

# SUMMARY EIA

(As Per EIA Notification No. S.O. 1533(E) dated 14<sup>th</sup> September 2006 & amendments thereof)

of

## Marki Mangli IV Coal Mine

Villages Hirapur, Mangli & Bhendala, Tehsil – Jhari Jamni,

District – Yavatmal, State – Maharashtra

Mining lease area: 201.69 Ha (Non-Forest)

Proposed Production: 0.2 MTPA Coal

(Project Category 'A') (Greenfield Project)

Submission for

## Public Hearing

to

## Maharashtra Pollution Control Board

Project Proponent

### M/s Sobhagya Mercantile Limited (SML)

B-61, Floor 6, Plot No.210, B-Wing, Mittal Tower,  
Free Press Journal Marg, Nariman Point, Mumbai – 400021, Maharashtra



EIA Consultant

### Srushti Seva Pvt. Ltd.

NABET Accredited

EIA Consultant Organization

Certificate No. NABET/EIA/25-28/RA 0423 Valid till 12/05/2028



OCTOBER 2025

## EXECUTIVE SUMMARY

### 1.0 INTRODUCTION:

**M/s Sobhagya Mercantile Limited(SML)** ,B-61, Floor 6, Plot No.210, B-Wing, Mittal Tower, Free Press Journal Marg, Nariman Point, Mumbai – 400021, Maharashtra emerged as Successful Bidder in the auction conducted by the Nominated Authority, Ministry of Coal(MoC), Government of India(GoI) in accordance with the provisions of clause (b) of sub-rule (2) of rule 7 and sub-rule (1) of rule 13 of the Coal Mines ( Special Provision) Rules 2014 read with the clause (b) of sub-section (3) of Section 8 of the Coal Mines (Special Provisions) Act, 2015. Subsequent to the declaration as Successful Bidder, the Nominated Authority, Ministry of Coal under Section (6) of the Coal Mines (Special Provisions) Act, 2015 issued the Vesting Order for Marki Mangli IV Coal Mine project with Order No. NA-104/25/2022-NA dated the 17<sup>th</sup> January 2023 in favour of M/s Sobhagya Mercantile Limited (SML). The copy of the Vesting Order is attached as **Annexure – 1**. The Marki Mangli IV Coal Mine project of **M/s Sobhagya Mercantile Limited (SML)** spread over areas of villages Hirapur, Mangli & Bhendala in Jhari-Jamni Tehsil of Yavatmal District in Maharashtra State covering an area of 201.69 Ha.

**M/s Sobhagya Mercantile Limited (SML)** had participated in the auction of the Mine and emerged as a “Preferred Bidder” in September 2022. Nominated Authority vide its letter dated 14th October 2022 had declared SML as successful bidder for Marki Mangli IV Coal Mine. SML has signed Coal Mine Development & Production Agreement (CMDPA) for Marki Mangli IV Coal Mine on 17th October 2022.

Marki Mangli IV Coal Block was earlier allotted by Ministry of Coal, Govt. of India on 7th February 2006 to M/s Shree Veerangana Steels Private Limited to meet the coal requirement from their existing and proposed sponge iron and power plants. Ministry of Coal has cancelled all allocated coal blocks in the year 2014 following the Hon’ble Supreme Court of India order vide judgment dated 25th August, 2014 read with its order dated 24th September, 2014 and the Central Government in pursuance of the said directions has taken immediate action to implement the said order.

SML proposed to win 0.20 MTPA of coal from the Marki Mangli IV Coal block through open cast coal mining methodology within the leasehold area. The area allocated in respect of Marki Mangli IV Coal Mine is 201.69 Hectares which consists of Private land of 168.16 Ha and Non-Forest Govt. land of 33.53 Ha. There is no Forest Land involved in the proposed Mine Lease area.

As per EIA Notification 2006 the present Project falls under 1(a) of the Schedule of EIA-2006 Notification. Further, as per MoEF&CC Notification No. S. O. 3067(E) dated 1st Dec. 2009 all the Coal Mining Projects with lease area more than 150 Ha have been classified as Category “A” Projects.

However, subsequently, MoEF&CC vide its Notification No. S.O. 1886(E) dated 20th April 2022 amended the categorization. As per the recent amendment, now the Coal Mining Project with lease area of more than 500 Ha has been classified as Category “A” Projects. The Marki Mangli –IV Coal Block had earlier obtained environmental clearance vide MoEF & CC letter No. J 11015/425/2007/IA-II (M) Dated 27.01.2011. This environmental clearance

was a composite clearance of three blocks namely Marki Mangli II, III & IV. As per the provisions of Vesting order, M/s SML had applied transfer of earlier EC. However, the same was not approved by MoEF & CC and M/s SML was directed by MoEF&CC vide their email dated 17<sup>th</sup> August 2023 to apply afresh to the State Level Committee, as the Mining Lease area being less than 500 Ha.

Considering the above, the Marki Mangli IV Coal Mine project having lease area of 201.69 Ha which falls fully within the State of Maharashtra, though falling in Category B, but due to its location, having an Interstate boundary (Maharashtra – Telangana: 2.2 Km due SW) which is within 5Km as stipulated in EIA Notification 2006; as such it attracts General Conditions (GC) and hence will be deemed as Category “A” Project from Environment angle. The Project shall be appraised by EAC (Coal Mining), Ministry of Environment, Forest & Climate Change at Central Level for grant of Environment Clearance. Accordingly, the process of securing fresh Environmental Clearance from, MoEF&CC has been initiated by M/s SML.

M/s SML entrusted the services of assessment of the environmental impacts arising due to the proposed Project to NABET Accredited EIA Consultant viz. M/s Srushti Seva Pvt. Limited (SrSPL), Nagpur to facilitate grant of Prior Environment Clearance for the Project.

Accordingly, an online application was submitted through PARIVESH Portal of MoEF&CC on 21/11/2023 for obtaining Environment Clearance initiating with grant of Terms of Reference (ToR) for carrying out the environmental Impact assessment studies for the Project. The Expert Appraisal Committee (Coal) of MoEF&CC considered the Project for grant of Terms of Reference (ToR) in their 4<sup>th</sup> Meeting held on 7-8/12/2023. The proposal was reappraised in the 9<sup>th</sup> EAC (Coal) meeting held on 20-21/03/2024 and the EAC recommended for grant of ToR. The ToR for the Project was accorded by MoEF&CC vide TOR Identification No: TO23A0101MH5576201N dated 03-06-2024. The project proponent subsequently applied for amendment in certain specific and general conditions of the TOR on 28/06/2024 and the proposal was considered in the 21<sup>st</sup> EAC (Coal) Meeting held on 20-21/02/2025. The proposal was recommended by the EAC for grant of the amendments sought and thereafter MoEF&CC issued the amendment letter vide TOR Identification No.TO24A0101MH5545095A dated 24/03/2025.

In the meantime, M/s SrSPL has completed the collection of the Base Line Environmental Data at the Project Site pertaining to various environmental components including air, noise, water, land and biological component along with parameters of human interest which may be affected due to proposed Project from October to December 2023 (Post Monsoon Season) for one season for 13 weeks.

This Draft EIA/EMP Report has been prepared in compliance of the conditions stipulated in the aforesaid ToR issued (including the amendment) by MoEF&CC and is being submitted to Maharashtra Pollution Control Board(MPCB)for conduct of Public Hearing, as per the provisions of EIA Notification 2006.

## 2.0 PROJECT DETAILS

Marki Mangli IV Coal Mine is situated in the Wardha Valley Coalfield in Yavatmal district, Maharashtra The Mine forms a part of Survey of India Toposheet No.56 I/13 (R.F.1: 50,000) bounded between the coordinates: Latitude 19° 47' 20"N & 19° 48' 32"N and Longitude 78° 47' 16"E & 78° 48' 33"E.

The mine site is located in Tahsil Jhari Jamni , District Yavatmal of Maharashtra State. The mine site is located.at a distance of 5 km from Mukutban village which is approachable by an all- weather pucca road leading to Patan from Mukutban. The nearest town is Wani situated 35 km. Wani is about 140 km SE of Nagpur by road.

Majri-Adilabad broad gauge railway line passes through the middle of the block in E-W direction. Mangli-Hirapur road crosses the block in N-S direction, Mangli- Bhendala road crosses the block in NE-SW direction and Mukutban- Patan road SH-234 crosses the block in E-W direction. Nearest Airport is Nagpur which is at a distance of 180km from the block. The nearest rail head Kayar is about 19 km from the North eastern part of the Mine.

The approved Mining Plan envisages a normative production capacity of 0.20 MTPA (with peak capacity being 0.30 MTPA) within the 201.69 Ha of Mining Lease Area. The Project has been proposed to be worked by Mechanized Opencast Mining Methodology by deploying Shovel/Dumper Combination for removal of Overburden as well as Coal. The envisaged Project Capital Cost is Rs. 102.00 Crores.

The total land requirement for the Project is 201.69 Ha, out of which Private land is 168.16 Ha and Non-Forest Govt. land is 33.53 Ha. There is no Forest land involved in the proposed mine lease area. The private land will be acquired through direct negotiations with the land owners. The Project involves shifting of hutments of Mangli village located within the Project Area.

The Project envisages a mineable reserves of 3.47 Million Tonnes and extractable reserve of 3.37 Million Tonnes of coal along with Overburden Removal of 44.00 Million Cubic meter in 19 years (excluding construction period) of mine life. The quality of coal is Grade G-8 as per approved Mining plan & Mine Closure Plan.

From the entire quantity of 44.00 Million Cum overburden, it is proposed to utilise 38.30 Mm<sup>3</sup> in internal dumping (by backfilling of de-coaled voids) and utilise 5.70 Mm<sup>3</sup> for Sand preparation by setting up of a Sand Crushing plant within the Mine lease area. A final void of only about 5.68 ha having a depth of 40 m shall remain post closure of opencast mine which will be converted into a Water Reservoir.

The Project shall provide employment to nearly 204 persons besides creating many indirect employment opportunities. The local persons shall be given preference in employment for mine as per their eligibility.

Necessary training shall be given to train the unemployed youths of the nearby villages. The indirect employment opportunities shall automatically be created with the re-opening of the Project in the region.

The Water Requirement of the Project is estimated to be 300 cum/Day. Out of this, 125 cum/Day of the water is required Dust Suppression, 115 cum/day for Green Belt, 50 cum/day for Workshop & other activities, and the balance 10 cum/Day for drinking/domestic purpose. Domestic Water will be sourced from ground water through bore wells and water for Industrial Use shall be sourced through accumulated pit water & rain/surface water, for which necessary approvals from Central Ground Water Authority (CGWA) has been obtained.

The mine will get dedicated power supply from MSTCL grid through MSPDCL supply through a 33 KV line. Power will be mainly consumed by the CHP, Pumping, and for the lighting purposes and the requirement of power is estimated to be 1.3 MW.

The mine will make an arrangement for back-up captive power in the form of two numbers of Diesel Generator set of capacity 500 KVA for illumination purposes.

The Project shall be requiring about 8362 Liters/day of diesel for meeting the fuel requirement of the Heavy Earth Moving Machineries envisaged for removal of Overburden and mining of coal.

The Project envisages use of about 2.86 Tonnes of explosives per day for removal of Overburden and Coal.

Three seasonal Nalas are flowing from the Eastern to Southern part of the Mine Lease area and will be diverted/channelised along the Eastern part of the Mine lease area to facilitate Coal Mining Operations. Another nala viz .Upasha Nala is partly flowing in the North Eastern part and is proposed and is also proposed to be diverted along the North western part of the mine lease area. The necessary NOC from Irrigation Department has been obtained. These diversions will be done after obtaining the due permissions/approvals from the concerned authorities of the Maharashtra State Government.

There are three roads viz. **SH-234 is passing through the lease area in E-W Direction, the Mangli- Hirapur road crosses the block in N-S direction & Bhendala- Mangli road also crosses the block in the NE-SW direction.** These roads are also proposed to be diverted along the lease boundary after obtaining the due permissions/approvals from the concerned authorities of the Maharashtra State Government.

- There are three electric power lines viz. An 11 KV feeder line (Mangli feeder), an 11 KV feeder line (Ardhwan feeder) and a 33 KV feeder line (Patan feeder) which crosses the central part of the block in the E-W direction. These power lines are also proposed to be diverted along the lease boundary after obtaining the due permissions/approvals from the concerned authorities of the Maharashtra State Government.

Coal produced from the mine will be transported initially by 35 T RD Dumpers to the Raw Coal receiving stockyard located in the Mine Lease Area. The coal will then be transported by road to the consumers by 30T Dump Trucks. Further the sand produced by crushing of OB will also be transported by road to the consumers by 30 T Dumpers.

### 3.0 REHABILITATION & RESETTLEMENT

The Project involves shifting of the hamlet of Mangli village located within the Project Area and the Rehabilitation & Resettlement of this hamlet is proposed to be done as per the Govt.norms.

### 4.0 BASE LINE ENVIRONMENTAL STATUS

The Base Line Environmental quality data for various components of environment viz. Ambient Air, Noise, Water, Land and Socio-Economic were generated during October 2023 to December 2023 in the Study Area covering 10 Kms around the Marki Mangli IV Opencast Coal Mine Project. Other environmental data on Flora and Fauna, Land Use Pattern, Forest

etc were also generated through field surveys and also collected from different State Government Departments.

Ambient Air Quality Monitoring was carried out at 12 Stations consisting 1 Sampling Stations within the Core Zone (Project Area) and 11 Sampling Stations in Buffer Zone (10 Kms radius around Core Zone). Parameters of twelve air pollutants viz. PM<sub>10</sub>, PM<sub>2.5</sub>, Sulphur Dioxide (SO<sub>2</sub>), Oxides of Nitrogen (NO<sub>x</sub>), Ozone (O<sub>3</sub>), Carbon Monoxide (CO) and Heavy Metals were monitored. These parameters were included for representing baseline status of ambient air quality within the Study Area.

#### Results & Discussion:

On the basis of observation, the parameter wise result of monitored parameters are discussed below compared with National Ambient Air Quality Standards.

- **Particulate Matter (PM10):** The maximum PM10 concentration covering all the air quality monitoring stations i.e. A-1 to A-12 were observed in the range of 41.80 – 63.5 µg/m<sup>3</sup>. Almost all the stations have PM10 concentrations less than 24 hours average permissible limit i.e. 100 µg/m<sup>3</sup> as prescribed by MoEF&CC for industrial, residential, rural and other area.
- **Particulate Matter (PM2.5):** The maximum PM2.5 concentration covering all the air quality monitoring stations A-1 to A-12 were observed in the range of 12.1 – 38.0 µg/m<sup>3</sup> as against the NAAQ Standards of MoEF&CC prescribed limit of 60 µg/m<sup>3</sup> for industrial, residential, rural and other areas.
- **Sulphur Dioxide (SO<sub>2</sub>):** The maximum SO<sub>2</sub> concentrations covering all sampling stations A-1 to A-12 were in the range of 10.9 – 26.1 µg/m<sup>3</sup>. All monitored stations have SO<sub>2</sub> concentrations well within the stipulated (annual 24 hours) limit of 80 µg/m<sup>3</sup> as prescribed for industrial, residential, rural and other areas under revised NAAQ Standards of MoEF & CC.
- **Oxides of Nitrogen (NO<sub>x</sub>):** The maximum NO<sub>x</sub> concentrations covering all sampling stations A-1 to A-12 were observed in the range of 14.8 -34.7 µg/m<sup>3</sup>. All monitored stations have NO<sub>x</sub> concentrations well within the stipulated (annual 24 hours) limit of 80 µg/m<sup>3</sup> as prescribed for industrial, residential, rural and other areas under NAAQ Standards of MoEF& CC.
- **Heavy Metals:** Representative samples from all sampling stations were collected and analyzed for heavy metals i.e. Lead, Arsenic & Nickel. The concentrations of heavy metals were observed **below detectable limit** at all the stations.
- The ambient air quality of Marki Mangli IV Coal Block mine area and its buffer zone showed that the concentrations of all monitored parameters were within the stipulated standards of MoEF& CC.
- The **noise Levels** in the lease buffer zone were observed in the range of 37.5-54.8 dB (A) covering all the 9 monitoring stations which are below the prescribed regulatory limits.
- **Water quality** monitoring was carried out from 8 ground water and 8 surface water monitoring stations located in the study area. The quality of the various parameters of



water samples are showing that they are generally falling within limit as given in relevant Indian Standards.

- **Hydrogeology:** During opencast coal mining there will be no loss of base flow from Upasha Nala a part of which is flowing through the Northern boundary of the Mine Lease Area. It is proposed to divert this part of the nala after obtaining approval of the competent authority. In addition to this there are three seasonal streams flowing through the ML area in the North East direction and these are also proposed to be diverted after obtaining approval of competent authority. The intersection of groundwater occurs at 10 – 15 m below ground level. The integrated hydrological and hydrogeological study concludes that there will be negligible impact on base flow of these Nalas due to coal mining.
- The drainage pattern of the study area was studied in detailed manner particularly for the area covered around 2 Km radius and details are provided in the report. Similarly, a systematic hydrogeological survey has been carried out in and around mine area. The water level measurement in the existing dug wells was done to study the diurnal variation of the unconfined aquifer and their impact, due to nearby coal mine.
- **Soil samples** were collected at 4 selected locations in the study area to assess the existing soil conditions around the Marki Mangli IV Coal Block. Though the Project Area consists of forest land, soil samples from the forest patches present in the study area of 10 kms were collected. Characteristic of forest land soil has sufficient nutrients. Whereas, two agricultural land soils are moderately suitable for cultivation of climatic crops and have good fertility.
- Primary **Socio economic** survey on selected villages has been carried out and the details are provided in EIA/EMP. As per census 2011 demographic characteristics of the study area are represented by a number of criteria, namely population composition, sex ratio, family structure, and age distribution pattern. Attempt has been made to compare the demographic features between the census data whenever corresponding data are available. The area selected for the study constitutes 57 villages out of which 53 are inhabited villages. 4 villages are un-inhabited.
- The **floral and faunal** assemblage in the study area is also provided in the report. National Park, Wildlife sanctuary, defense installation or sensitive area are not located within 10 km radius of the mine.

## 5.0 ANTICIPATED IMPACT

To predict the expected impacts of various activities on the different environmental parameters, a detailed survey of the factors are performed and identification of probable impacts are done by different techniques.

In order to estimate the ground level concentrations due to the emission from the proposed increase in production, EPA approved Industrial Source Complex AERMOD View Model has been employed.

Highest predicted 24 hourly Ground Level Incremental Concentrations of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> are 1.64 µg/m<sup>3</sup>, 0.30 µg/m<sup>3</sup>, 3.18 µg/m<sup>3</sup> and 6.69 µg/m<sup>3</sup> respectively, which will be occurring near the source within the mine lease area.

The mining operations may cause surface water pollution due to wash off from dumps and Soil erosion. Proper control measures, which are essential to prevent the flow of suspended matter from the mine and dump are proposed to be undertaken.

It is proposed to liquidate the reserves by conventional benching method of opencast with shovel-dumper combination for overburden & Coal removal. Out of the 201.69 ha of mining lease area, 150.38 Ha will be used for excavation out of which 144.70 ha shall be reclaimed by concurrent internal dumping and remaining 5.68 ha of void will be converted into water body. It is proposed to initially stack the OB generated temporarily in the Mine Lease area. This OB shall be accommodated temporarily in an area of 13.00 ha till the first fifteen years. In addition to this the Top Soil generated shall be stacked separately within the Mine Lease. This will utilized from time to time for spreading over the areas of proposed plantation. Total OB generation will be of the order of 44.00 Mm<sup>3</sup> out of which 38.30 Mm<sup>3</sup> shall be utilised in internal backfilling of de coaled void and 5.70 Mm<sup>3</sup> for Sand preparation by installation of Sand Segregation Plant within the mine lease area. Plantation in 153.0621 Ha will be done which covers barrier, safety zone, internal dumps and infrastructure around including road and undisturbed land etc. Thus, 75.89 % the Mining lease area shall be biologically reclaimed 3.26 % area will be utilized as water reservoir and balance 20.85% will remain as public utility land / undisturbed land.

About 0.74 Mm<sup>3</sup> top soil is likely to be generated during the life of the mine and this will be stacked separately as indicated above. It is proposed to systematically utilize the generated top soil for plantation on backfilled areas.

SML proposes to develop about 153.0621 ha (including safety & reclaimed area and OB dump) of land with 229593 saplings under plantation and greenbelt development programme in progressive manner during the life of the mine. As per the MoEF& CC guidelines, it is proposed to plant local tree species @ 1500 trees/ ha in consultation with the Forest Department.

Under CSR activities it is proposed to distribute fruit saplings (like guava, mango, jamun, chikoo etc) to the students of various schools. The students will be encouraged to plant these saplings at their backyards and in school premises. They will be also encouraged to maintain and nourish these trees.

The quantity used for blasting is unlikely to create any strong vibration. Impact due to vibration on the surface structures is not anticipated. In order to check the ground vibration and to keep them within set limit, delay blasting is being undertaken. Delay detonators with 5 to 10 millisecond delay interval are used.

The transport of coal will be carried out to the desired destination of end use through road. Considering 100% transport by road which works out to be 606 tonnes of coal per day, there will an additional traffic of 40 dumpers of 30 tonnes capacity considering two way movement. Further the sand produced by crushing of OB will also be despatched by road to the end users thereby resulting in 36 dumpers of 30 T (two way). The available road network is adequate to handle the additional transport road. The transport route will be maintained by SML on regular basis and water sprinkling will be carried out thrice a day besides undertaking avenue plantation on the available places on the route.



The impact on socio economic of surrounding area will be positive, as mine will directly employ about 204 workers but there will be an indirect job opportunity for many more persons. Preference will be given to the local resident of the area for employment. There will be employment generation of double this number in secondary and tertiary sectors.

There will be negligible impacts on bio diversity of the area beyond what is already present due to traffic on the State Highway. On the other hand there will be positive impact due to the plantation activities, which are proposed by management on areas surrounding surface infrastructure for the proposed OC mine.

## **6.0 CORPORATE SOCIAL RESPONSIBILITY (CSR)**

SML proposes to undertake a number of activities under the Corporate Social Responsibility Initiative during the operation of Marki Mangli IV Coal Mine Project. The capital CSR budget has been worked out as per the expressed felt needs of villagers during Rapid Rural Appraisal. The proposed total budget is to the extent Rs. 204 lakhs and will be spent in core and buffer villages of study area. Out of this capital cost of Rs. 163.20 lakhs for CSR activities shall be spent in the first five years and Rs. 40.8 lakhs would be spent as recurring expenditure for CSR activities in the first five years.

## **7.0 CORPORATE ENVIRONMENT RESPONSIBILITY (CER)**

In addition to the CSR, SML proposes to undertake a number of activities as one time measure under the Corporate Environment Responsibility Initiative during the operation of Marki Mangli IV Coal Mine Project. A budgetary provision @1.5% of the Capital Cost i.e. Rs. 1.53 Cr is proposed to be allocated towards CER and utilized for the implementation of issues raised during the Public Hearing.

## **8.0 ENVIRONMENTAL MITIGATION MEASURES**

Mitigation Measures at the source level and an overall Management Plan at the Study Area Level are elicited so as to improve the supportive capacity of the Study Area and also to preserve the assimilative capacity of the receiving bodies. The Report provides detailed Action Plan for each pollutant viz. Air, Water, Noise, Socio-Economic, Land Use and Plantation Activities.

The proposed Mitigative Measures to be adopted during operation of the Marki Mangli IV Coal Mine Project is briefly described below under various head:

### **8.1 Air Pollution Management:**

Haul Roads will be frequently sprinkled with water for which truck mounted water tankers with atomized mist spray sprinkler arrangement will be deployed. Trucks carrying Coal and Sand will be covered by tarpaulins and will be optimally loaded avoid any spillage as well as to prevent spread of dust from it during transportation. Regular maintenance of vehicles and machineries will be carried out in order to control vehicular emissions. Green Belt Development will be taken up at various places. The dust respirators will be provided to all the workers. Good housekeeping and proper maintenance will be practiced which will help in controlling the pollution. Maintenance of the road from Mine to Railway Siding will also be undertaken.

## 8.2 Water Pollution Management:

The Mining Project shall require continuous supply of water for various purposes during mining, plantation etc apart from drinking water supply. The main source of water pollution in opencast mining is the surface run-off due to rainfall. There may be accumulation of rain water during monsoon season; the accumulated water in the main mine sump may contain suspended particles. The capacity of this sump will be adequate enough to allow settlement of suspended particles. As such, in the main mine sump, there will be primary settlement/treatment. From the sump, only supernatant water will be pumped out on surface and will thereafter be led onto Surface Sedimentation tank/Settling tank for further settlement of suspended particles as Secondary treatment. The treated water (overflow) will be used for plantation and dust suppression.

The mine water pumped from opencast pit will be collected in a Settling Tank at surface and part of it will be utilized for water spraying in the mine, plantation and the excess balance treated water will be discharged to natural watercourse.

Workshop effluent will be treated in Effluent Treatment Plant (ETP) which will be designed for a capacity of 30 KLD. The oil, grease & sludge collected from the ETP will be recycled through authorized CPCB vendors and the treated water from ETP will be reused in workshop.

In order to restrict the surface runoff from mines to control the soil erosion and wash off from dumps following measures will be adopted:

- Garland Drains will be provided around the mine wherever required to arrest any soil from the mine area being carried away by the rain water;
- Gully formations, if any, on sides of the benches will be provided with check dams of local stone or sand filled bags. The inactive slopes will be planted with bushes, grass, shrubs and trees after applying top soil to prevent soil erosion;
- Loose material slopes will be covered by plantation by making contour trenches at 2 m interval to check soil erosion both due to wind and rain;
- Retaining walls (concrete or local stone) will be provided, around the dump or wherever required to support the benches or any loose material as well as to arrest sliding of loose debris.

## 8.3 Noise & Vibration Management:

Noise is best abated at source by choosing machinery and equipment suitably, by proper mounting of equipment & ventilation systems and by providing noise insulating enclosures or padding where practicable. Proper maintenance of vehicles will be done which keeps the noise level within limits.

At the boundary of mining lease, Green Belt of local trees will be planted which acts as acoustic barriers and also planting of bushy trees of rich canopy in and around the mine area to intercept noise transmission shall be done. A Green Belt of trees of different heights shall be useful to act as noise attenuator in the mining areas.

Use of specific blasting plans, correct charging procedures and blasting ratios, delayed / micro delayed or electronic detonators, and specific in-situ blasting tests (the use of down

the hole initiation with short-delay detonators improves fragmentation and reduces ground vibrations) will be done.

Implementation of ground vibration and overpressure control with appropriate drilling grids will be practised. Ground vibrations caused by blasting will be monitored in order to know their degree and to build safe guards.

#### 8.4 Solid Waste Management:

The solid waste generated during mining operations is not hazardous in nature. During these mining operations simultaneous back filling of the OB will be done. After levelling the dumps/backfilled area, plantation will be carried out for stabilization of all the OB dumps in the mining lease area. Construction of parapet walls/bund is proposed at toe of dumps to avoid siltation towards sloping side of the ML area due to dumps. No toxic and hazardous element is present in the OB. Hence no toxic contamination is expected and protective measure is required. The non-active sides of the dump will be vegetated and stabilized by fast growing grasses. It is proposed to undertake Technical and Biological Reclamation of the backfilled area towards progressive and final mine closure activities.

In order to have gainful utilization of the OB stacked in the external dumps the following is proposed:

- ❑ *Production of sand from sandstone by crushing overburden is a proposal as a part of mine closure activity as the amount of sand likely to be produced shall not be used for backfilling.*
- ❑ *“Advising measures to recycle and reuse on of OB in a sustainable manner. Exploring and suggesting various usage of OB material – extraction of sand for use in construction projects, processed OB as stowing material, use of OB in road/rail, use in earthen bunds etc.”*
- ❑ *Overburden waste to be removed from Marki Mangli IV coal mine may produce about 60% of fine, medium, coarse grained sandstone which may be crushed to sand particles by setting up suitable Sand Segregation plant having a capacity of crushing 909 cum/ day of OB.*

#### 8.5 Top Soil Preservation:

Efforts will be made to excavate and segregate top soil separately. Top will shall be scrapped by dozer before the ground preparation for drilling and blasting. Scraped top soil will be transported to the top soil storage area. During initial period of mining the top soil will be directly utilized for plantation of saplings along the proposed roads and barren land. As and when the internal waste dump gets stabilized the stored top soil will be spread over the area of dump to facilitate plantation.

#### 8.6 Plantation:

A total of area 179.38 Ha shall be disturbed due to mining and allied activities during the operation of the Project. Out of this, plantation over 153.0621 Ha area will be undertaken @ 1500 Trees/ Ha.

The type of species will be selected from the local tree, herbs, shrubs & grasses. Species of local abundance shall be selected and if required guidance of the Forest Department will be sought.

## 9.0 IMPLEMENTATION OF EMP & ITS MONITORING:

In order to mitigate the anticipated impacts of the Coal Mining & Allied Activities, implementation and monitoring of the suggested EMP is an important aspect of the Environmental Impact Assessment / Environment Management Plan Document.

M/s SML proposes a full-fledged Environment Department consisting of two separate Cells viz. EMP Implementation Cell and Environment Monitoring Cell to review, implement, supervise and monitor the environmental related issues. As regards to air quality monitoring two continuous ambient air monitoring stations will be installed one in the core zone and one in the buffer zone. The water quality, noise level, vibration monitoring, ground water level (using piezometers) will be carried out and the records will be submitted to the competent authorities besides uploading the same on SML website.

The Mitigation Measures suggested in the Report shall be implemented so as to reduce the impact on environment due to operations of the proposed mining activities.

In order to facilitate easy implementation, mitigation measures are phased as per the priority implementation. A separate budgetary allocation of the funds shall be made for the Environmental Protection Measures. The monitoring of the pollution to know the effectiveness of the applied control measures shall be carried out at regular interval.

SML consider protection of workers' health and well- being as their prime concern and responsibility. The company accordingly proposes to adopt certain measures for providing proper occupational health services which will ensure optimal physical and mental health of employees & workers.

The Capital Budget for Environmental Protection Measure is estimated to be Rs. 690.17 Lacs and the Recurring Budget is estimated to be Rs. 137.00 Lacs.

## 10.0 PROJECT BENEFITS:

The primary benefits to the Government (State as well as Central) from any mining project are generation of additional revenues in terms of receipt of royalties and other statutory levies against the coal mined. The secondary benefits to the Government are socio-political benefits in terms of enhanced economic activities and employment opportunities in the Project Area resulting into overall development of the area. As such, Opening up of Marki Mangli – IV Opencast Coal Mine Project will be no exception and implementation of this project will add to the Government revenues.

The implementation of this Project will have positive impacts in the Project Area and surrounding villages in terms of development of infrastructure facilities like roads and communication, transport, schools as well as basic amenities viz. drinking water, sanitation, hospitals, health care, and overall socio economic development.

The Company will initiate necessary steps to create above facilities which will ultimately help in uplifting the living standards of local communities.

The direct requirement of manpower for Marki Mangli IV Coal Mine Project has been assessed at 204 along with further generation of indirect manpower.

The Project will offer creation of Secondary & Tertiary Business Opportunities for the local people in the form of Service Industry resulting in development of ancillary & allied services like Security, Canteen & Mess, Transport, Civil Repair & Maintenance, HEMM Repair and Maintenance etc.

So, it can be concluded that opening up of this Project following due procedures and subsequent implementation with the law of the land will be for the overall benefit of the local populace in particular and for the nation as well as a whole.

#### APPEAL

*In compliance with the environmental procedure the environmental clearance application is made. Necessary scientific studies have been undertaken as per the guidelines set by the Ministry of Environment Forests & Climate Change (MoEF & CC). The suggestions/recommendations of all the experts, competent authorities, and government officials are being sought for the impacts of the proposed project. Views and guidance of the local residents, community based organizations, social organizations are extremely important in order to devise a full proof Environment Management Plan for the proposed mining project and also mitigate the damages caused due to the project. Allocation of necessary funds, manpower and machinery will be made to for the protection and conservation of all the components of environment. It is ensured that all mandatory clearances will be sought from respective competent authorities before operating the proposed Marki Mangli IV Coal Mine (Proposed Production: 0.2 MTPA Coal) by M/s. Sobhagya Mercantile Limited (SML). M/s. SML is committed to implement the suggestions for the improvement of the environment and assure that every attempt will be made for the conservation and protection of the natural resources to the maximum extent.*

