

**EXECUTIVE SUMMARY OF SAND  
GHAT MINING**

**FOR NIRGUDE / BELSAR, PIMPARI KAVAL AND OTUR**

**TALUKA: JUNNAR, DISTRICT: PUNE**

**PUBLIC HEARING ON**

**MAY 13, 2021, TIME: 03.00 PM**

**AT**

**TAHASIL KARYALAYA, JUNNAR**

**TAL: JUNNAR, PUNE**

## **A) INTRODUCTION**

Sand is an essential constituent of infrastructural development projects like road, dam, bridges, building and houses. The demand for sand/gravel is ever growing with the infrastructure sector in the country. The requirement for the mineral is always high in the cities and towns. Therefore, there is always good demand of the mineral sand during construction activities in the domestic market. Due to vast development under the way in and around the Pune because of various upcoming industries in Maharashtra Industrial Development Corporation and also for local use for construction of houses and other infrastructure facilities. Sand mining is required to reduce the gap between demand and supply of building material. It also enhances employment opportunities and economic growth in the region. Besides the mining activity, it will also benefit the district / state for the revenue generation. The mining activities are required to be undertaken to keep the natural balance of ecosystem to commensurate with replenishment of sand in the River basin. Apart from these benefits, these five proposed projects will generate direct and indirect employment opportunities for youth from the nearby areas.

As mentioned above, Sand quarrying activities are very much essential for making available of required material for development of the area with respect to construction activities as availability of sand is becoming scarce day by day due to stringent rules and regulation of the environment. Most of the developmental projects require Sand aggregate for the construction activities including Industrial Plant or Buildings / Towers. Apart from these requirements, quarried material is being used on a large scale for construction of Roads, Highways, Airways, Railway Tracks, and Dams. All these developmental activities cannot be implemented without availability of quarried material; hence this proposed project is very much essential to fulfil the requirement as well as for the overall growth in economy of the area, region and the country. All these infrastructural projects play the vital role in the development of economy of the region and hence the Nation. Recently, the announcement made by our Hon'ble Prime Minister with respect to home for all by 2020, also added in the requirement of this material and hence the quarry. In view of this, there will be constant

growth in the requirement of this material, and therefore, such type of projects becomes essential for the overall growth.

## **B) NEED OF PROJECTS**

As the infrastructural developmental activities are growing day by day due to increased population and industrial growth, there is always demand for the Sand material for various uses in and around the area of project site. There is lot of demand for the material for construction of roads, Railways, housing and in industrial area. Hence, there will be good demand from the local market. If the quarries are not working properly and unable to give desired output, there will be stunted growth which will directly affect the local, regional and national economy. Therefore, to fulfil the routine and increasing requirement / demand of material, a greater number of quarries are required to be operated efficiently and effectively to fulfil the demand of the required material of the construction activities in and around the Ambegaon and Pune district.

These sand mining projects are expected to meet the demand supply gap of the area for different uses in the domestic market. The demand for the material will be on increasing scale because of population growth and to meet their demand for housing and other infrastructural facilities. Similarly, government projects need the material on delivery basis at the work site. Apart from fulfilling the requirement of material, this project will add into the income of the local people and thereby will help in increasing the standard of living and livelihood. The proposed projects are in the possession of various permissions from statutory authorities including mining plan (EMP). The project proponent also undertakes all the responsibilities to safeguard the environment and personal health of the workers would be working on the site in the future.

Initially, mining of minor minerals with the area of less than 5 Ha was not covered under the EC as per the EIA notification, 2006. However, due to various initiatives by the Government of India and NGT order from time to time to protect the environment and health of the workers as well as of public, all the mining activities involving minor minerals irrespective of area, now need to secure prior Environmental Clearance from the State Authorities (SEAC/SEIAA). To make the process of mining environment friendly, government has

published notification on 15<sup>th</sup> January 2016 with respect to minor minerals including Sand quarry and categorized them into B2 Category project. And, made it mandatory to all these B2 category projects to secure prior Environment Clearance from the State Environment Impact Assessment Authority (SEIAA) before start of mining activity at the site.

### 1. PROJECT DETAILS

Looking into the importance of Sand mining, the Collectorate Office has decided to auction following Sand Ghats to the interested Vendors / parties. The list of Sand Ghats along with River, area in Hactor, Gat numbers, name of Village / Town and Taluka is given below in the Table I for ready reference / information.

**Table I: list of Sand Ghats with area and location**

| Sr. No. | Name of Sand Ghat / Village                        | River   | Area in Ha. | Gat / Survey No.  | Length / Width / Depth (m)                    | Quantity in Brass |
|---------|--|---------|-------------|---|---|-------------------|
| 1       | Nirgude & Belsar (Block 1 & 2) Taluka Junnar, Pune | Mina    | 1.70        | Nirgude: 29, 82, 181, 179, 176, 178, 174, 175, 17, 31, 72, 170<br>Belsar: 41, 42, 43, 40, 4, 2, 3, 403, 98, 409 | B1: 175 / 57.15/ 0.50<br>B2: 165/42.5/ 0.50   | 3003.53           |
| 2       | Pimpari Kaval Block 1-3, Junnar, Pune              | Mandavi | 1.85        | 174, 175, 212, 215  | B: 183/34/1<br>B2: 183/34/1<br>B3: 180/33.5/1 | 6537.00           |
| 3       | Otur Block 02 Junnar, Pune                         | Mandavi | 3.00        | 880, 882, 884, 886, 865, 879  | 666.66/45/0.3                                 | 3180.21           |
| 4       | Otur Block 03                                      | Mandavi | 1.30        | 870, 872  | 260 / 50/ 0.25                                | 1145.41           |

The proposed Sand blocks location identified over an extent of **1.70, 1.85, 3.00 and 1.30 Ha** in a River Mina and Mandavi near Nirgude / Belsar, Pimpari Kaval Otur block 02 and block 03 respectively in the Junnar Taluka of Pune district. The details of individual sand Ghats along with the quantity to be excavated is given in **Table I** above for a period of one year. The proposed Quarrying plan is Prepared under MOEF & CC Notification S O 141(E) and Sustainable Sand Management Guidelines 2016 and Monitoring Guidelines for Sand Mining 2020. Based on the results of Geological investigations, factors like Topography,

Geomorphology, Strike & Dip & other structural features which have bearing on the assessment Sand Ghats and their quantities with location have formed the basis for preparation of this Quarrying.

### **Employment Generation**

There will be scope for direct employment of skilled and semiskilled persons from the local areas and it will help to uplift the standard of living of locals and downtrodden families living in the nearby areas. The details of total manpower requirement are given below:

| <b>Sr. No.</b> | <b>Designation</b>              | <b>Number</b> |
|----------------|---------------------------------|---------------|
| <b>1</b>       | <b>Quarry Manager</b>           | <b>04</b>     |
| <b>2</b>       | <b>Supervisory Staff/ Clerk</b> | <b>08</b>     |
| <b>3</b>       | <b>Skilled workers</b>          | <b>14</b>     |
| <b>4</b>       | <b>Un-Skilled Workers</b>       | <b>16</b>     |
| <b>Total</b>   |                                 | <b>42</b>     |

Apart from above, there will be requirement of Trucks and Tractor with Drivers and Cleaners to take care of different activities. And, also more numbers of workers will be required to be engaged in the construction activities of buildings, roads, dams etc.

### **Geology:**

Geologically the sand in this area is deposited by Mina and Mandavi River and it is derived from the weathering of stone (Basalt) rock which is broken down in to the pieces and also worn during erosion / colliding on each other

### **Topography**

The Physiography of the area is a part of flat undulated sand bearing terrain. On western side the height is little more and on Eastern side comparatively less. The height of the dunes existing in the area varies from 0 to 0.5 m from the ground level as seen in the existing area at northern side of the River outside the proposed area. Except this the physiography of the

area is uniform. The lowest level observed in the area is about 596 m and maximum level is about 721 m.

## **2. PROPOSED MINING METHOD**

The proposed Sand Quarrying activity will be Starting from Top to Downstream side of the River. The area where significant Quantity water present Quarrying activity will be avoided. The Quarrying work shall be carried out 0.5 m deep. The Quarry face will be inclined towards the periphery for safety. Water shall be Sprinkled in Sand stackyard area. Transportation of sand will be with the help of Tractor and Trucks. During transportation, water will be sprinkled on haul and transport road for the suppression of dust. The extraction and loading of mineral into the Tractors shall be carried out with manual excavation. We have proposed to Quarry using open-cast manual method. The benches will be kept at 0.3 m height, The Road gradient of 1 in 16 will be maintained as per MMR 1961. The excavated Sand will be shifted to stackyard. As per the requirements, it will be Loaded manually into the Tippers. During Quarrying plan, it is proposed to work along the sections, the lowest level observed in the area is about 596 m and maximum level is about 721 m. The General working hours will be from 8 am to 5 pm. It will consist of following steps:

1. Removal of Top portion: No top portion is required to be remove
2. Quarrying of Sand
3. Removal of Mined ROM Will be stacked 100 m away from Quarrying operations / site

### **4.1 Opencast Working**

Each cycle of operation consists of removal of Pebbles, followed by extraction of the exposed Sand subject to the following conditions strictly complied with Quarrying operations and conducted from Top to Bottom Level.

The transportation of Sand from Stackyard to different places of requirements, shall be carried out by using Trucks and Tippers via road. During transportation, proper care will be taken to avoid the spillage on the roads and also avoid dusting. Tarpaulins will be used during transportation. To avoid the accident during transportation of sand to different places, Trucks

or Tippers used will be checked for readiness / fitness certificate of RTO. Contractor will be asked to follow rules and regulation of Vehicle Acts to avoid the accident and also to fill the Trucks to which it has been certified for the load capacity. Driver will be instructed to avoid the busy / public roads.

# **ENVIRONMENT MANAGEMENT PLAN**

**For**

**SAND GHATS OF MINA AND MANDAVI  
RIVER, TALUKA JUNNAR, PUNE**



## 1. BASELINE INFORMATION

- All the FOUR Lease areas are roughly Polygon, half circular, curved in shape
- Average annual rainfall in the area ranges from 1100 mm to 1200 mm.
- The mean daily and the mean daily minimum temperature is about 12°C and maximum temperature is about 39°C.
- The average Relative Humidity in the mine lease area is 88%

### 1.1 IDENTIFICATION OF ASPECT AND IMPACT

| Sr. No. | Aspect                      | Impacts                 |
|---------|-----------------------------|-------------------------|
| 1       | Site Cleaning               | Air pollution           |
| 2       | Sizing / Sorting / Stacking | Air and Noise pollution |
| 3       | Loading / Unloading         | Air and Noise pollution |
| 4       | Transportation              | Air and Noise pollution |

### 1.2 AIR ENVIRONEMNT

The proposed mining activity would result in the increase of Suspended particulate matter SPM concentrations due to fugitive dust. Dust would be generated during handling and transportation of sand by road. Frequent water sprinkling in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to transportation.

### 1.3 NOISE ENVIRONEMNT

As the mining activity is of manual in nature, there is no much generation of noise at the site. Noise generation will be mainly from the Trucks and Tippers during loading / unloading and transportation activities. However, it will be of short duration. The owners of Trucks / Tippers will be asked to produce test / fitness certificate of Vehicles during transportation of the sand to avoid the generation of noise. Apart from the certificate, periodical maintenance of vehicles will be mandatory to reduce the fugitive noise generation.

#### **1.4 WATER ENVIRONMENT**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the benches of sand to be excavated will be of 0.3 m height. It is observed from the dug well in the adjacent area and from the nearby villages that the ground water table varies based on seasonal changes. As the proposed mining activities are only in the river bed / river course and 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 ground water / water due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing 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.

The use of Bio toilets for employees will generate small quantity of domestic waste which will be treated in the Digester tank attached to the Bio toilets. The treated water can be used for gardening purpose on land and the sludge can be used as manure if any.

#### **1.5 LAND ENVIRONMENT**

Land is part of the river terrain with sand exposed in the major portion. Hardly any herbs/ shrubs are seen growing on the river bank. Area is not specifically used for any purpose.

#### **1.6 BIOLOGICAL ENVIRONMENT**

The lease areas to be covered for mining have no vegetation of any kind. Few trees are noticed near road side and area on the river bank. The tree species are Imli, Avala, (Tamarind), Babul etc. The proposed project will only extract the sand from the river quarry.

**Flora:** The areas near all five locations are 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 is seen in this area.

1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5 km. 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.

## **2. ENVIRONMENTAL MONITORING PROGRAMME**

Environmental monitoring program is specially designed to monitor the environment quality before and after start of the project. In order to maintain the environmental quality within the standards, baseline monitoring survey is undertaken and most of the parameters are found to be within the National Ambient Air Quality standard

### **2.1 ENVIRONMENT MANAGEMENT CELL**

A separate Environment Agency will be awarded the work of monitoring of Air, Water, Noise to ensure the control of pollution due to various activities identified above. The monitoring and analysis of environmental parameters will be done as per the requirement to compare the concentration of various parameters with the baseline data.

## **3 MITIGATION MEASURES**

### **3.1 CLEANING**

- The activities related to mining of sand and its transportation leads to LITTLE dust formation and it will be reduced by spraying water

### **3.2 WATER POLLUTION CONTROL**

As mentioned above, mining will be carried out manually and there will not be any generation of effluent or waste water at the proposed site. Hence, no pollution control measures are required to be implemented for the aspect of water pollution.

**Table II: List of Environment Management Plan Details**

| Sr. No | Name of Sand Ghat / Address    | Project Cost (Crores) | EMP Cost (Lakh) | Recurring cost (Lakh) | Dust Suppression cost (lakhs) | Cost of Green Belt | Tarpaulin (lakhs) | PPE's (lakhs) | Bio Toilet (lakhs) | Cost of Approach Road repair (lakhs) | Approach Road Length (m) | No. of Trees to be Planted | CER Cost (Lakh) |
|--------|--------------------------------|-----------------------|-----------------|-----------------------|-------------------------------|--------------------|-------------------|---------------|--------------------|--------------------------------------|--------------------------|----------------------------|-----------------|
| 1      | Nirgude & Belsar Block 1 and 2 | 1.8162                | 6.81            | 4.43                  | 0.72                          | 3.00               | 0.05              | 0.49          | 0.50               | 2.50                                 | 250                      | 600                        | 4.00            |
| 2      | Pimpri Kaval Block 01 - 03     | 3.9529                | 6.97            | 4.68                  | 0.68                          | 2.75               | 0.05              | 0.49          | 0.50               | 2.50                                 | 250                      | 550                        | 8.00            |
| 3      | Otur Block 02                  | 1.9231                | 8.33            | 4.20                  | 0.48                          | 4.00               | 0.05              | 0.50          | 0.50               | 2.10                                 | 200                      | 800                        | 3.00            |
| 4      | Otur Block 03                  | 0.6944                | 7.43            | 4.95                  | 0.44                          | 2.75               | 0.05              | 0.49          | 0.50               | 3.20                                 | 300                      | 550                        | 2.50            |

**Cost of Sand per Brass = Rs. 6047/-**

### **3.3 NOISE POLLUTION CONTROL**

- The advance version of the vehicle will be used in transportation and due care will be taken to minimize generation of noise
- Scheduled and preventive maintenance of all vehicles will be carried out periodically to keep the Vehicles in good working condition, so that noise generation can be reduced and controlled. This will help in reducing overall noise generation
- Earplugs will be provided to all Driver if required
- Periodical monitoring of noise level of vehicles in the mining area will be carried out with the help of noise level meter
- Training at regular intervals for Driver will be arranged for safe transportation of mined out material

### **3.4 GREEN BELT DEVELOPMENT**

- Afforestation will be carried out to increase the green cover and to create harmony with nature which will also adds in suppressing the dust emission to the environment
- Tree plantation will be undertaken on the approach road and on the River Bank
- Green belts surrounding the river bank and along the approach roads shall be developed with tree species having broad leaves. Spacing in between the tree saplings shall be used for development other sampling if needed
- Mostly local varieties of plants are proposed to be planted to improve the soil quality with humus and carbon

### **3.5 LAND RECLAMATION**

The total mining lease area of four locations is around 7.85 Ha. As mentioned above in the Table, river bank and individual approach roads will be converted into green belt with two row Tree plantations. In the monsoon and post mining period, land will be left untouched for the natural replenishment of the sand. The Tree plantation will create the positive impact on environment and enhances the aesthetic / beautification of the nearby area which will also contribute in protection of the environment.

### **3.6 SOLID WASTE MANAGEMENT**

There will not be any solid waste generation from the sand mining and hence no solid waste generation

### **3.7 RECLAMATION / BACKFILLING**

- 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

### **3.8 HAZARD IDENTIFICATION & RISK ASSESSMENT**

Risk assessment of the proposed activity is only during the transportation of Sand during transportation. It is also some time from the loading and unloading operation carried out by the workers manually. To avoid the risk of cut injury required PPEs will be provided and maintained. If required, necessary training will be imparted to the workers in respective areas of work. Hazard identification and risk assessment is a continual process. During mining operation, following could be the main hazards:

- Health Hazard (Noise, Air pollution)
- Accident at site / Road Accident
- Minor Fire due to leakage / storage of diesel
- Natural hazards if any

#### **Control Measures**

- Restrict access to the area to all persons except those necessary for the operation
- Ensure that the person in-charge of the mining is competent to carry out the mining operation
- Other control measures for noise and dust include training to labors and

Drivers for safe work practices and driving

- Vehicle will be equipped with CO2 Fire Extinguisher if required

### **3.9 EMERGENCY PREPAREDNESS PLAN**

Emergency Preparedness Plan will be prepared for the transportation emergency as per the requirement. And, all Drivers will be trained accordingly to avoid any kind of emergency on road during transportation of material.

### **3.10 SOCIOECONOMIC ENVIRONMENT**

There are no houses in and around lease area. The nearest permanent settlement is at a distance of 0.4 to 0.5 km from the quarry. The project management will give preference to local people for the recruitment during mining activities. Therefore, it is anticipated that these type of activities in above mentioned Towns in the Junnar Taluka will definitely add in improving the socio-economic status of the people and area.

### **3.11 OCCUPATIONAL HEALTH & SAFETY**

The workers will be given Personal Protective equipment (PPEs) like Safety shoes, Goggles, Gloves etc. to avoid the impacts of flying dust, impact on finger or feet. Also, avoid the cut injury on hands or feet.

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# **EXECUTIVE SUMMARY OF SAND GHAT MINING**

**FOR PARGAON TARFE AVASARI (Bk), LAKHANGAON,  
DEVGAON, KATHAPUR (Bk), CHINCHODI  
TALUKA: AMBEGAON, DISTRICT: PUNE**

**PUBLIC HEARING ON  
MAY 13, 2021, TIME: 11.00 AM**

**AT  
TAHASIL KARYALAYA, AMBEGAON (GHODEGAON),  
TAL: AMBEGAON, PUNE**



## **1. INTRODUCTION**

Sand is an essential constituent of infrastructural development projects like road, dam, bridges, building and houses. The demand for sand/gravel is ever growing with the infrastructure sector in the country. The requirement for the mineral is always high in the cities and towns. Therefore, there is always good demand of the mineral sand during construction activities in the domestic market. Due to vast development under the way in and around the Pune because of various upcoming industries in Maharashtra Industrial Development Corporation and also for local use for construction of houses and other infrastructure facilities. Sand mining is required to reduce the gap between demand and supply of building material. It also enhances employment opportunities and economic growth in the region. Besides the mining activity, it will also benefit the district / state for the revenue generation. The mining activities are required to be undertaken to keep the natural balance of ecosystem to commensurate with replenishment of sand in the River basin. Apart from these benefits, these five proposed projects will generate direct and indirect employment opportunities for youth from the nearby areas.

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|---------|--|-------|-------------|---|--------------------------------------|-------------------|
| 1       | Paregaon Tarfe Awsari (Bk), Ambegaon, Pune | Ghod  | 2.73        | 1 to 106, 401 to 424, 828 to 725, 847 to 1001, 1301 to 1373, 1665 to 1720 | 823.8 / 21 / 0.50<br>476 / 21 / 0.50 | 4823.32           |
| 2       | Lakhangaon, Ambegaon, Pune                 |       | 2.40        | 74, 78, 66, 468, 469  | 1600 / 15 / 0.50                     | 4242.28           |
| 3       | Devgaon, Ambegaon, Pune                    |       | 1.44        | 1, 2, 115, 195, 197, 200, 275, 279  | 1200 / 12 / 0.50                     | 2544.17           |
| 4       | Kathapur, Ambegaon, Pune                   |       | 1.13        | 701, 702, 703, 653, 739, 740, 1, 12, 13, 14, 15, 17, 26, 29               | 750 / 15.066 / 0.50                  | 1996.47           |
| 5       | Chichodi, Ambegaon, Pune                   |       | 1.68        | 544, 545, 546, 550, 551, 565  | 750 / 22.4 / 0.30                    | 1780.92           |

The proposed Sand blocks location identified over an extent of **2.73, 2.40, 1.44, 1.13 and 1.68 Ha** in a Ghod River Bed near Paregaon Tarfe Awasari (Bk), Lakhangaon, Devgaon, Kathapur and Chinchodi respectively in the Ambegaon Taluka of Pune district. The details of individual sand Ghats along with the quantity to be excavated is given in **Table I** above for a period of one year. The proposed Quarrying plan is Prepared under MOEF & CC Notification S O 141(E) and Sustainable Sand Management Guidelines 2016 and Monitoring Guidelines for Sand Mining 2020. Based on the results of Geological investigations, factors like Topography, Geomorphology, Strike & Dip & other structural features which have bearing

on the assessment Sand Ghats and their quantities with location have formed the basis for preparation of this Quarrying.

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| <b>4</b>       | <b>Un-Skilled Workers</b>       | <b>20</b>     |
|                | <b>Total</b>                    | <b>50</b>     |

Apart from above, there will be requirement of Trucks and Tractor with Drivers and Cleaners to take care of different activities. And, also more numbers of workers will be required to be engaged in the construction activities of buildings, roads, dams etc.

### **Geology:**

Geologically the sand in this area is deposited by Ghod River and it is derived from the weathering of stone (Basalt) rock which is broken down in to the pieces and also worn during erosion / colliding on each other

### **Total Reserves:**

### **Topography**

The Physiography of the area is a part of flat undulated sand bearing terrain. On western side the height is little more and on Eastern side comparatively less. The height of the dunes existing in the area varies from 0 to 0.5 m from the ground level as seen in the existing area at northern side of Ghod River outside the proposed area. Except this the physiography of the area is uniform. The lowest level observed in the area is about 628 m and maximum level is about 630 m.

#### **4. PROPOSED MINING METHOD**

The proposed Sand Quarrying activity will be Starting from Top to Downstream side of the River. The area where significant Quantity water present Quarrying activity will be avoided. The Quarrying work shall be carried out 0.5 m deep. The Quarry face will be inclined towards the periphery for safety. Water shall be Sprinkled in Sand stackyard area. Transportation of sand will be with the help of Tractor and Trucks. During transportation, water will be sprinkled on haul and transport road for the suppression of dust. The extraction and loading of mineral into the Tractors shall be carried out with manual excavation. We have proposed to Quarry using open-cast manual method. The benches will be kept at 0.3 m height, The Road gradient of 1 in 16 will be maintained as per MMR 1961. The excavated Sand will be shifted to stackyard. As per the requirements, it will be Loaded manually into the Tippers. During Quarrying plan, it is proposed to work along the sections, the lowest level observed in the area is about 628 m and maximum level is about 630 m. The General working hours will be from 8 am to 5 pm. It will consist of following steps:

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3. Removal of Mined ROM Will be stacked 100 m away from Quarrying operations / site

##### **4.1 Opencast Working**

Each cycle of operation consists of removal of Pebbles, followed by extraction of the exposed Sand subject to the following conditions strictly complied with Quarrying operations and conducted from Top to Bottom Level.

The transportation of Sand from Stackyard to different places of requirements, shall be carried out by using Trucks and Tippers via road. During transportation, proper care will be taken to avoid the spillage on the roads and also avoid dusting. Tarpaulins will be used during transportation. To avoid the accident during transportation of sand to different places, Trucks or Tippers used will be checked for readiness / fitness certificate of RTO. Contractor will be asked to follow rules and regulation of Vehicle Acts to avoid the accident and also to fill the Trucks to which it has been certified for the load capacity. Driver will be instructed to avoid the busy / public roads.

# **ENVIRONMENT MANAGEMENT PLAN**

**For**

**SAND GHATS OF GHOD RIVER**

## 1. BASELINE INFORMATION

- All the five Lease areas are roughly Polygon, half circular, curved in shape
- Average annual rainfall in the area ranges from 1100 mm to 1200 mm.
- The mean daily and the mean daily minimum temperature is about 12°C and maximum temperature is about 39°C.
- The average Relative Humidity in the mine lease area is 87%

### 1.1 IDENTIFICATION OF ASPECT AND IMPACT

| Sr. No. | Aspect                      | Impacts                 |
|---------|-----------------------------|-------------------------|
| 1       | Site Cleaning               | Air pollution           |
| 2       | Sizing / Sorting / Stacking | Air and Noise pollution |
| 3       | Loading / Unloading         | Air and Noise pollution |
| 4       | Transportation              | Air and Noise pollution |

### 1.2 AIR ENVIRONEMNT

The proposed mining activity would result in the increase of Suspended particulate matter SPM concentrations due to fugitive dust. Dust would be generated during handling and transportation of sand by road. Frequent water sprinkling in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to transportation.

### 1.3 NOISE ENVIRONEMNT

As the mining activity is of manual in nature, there is no much generation of noise at the site. Noise generation will be mainly from the Trucks and Tippers during loading / unloading and transportation activities. However, it will be of short duration. The owners of Trucks / Tippers will be asked to produce test / fitness certificate of Vehicles during transportation of the sand to avoid the generation of noise. Apart from the certificate, periodical maintenance of vehicles will be mandatory to reduce the fugitive noise generation.

#### **1.4 WATER ENVIRONMENT**

There will not be any waste water discharges to water bodies from the mining operations. As observed in the River, the benches of sand to be excavated will be of 0.3 m height. It is observed from the dug well in the adjacent area and from the nearby villages that the ground water table varies based on seasonal changes. As the proposed mining activities are only in the river bed / river course and 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 ground water / water due to the proposed sand mining is not anticipated.

1. Precautionary measures will be initiated for closing 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.

The use of Bio toilets for employees will generate small quantity of domestic waste which will be treated in the Digester tank attached to the Bio toilets. The treated water can be used for gardening purpose on land and the sludge can be used as manure if any.

#### **1.5 LAND ENVIRONMENT**

Land is part of the river terrain with sand exposed in the major portion. Hardly any herbs/ shrubs are grown on the river bank. Area is not specifically used for any purpose.

#### **1.6 BIOLOGICAL ENVIRONMENT**

The lease areas to be covered for mining have no vegetation of any kind. Few trees are noticed near road side and area on the river bank. The tree species are Imli (Tamarind), Babul etc. The proposed project will only extract the sand from the river quarry.

**Flora:** The areas near all five locations are 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 is seen in this area.



1. There will be no significant impact of the river quarry mining project on the biological diversity found in the 5 km. 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.

## **2. ENVIRONMENTAL MONITORING PROGRAMME**

Environmental monitoring program is specially designed to monitor the environment quality before and after start of the project. In order to maintain the environmental quality within the standards, baseline monitoring survey is undertaken and most of the parameters are found to be within the National Ambient Air Quality standard

### **2.1 ENVIRONMENT MANAGEMENT CELL**

A separate Environment Agency will be awarded the work of monitoring of Air, Water, Noise to ensure the control of pollution due to various activities identified above. The monitoring and analysis of environmental parameters will be done as per the requirement to compare the concentration of various parameters with the baseline data.

## **3 MITIGATION MEASURES**

### **3.1 CLEANING**

- The activities related to mining of sand and its transportation leads to LITTLE dust formation and it will be reduced by spraying water

### **3.2 WATER POLLUTION CONTROL**

As mentioned above, mining will be carried out manually and there will not be any generation of effluent or waste water. Hence, no pollution control measures are required to be implemented

### **3.3 NOISE POLLUTION CONTROL**

- The advance version of the vehicle will be used in transportation and due care will be taken to minimize generation of noise
- Scheduled and preventive maintenance of all vehicles will be carried out periodically to keep the Vehicles in good working condition, so that noise generation can be reduced and controlled. This will help in reducing overall noise generation
- Earplugs will be provided to all Driver if required
- Periodical monitoring of noise level of vehicles in the mining area will be carried out with the help of noise level meter
- Training at regular intervals for Driver will be arranged for safe transportation of mined out material

### **3.4 GREEN BELT DEVELOPMENT**

- Afforestation will be carried out to increase the green cover and to create harmony with nature which will also adds in suppressing the dust emission to the environment
- Tree plantation will be undertaken on the approach road and on the River Bank
- Green belts surrounding the river bank and along the approach roads shall be developed with tree species having broad leaves. Spacing in between the tree saplings shall be used for development other sampling if needed
- Mostly local varieties of plants are proposed to be planted to improve the soil quality with humus and carbon

### **3.5 LAND RECLAMATION**

The total mining lease area of five location is around 9.38 Ha. As mentioned above in the Table, river bank and individual approach roads will be converted into green belt with two row Tree plantations. In the monsoon and post mining period, land will be left untouched for the natural replenishment of the sand. The Tree plantation will create the positive impact on environment and enhances the aesthetic / beautification of the nearby area which will also contribute in protection of the environment.

Table II: List of Environment Management Plan Details

| Sr. No | Name of Sand Ghat / Address                     | Project Cost in Crores | EMP Cost (Lakh) | Recurring cost (Lakh) | Dust Suppression cost (lakhs) | Cost of Green Belt | Tarpaulin (lakhs) | PPE's (lakhs) | Bio Toilet (lakhs) | Cost of Approach Road repair (lakhs) | Approach Road Length (m) | No. of Trees to be Planted | CER Cost (Lakh) |
|--------|---|------------------------|-----------------|-----------------------|-------------------------------|--------------------|-------------------|---------------|--------------------|--------------------------------------|--------------------------|----------------------------|-----------------|
| 1      | Pargaon T<br>Awasari (BK),<br>Ambegaon,<br>Pune | 2.9166                 | 6.04            | 3.84                  | 0.72                          | 3.0                | 0.05              | 0.48          | 0.50               | 2.0                                  | 200                      | 600                        | 5.90            |
| 2      | Lakhangaon                                      | 2.5640                 | 5.85            | 3.81                  | 0.72                          | 2.1                | 0.05              | 0.48          | 0.50               | 2.8                                  | 250                      | 420                        | 5.25            |
| 3      | Devgaon   | 1.5384                 | 6.26            | 4.55                  | 0.65                          | 2.58               | 0.05              | 0.48          | 0.50               | 2.0                                  | 200                      | 515                        | 3.20            |
| 4      | Kathapur  | 1.2072                 | 6.63            | 4.6                   | 0.60                          | 2.65               | 0.05              | 0.48          | 0.50               | 2.5                                  | 230                      | 510                        | 3.0             |
| 5      | Chinchodi                                       | 1.0769                 | 6.26            | 5.08                  | 0.48                          | 2.75               | 0.05              | 0.48          | 0.50               | 2.00                                 | 200                      | 550                        | 2.50            |

Cost of Sand per Brass = Rs. 6047/-

### **3.6 SOLID WASTE MANAGEMENT**

There will not be any solid waste generation from the sand mining and hence no solid waste generation

### **3.7 RECLAMATION / BACKFILLING**

- 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

### **3.8 HAZARD IDENTIFICATION & RISK ASSESSMENT**

Risk assessment of the proposed activity is only during the transportation of Sand during transportation. It is also some time from the loading and unloading operation carried out by the workers manually. To avoid the risk of cut injury required PPEs will be provided and maintained. If required, necessary training will be imparted to the workers in respective areas of work. Hazard identification and risk assessment is a continual process. During mining operation, following could be the main hazards:

- Health Hazard (Noise, Air pollution)
- Accident at site / Road Accident
- Minor Fire due to leakage / storage of diesel
- Natural hazards if any

#### **Control Measures**

- Restrict access to the area to all persons except those necessary for the operation
- Ensure that the person in-charge of the mining is competent to carry out the mining operation
- Other control measures for noise and dust include training to labors and Drivers for safe work practices and driving
- Vehicle will be equipped with CO2 Fire Extinguisher if required



### **3.9 EMERGENCY PREPAREDNESS PLAN**

Emergency Preparedness Plan will be prepared for the transportation emergency as per the requirement. And, all Drivers will be trained accordingly to avoid any kind of emergency on road during transportation of material.

### **3.10 SOCIOECONOMIC ENVIRONMENT**

There are no houses in and around lease area. The nearest settlement is at a distance of 0.3 to 0.5 km from the quarry. The project management will give preference to local people for the recruitment during mining activities. Therefore, it is anticipated that these type of activities in above mentioned Towns in the Ambegaon Taluka will definitely add in improving the socio-economic status of the people and area.

### **3.11 OCCUPATIONAL HEALTH & SAFETY**

The workers will be given Personal Protective equipment (PPEs) like Safety shoes, Goggles, Gloves etc. to avoid the impacts of flying dust, impact on finger or feet. Also, avoid the cut injury on hands or feet.

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