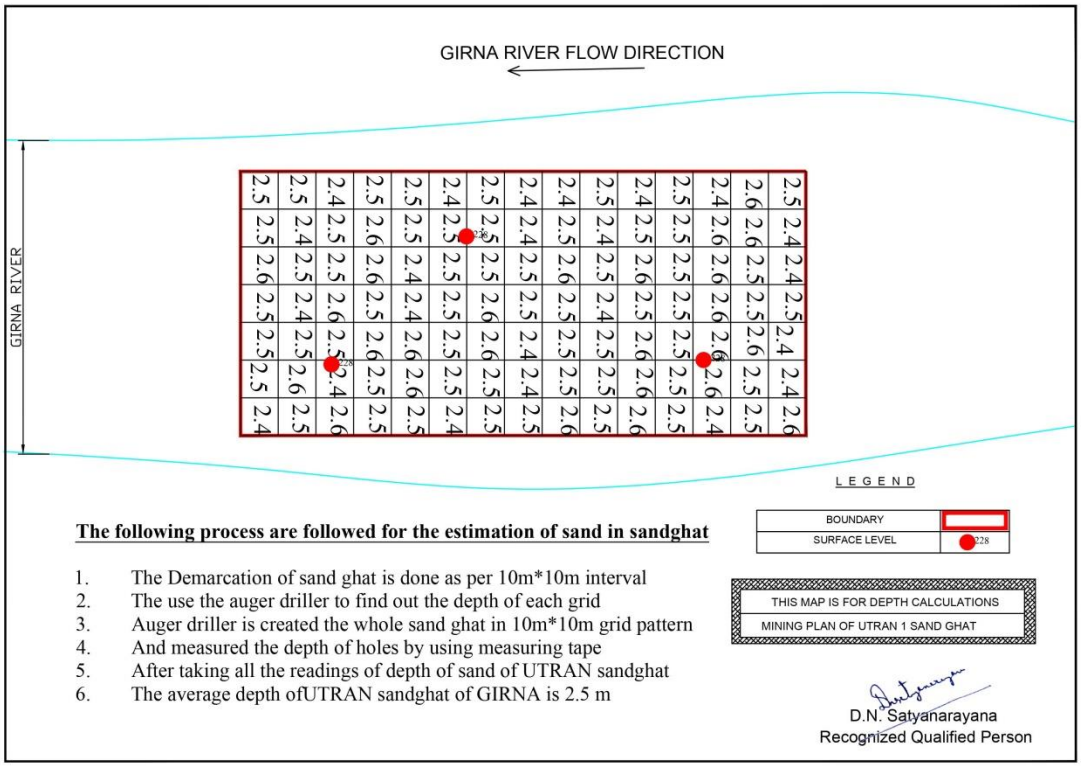
Cross section of riverbed is shown below:



13. 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.

14. 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 UTRAN sandghat
6. The average depth ofUTRAN sandghat of GIRNA is 2.5 m

15. 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

The sediment yield of Girna river at Girana dam station is 4.612*1020 tonnes/year/km2 by Dandy-Bolton Equation.

(Source: State Irrigation Department)

Conclusion:

As per above data sedimentation yield for Girna River. 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	260
Spacing of plants	4 m grid interval
Species selected	Native species

Tree species recommended for Plantation:

Botanical name	**Local name**	**Importance**
Azadirachta Indica	Neem	Neem oil & neem products
Ficus religiosaa	Peepal	Medicinal Use, Fruits & figs
Bambusa vulgaris	Bamboo	Anthelmintic Anti-inflammatory, Astringent Properties

17 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 one water tank in nearby village	80000
2	Providing books and uniforms to nearby village school	25000
3	Needed Repairing work with consultation of Grampanchayat	25000
4	Community Infrastructure Development(Benches for ZP School with consultation with Grampanchayat)	70000
	Total	2,00,000

18 Environmental Management Plan (EMP)

The following plans are proposed under the Environmental Management Plan:

A total capital cost of INR **1,82,650** and recurring cost provision of about INR **2,63,960** 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

		Utran A.H.	EMP Budget		
SNo.	**Component**	**Description**	**Capital cost Rs.**	**Recurring Cost Rs.**	**Total Cost in Rs**
1	Environmental Monitoring programme	Monitoring for Air, water, noise & Groundwater	-	150000	150000
2	Air Pollution Control	Water sprinkling during mining activities	-	22200	22200
3	Approach Road Maintenance		-	17760	17760
4	Green Belt Plantation	Along the River Bank	18750	-	18750
		Along the Approach Road	111000	-	111000
5	Gabion Structure for arresting gravels	Construction of Gabion Structure	32900	-	32900
6	Mobile Toilet	Mobile toilets, Sewage handling and treatment	-	60000	60000

7	Security	Display Boards and other security measures	10000	-	10000
8	Occupational Health & safety	Periodic Health Checkups of workers and Provision of Dust Mask and Periodic health check-up (1000Rs./ Employee)	-	14000	14000
9	Tarpaulin Cover (5000 INR per one Cover)		10000	-	10000
		Total	**1,82,650**	**2,63,960**	**4,46,610**

19 Public Consultation Report

Erandol					
S.No	**Villager Name/Village,Taluka**	**Type of Person (Villager/Government Official)**	**Query raised by the Villager/Official**	**Response from the Proponent**	**Action Plan**

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 Utran A.H Sand Spot will be useful to the developmental work in the district and generate employment opportunities.

PRE-FEASIBILITY REPORT

The Utran A.H. Sand Spot is situated at Village Utran A.H., Taluka Erandol, District- Jalgaon. Sand Spot is 1.05 HA of area in Gut No. 17 of Utran A.H. village of Erandol Tehsil, Jalgaon district. Detail of the project is summarised below

- District Collector Jalgaon with his right to auction Sand as a minor mineral intends to auction the Sand in Jalgaon district.
- District Collector Jalgaon 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 1.05 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 1855 brass sand is proposed to auction from proposed sand spot.
- Proposed site is located at the Girna river bank.

1. Physiography

The district can be divided into three main physiographic divisions in Satpura hill ranges in the northern part with dense forest; Girna valley consisting of alluvial plain in the central part of the district and Ajanta hill ranges, flanking the hill ridges and small valleys in the southern part of the district. The Girna valley contains a vast central alluvial plain from Burhanpur in the east and Dhule in the west. However, the river banks are marked by erosion, forming gully and wasteland which inhabit agriculture extension. Alluvial plain of the Girna River is bounded in the north by steep southern escarpment of the Satpuda, a high hill mountain range trending east north east -west south west. The northern boundary of the district is marked by valleys of the Aner River and its eastern counterpart of Mamat River, which is a tributary of Saki River. These two longitudinal valleys separate the southern range of the Satpura from their northern members.

South of Girna river valley, the area has varied physiography with undulating plains, small hill ranges and broad valleys. The Hatti hills along with Purna Valley on the east has a north west south east trend and passes through the south east corner of Jalgaon district for about 32 km. The Satmala, also known as the Chandur or Ajanta, breaking off sharply from the Sahyadris in the north west of Nashik, runs for about 80 km east in a series of ridges and hills formed by Basalt.

The slope of Sand Spot area is towards NE side ranging from Contour 228 to 227 from MSL i.e 1m. The Highest contour value is 228 and lower is 227. The flow direction of Girna river is towards North East.

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2. Local Geology

The local geology is Sand of various size up to depth of 2.5- 3meter.

3. Details of Exploration

There is sufficient reserve of Sand available & 70% of sand replenishes after every monsoon season in the year therefore conceptual period of mining will continue in the river bed.
Mining - The mining will be continued with present method of open cast mining by cutting slice of 0.5 m of Sand along topo-relief, by advancing from NE to SW direction as per allotted area by auction. The production can be at the rate of 5250 Cu.m or 1855 brass i.e. 1 year from the date of mining plan approval, the size of pit at the end will be 1.05HA.

Introduction of the project/ background information

The Utran A.H Sand Spot has been kept for Auction which is situated at Village Utran A.H. , Taluka Erandol , and District Jalgaon and hence prior to go for Auction Environmental Clearance is required.

i) Brief description of project

The Sand Spot has sufficient Reserve of Sand to work at 5250Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.
The mining will continue with opencast method of Mining by cutting 0.5 m area of Sand by advancing from NE to SW direction as per allotted Sand Spot area and handling of material with the help of labourer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

ii) 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.

3. Project Description

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

i) Location

Utran A.H. is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India. It comes under Utran A.H. Panchayath. It belongs to Khandesh and Northern Maharashtra region. It is located 33.5 KM towards NE from District headquarters Jalgaon. The Sand Ghat is 33.5 KM from Jalgaon and 319.91 KM from State capital Mumbai.

Area covered in SOI Toposheet No- 46P/6.

The boundary pillars of Sand Spot area are given below with GPS values.

Boundary points of UTRAN A.H.	Latitude	Longitude
B.P 1	20°43' 51.23" N	75°22' 19.57" E

B.P 2	20°43' 49.82" N	75°22' 14.61" E
B.P 3	20°43' 51.99" N	75°22' 13.91" E
B.P 4	20°43' 53.41" N	75°22' 18.87" E

ii) Alternate Sites

No alternate site is proposed.

iii) Magnitude of Operation

Proposed period for mining of sand will be decided by the office of district collectorate 5250 cu.m. will be excavated during the period.

iv) Project description-mining details

The Agency will start the work after getting Allocation Letter from competent Authority by Opencast manual mining method. The size of pit as mentioned is 150m L X 70m W at end of Sand Spot mining period. There will be no dumping material inside Sand Spot area as all mined out were saleable.

The Sand Spot has sufficient Reserve of Sand to work at 5250 Cu.m for a specified period mentioned i.e. 1 year from date mining plan approval.

The mining will continue with opencast method of Mining by cutting 0.5 m slice of Sand by advancing from NE to SW direction as per allotted Sand Spot area and handling of material with the help of laborer's in to the tractor having capacity of 1 Brass for transport of Sand to sand depot from there to the various dealer sites located outside Sand Spot area.

v) Raw material, marketing & transport of ore

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.

vi) Resource optimization, recycle, reuse

Production of sand will be decided by the factors like replenishable nature of sand, ecological sensitivity and various features existing in buffer zone. The decision regarding auctioning of sand will be on yearly basis and the above factors will be studied before decision is taken.

vii) Water & 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 3.6 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 labours. The vehicles used for transportation will use diesel of about 100-125 litres /day.

viii) Quantity of waste & scheme for management

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

ix) Schematic Representations

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

4. Site Analysis

i) Connectivity

Utran A.H. is a small Village in Erandol Taluka in Jalgaon District of Maharashtra State, India.

The sand spot area is connected to approach road at a distance of 444 m in West direction. Pachora Railway Station is present at a distance of 7.27km.

ii) Land Use, form & Ownership

The ultimate land use pattern for the lease area of 1.05ha. will be consisting of

1. Mining Area : 1.05ha.
2. Construction of Temporary Roads : 0.00 ha.
3. Total : 1.05ha.

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.

iii) Geology

The proposed sand spot area is the case of a riverbed which contains mixture of sand, pebbles and gravels of various sizes.

Existing land use pattern

Existing Sand spot is a riverbed having 2.5- 3meter of sand.

Social-Economic Environment

Critically analysing 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:

A. The mining operations will provide direct & indirect employment village people.
B. The villages and their inhabitants & domestic animals will not be disturbed due to mining as quarry is far from their settlements.
C. Local work force will be given first preference for employment.

D. Mining activities will benefit the local people due to provision of more infrastructural facilities (developments of approach routes within the village area).

Planning brief:

The proposed project is opencast manual sand mining activity.

Supply demand ratio:

Information required on demand and supply of district (2022-23)			
S.No.	**Name of District**	**Total sand Demand of District in Brass**	**Total Sand Available of district in Brass**
1	Jalgaon	191380	104531

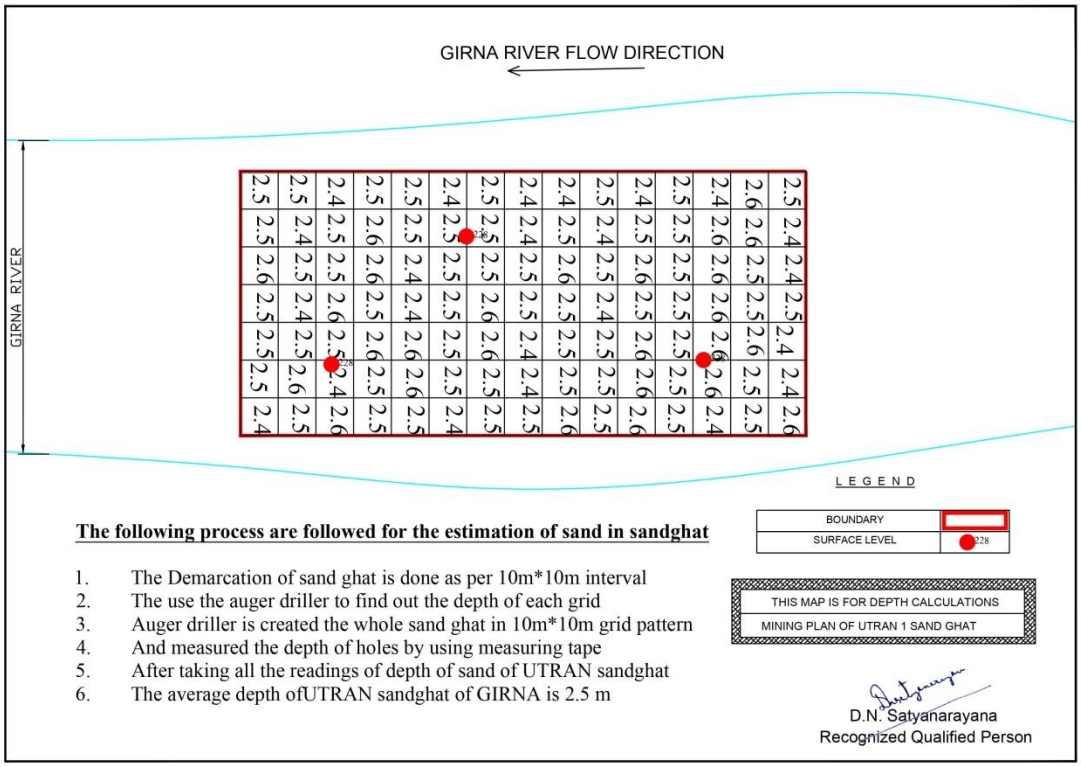
Replenishment:

- 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.

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.



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Conclusion:

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

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.
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- 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
- 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.

Compliance of earlier Environmental Clearance

- ❖ Utran A.H has earlier Environment clearance in the year 2020-2021. But the sand ghat did not get response in E-Tender and E-Auction process, therefore environmental compliance were not done.

7. 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.

8. R&R Plan

R&R is not involved.

9. Project schedule

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

10. Analysis of Proposal

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

1. It is proposed for opencast manual river sand mining.
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.

11. Costing

Costing parameters will be decided by the District Authorities.

12. Compliance to Environment Clearance

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

13. Any Other Information:

Stringent stipulations have been laid out while issuing EC. This includes regular monitoring of environmental parameters and carrying out various mitigates measures to protect the environment.

These things will be religiously followed and its report will be periodically 9) Virgin lease area for Sand Mine & Other Uses 3.11 0.000 10) Road - - 11) Railway - - 12) Tailing Pond - - 13) Effluent Treatment Plant - - 14) Mineral separation plant - - 15) Township Area - - 16) Others to specify - - 17) Ownership Government River Government River Total 3.11 submitted to the concerned authority.

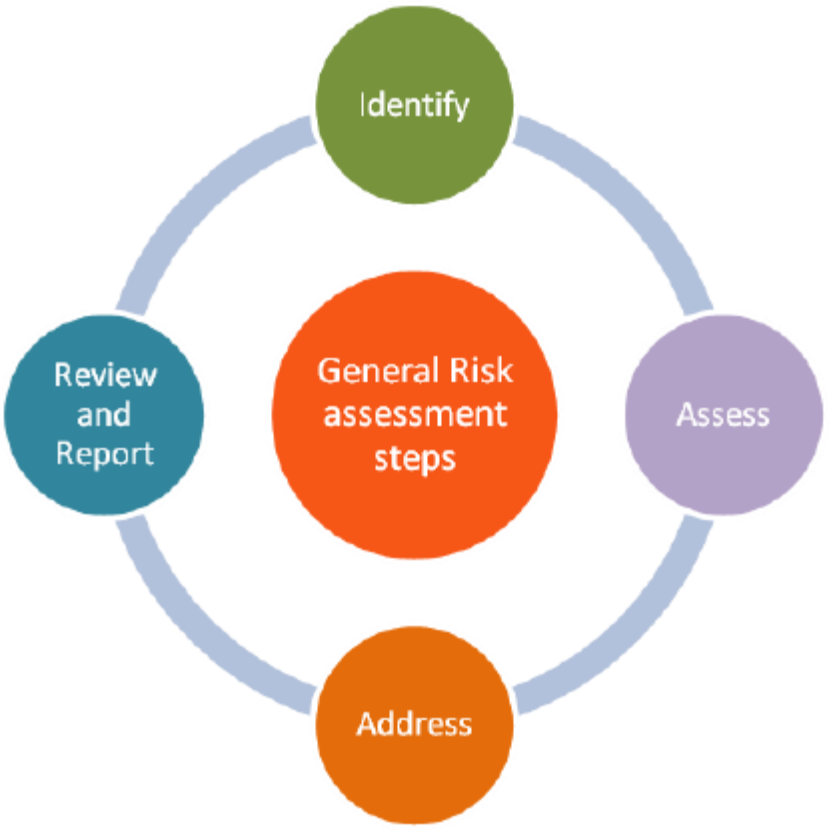
All Notices, Letters received from Government and all communication with Government (Court, NGT, DGMS, Directorate of Geology and Mining, District Mining Officer, Collector, Tehsildar, Grampanchayat, Talathi, Pollution Control Board, Forest department, Environment department, Irrigation department, Public Works Departments, Controller of Explosive, Labour Commissioner, Sale tax etc.) regarding Mine Lease and Mining will be strictly followed by Mine Owner. Mine Owner must follow all provisions of 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, the Environment (Protection) Act 1986 and Rules made there under, the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Hazardous Wastes (Management and Handling) Rules 1989, the Wildlife (Protection) Act 1972, the Forest Conservation Act-1980, the Forest Conservation Rule-2003, the Mineral Conservation and Development Rule-1988, the Mineral Concession Rules-1960, the Mines and Minerals (Development and Regulation) Act-1957, the Mines Act, the Mines Rule, the Mines Regulations, the public Liability Insurance Act 1991 and its amendments, Orders and Bye Laws made there under and any laws or guidelines that may be applicable to mine / area from time to time whether made by Central or State Government or any other authority. Wherever specific permissions are required, the applicant will approach the Directorate General of Mines Safety, Indian Bureau of Mines and Directorate of Geology and Mining. Mine Owner should obtain relevant clearances as per Environment Protection Act-1986 and EIA notification dated 21.05.1994 and 04.09.2006.

Risk Assessment for Utran A.H. 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 UTRAN A.H. 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 UTRAN A.H. 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**
Water inundation	The mining activities during rainy days or just after heavy rain may have the higher risk of inundation of workers.
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 equipment's. 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.

- No mining activities during rainy days or just after heavy rain.
- 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