

SUMMARY EIA

(As Per EIA Notification No. S.O. 1533(E) dated 14th September 2006

FOR

MARKI MANGLI-II OPENCAST COAL MINE PROJECT

Village(s): Savli, Ruikot, Pardi and Mukutban
Tahsil – Jhari Jamni, District – Yavatmal, Maharashtra
Project Area 339.467 Ha,
Coal Production Capacity = 0.30 MTPA
(Project Category 'B')

Submission for

Public Hearing

to

Maharashtra Pollution Control Board

PROJECT PROPONENT



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SUMMARY EIA

1.0 INTRODUCTION:

Government of India launched the auction process of Commercial Coal Mining (38 Mines) through the Coal Mines (Special Provisions) Act, 2015 and MMDR Act, 1957 in June'2020. Total 19 commercial coal Mines were successfully auctioned between 2nd to 9th November 2020 including Marki Mangli II Coal Mine.

M/s Yazdani International Private Limited (YIPL) had participated in the auction of the Mine and emerged as a “Preferred Bidder” on 06th November 2020. Nominated Authority vide its letter dated 28th December 2020 had declared YIPL as successful bidder for Marki Mangli II Coal Mine. YIPL has signed Coal Mine Development & Production Agreement (CMDPA) for Marki Mangli II Coal Mine on 11th January 2021.

Marki Mangli II 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.

YIPL proposes to win 0.30 MTPA of coal from the Marki Mangli II Coal Mine through open cast coal mining methodology within the leasehold area. The area allocated in respect of Marki Mangli II Coal Mine is 339.467Hectares out of which Revenue Forest is 146.996 Ha, Private land is 185.04 Ha and Non-Forest Govt. land is 7.43 Ha.

In accordance with the provisions of EIA Notification 2006 published by MoEF&CC vide Notification No. S.O. 1533 dated 14/09/2006, the Project is required to obtain Prior Environment Clearance from the Central Government as Category “A” Project.

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 have been classified as Category “A” Projects and all coal projects having mining lease area less than 500 Ha is categorized as ‘B’.

Considering all the above, Marki Mangli II Coal Mining Project of M/s Yazdani International Pvt. Limited with Lease Area of 339.467Ha shall be now considered as Category “B” Project from Environment Angle. Accordingly, the Project shall be appraised by State Environment Impact Assessment Authority (SEIAA) at state level for grant of Environment Clearance.





M/s YIPL 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 to SEIAA/SEAC, Maharashtra on 24/06/2022 for obtaining Environment Clearance for the Project. The State Expert Appraisal Committee of SEAC-1, Maharashtra considered the Project for grant of Terms of Reference (ToR) in their 226th Meeting held on 25-27/07/2022. The recommendations SEAC-1, Maharashtra were considered by State Environment Impact Assessment Authority (SEIAA), Maharashtra in their 251st Meeting held on 14/09/2022 and after deliberations the SEIAA accorded grant of TOR.

The TOR for the Project was accorded vide SEIAA Letter No. SIA/MH/MIN/78839/2022 dated 30th September 2022.

SrSPL collected the Base Line Environmental Data at the Project Site and buffer zone of 10 km radius 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 March 2022 to May 2022 (Summer Season) for one season for 13 weeks .

This Draft EIA/EMP Report has been prepared in accordance with the ToR issued by MoEF&CC and is being submitted to Maharashtra Pollution Control Board for conduct of Public Hearing, as per the provisions of EIA Notification 2006 and amendments thereof.

2.0 PROJECT DETAILS:

Marki Mangli II 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: Latitudes (N) : 19°49'02" – 19°50'31" and Longitudes (E) : 78°48'56" - 78°50'32".

The proposed Coal Mine is well connected by both rail and road. The Marki Mangli II Coal Block is located 3 kms North- West of Mukutban village and is 35 km south of Wani town in Tahsil Jhari Jamni , District Yavatmal of Maharashtra The nearest rail head Mukutban is about 3.5 km from the south eastern part of the Mine.

The Mining Plan envisages normative production capacity of 0.30 MTPA and a peak production capacity of 0.45 MTPA within 339.467 Ha Mining Lease Area. The Project has been proposed to be worked by Mechanized Opencast Mining Methodology by deploying Surface Miner for extraction of coal and Shovel/Dumper Combination for removal of Overburden. The envisaged Project Capital Cost is Rs. 189.89 Crores.





The total land requirement for the Project is 339.467Ha, out of which Revenue Forest is 146.996 Ha, Private land is 185.04 Ha and Non-Forest Govt. land is 7.43 Ha. The necessary application of diversion of this 146.996 ha Forest Land for mining purpose has been submitted to Forest Department on 20-05-2022 and is under active consideration. The villagewise acquisition of this private land is Savli (4.712 Ha), Ruikot (165.037 Ha) & Mukutban (15.292 Ha). No part of private land of Pardi villages falls in the ML area except some part of forest land. The compensation for this private land shall be in accordance with the relevant provisions of the Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation & Resettlement Act, 2013 and amendments thereof and also as applicable to Maharashtra State under provision of Act No. 37, dated 26.04.2018.

There is no human settlement within the proposed mining lease area and hence the Project does not involve shifting of villages located within the Project Area.

The Project envisages extraction of 9.58 Million Tonnes of coal along with Overburden Removal of 87.06 Million Cubic meter in 39 years of mine life (including construction period). The quality of coal is Grade G-9.

Out of the quantity of 87.06 Million Cum overburden, 76.99 Million Cum overburden is proposed to be backfilled into the mined out area. A final void of only about 51.78 Ha having a depth of 30 m shall remain post closure of opencast mine which will be converted into a Water Reservoir and as per approved mining plan and as part of the vision of MOC as stated in Sustainable Development Cell for gainful use of overburden wherein it has been suggested to recycle and reuse of OB in a sustainable manner by way of extraction of sand for use in construction projects and thereby restrict river bed sand mining. As such it has been proposed that the overburden stacked in this external dump shall in turn be crushed in a crushing unit for preparation of sand, which can then be utilized in the construction industry. This sand crushing unit is proposed to be installed in the mine lease area. Further as a green initiative it is proposed to initially setup a 5 MW solar plant on the reclaimed area after obtaining the due permissions.

The Project shall provide employment to 250 persons in the opencast mining project. In addition about 50 persons shall get employment in the proposed Sand Crushing and Solar Plant. Local manpower will be trained and given employment opportunity. However, skill, work efficiency and safety aspects would also govern the opportunities for employment. The local persons including men & women, shall be given preference in employment for mine as per their eligibility. Necessary training shall be given to the unemployed youths including aspiring males & females 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 initially 426 Cum/day and ultimately it is estimated to be 922 Cum/Day. Out of this, 150 Cum/Day of the water is required Dust Suppression, 648 Cum/day for Green Belt, 112 Cum/day for Workshop &





other activities, and the balance 12 Cum/Day for drinking/domestic purpose. Domestic Water shall be sourced from ground water through bore wells for which necessary approvals shall be obtained. Water for Industrial Use shall be sourced through accumulated pit water & rain/surface water for which also the necessary application for approval from competent authority has been made.

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 energy consumption will be 1.3 MVA.

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

The Project shall be requiring about 1010 Liters/Hour 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 4.0 Tonnes of explosives per day for removal of Overburden.

A seasonal Nala is flowing from the Northern to Eastern to part of the Mine Lease area and shall be diverted along the Eastern part of the Mine lease area after 10 years from start of the mining operations to facilitate Coal Mining Operations, after obtaining the due permissions/approvals. The necessary land required for this diversion will be acquired. The compensation for this land shall be in accordance with the relevant provisions of the Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation & Resettlement Act, 2013 and amendments thereof and also as applicable to Maharashtra State under provision of Act No. 37, dated 26.04.2018.

A series of check bunds will be constructed on the seasonal nala to be diverted along northern boundary of the lease area. The excess pumped out treated water from the mine pit will be stored in these check bunds. This water will be available to the nearby farmers for irrigation purposes.

Coal produced from the mine shall be transported initially by 25 T RD Dumpers to the Raw Coal receiving stockyard of the located in the Mine Lease Area. The coal shall then be transported by road by 50T Dump Trucks for onward despatch to the consumers.

3.0 BASE LINE ENVIRONMENTAL STATUS:

The Base Line Environmental quality data for various components of environment viz. Air, Noise, Water, Land and Socio-Economic were generated during March 2022 to May 2022 in the Study Area covering 10 Kms around the Marki Mangli II 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.

Air Quality Monitoring was carried out at 9 Stations consisting 1 Sampling Stations within the Core Zone (Project Area) and 8 Sampling Stations in Buffer Zone (10 Kms around Core Zone). Parameters of twelve air pollutants viz. PM₁₀, PM_{2.5}, Sulphur Dioxide (SO₂), Oxides of Nitrogen (NO_x), Ozone (O₃), 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 observations 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-9 were observed in the range of 44.8 to 60.64 µg/m³. Almost all the stations have PM₁₀ concentrations less than half of 24 hours average permissible limit i.e. 100 µg/m³ as prescribed by MoEF&CC for industrial, residential, rural and other area.

Particulate Matter (PM_{2.5}): The maximum PM_{2.5} concentration covering all the air quality monitoring stations A-1 to A-9 were observed in the range of 19.1 to 34.4 µg/m³ as against the NAAQ Standards of MoEF & CC prescribed limit of 60 µg/m³ for industrial, residential, rural and other areas.

Sulphur Dioxide (SO₂): The maximum SO₂ concentrations covering all sampling stations A-1 to A-9 were in the range of 13.1 to 21.0 µg/m³. All monitored stations have SO₂ concentrations well within the stipulated (annual 24 hours) limit of 80 µg/m³ as prescribed for industrial, residential, rural and other areas under revised NAAQ Standards of MoEF & CC.

Oxides of Nitrogen (NO_x): The maximum NO_x concentrations covering all sampling stations A-1 to A-9 were observed in the range of 18.7 to 31.2 µg/m³. All monitored stations have NO_x concentrations well within the stipulated (annual 24 hours) limit of 80 µg/m³ 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.

- **Free Silica:** A few samples of PM₁₀ were analyzed for free silica which was found to be below detectable limit. In summary, the ambient air quality of Marki Mangli-II Coal 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 37.4-52.2 dB (A) covering all the 9 monitoring stations which are below the prescribed regulatory limits.
- **Water quality** monitoring was carried out from 5 ground water and 4 surface water monitoring stations located in the study area. The quality of water samples are showing that the water sources of the area are not polluted except the surface water samples getting contamination from surface run-off. The Coliforms values are exception otherwise all the water samples are indicating its characteristics within limit as given in relevant Indian Standards.
- **Hydrogeology:** During opencast coal mining there will be no loss of base flow from Upasha Nala which is flowing at a distance of to the Northern and Western boundaries of the Mine Lease Area. The intersection of groundwater occurs at 7-10 m below ground level. The integrated hydrological and hydrogeological study concludes that there is no impact on base flow of these Nalas due to coal mining.
- The drainage pattern of the area was studied in detailed manner particularly for the area covered around 2.5 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 II 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 73 inhabited villages.





- 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.

4.0 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.

Predicted 24 hourly Ground Level Incremental Concentrations of PM10 & PM2.5 are estimated to be 1.64 ug/m³ and 0.14 ug/m³ respectively at work place. This prediction is based on various mining operations and site specific meteorological data in worst scenario. 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 removal and use of surface miner for coal removal. Out of the 339.467Ha of mining lease area, 215.21 Ha will be used for excavation out of which 163.43 Ha shall be reclaimed by concurrent internal dumping and remaining 51.78 Ha of void will be converted into water body. It is proposed to initially stack the OB generated temporarily in the non-mineralized zone of the Mine Lease area. This OB shall be accommodated in an area of 52 ha till the first ten 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 87.06 Mm³ out of which 76.99 Mm³. Shall be utilised in internal backfilling of decoaled void .Plantation in 269.49 Ha will be done which covers barrier, safety zone and infrastructure around including road and undisturbed land etc. Thus, 79.39 % the Mining lease area shall be biologically reclaimed ,16.93 % area will be utilized as water reservoir and balance 3.10 % will remain as public utility land / undisturbed land.

About 2.15 Mm³ top soil is likely to be generated and stacked separately as indicated above. It is proposed to systematically utilize the generated soil for plantation on backfilled areas and also on external dump areas.

YIPL proposes to develop about 269.49 ha (including safety & reclaimed area and OB dump) of land with 4,06,235 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 on severe scale is not anticipated. In order to check the ground vibration and to keep them within set limit, delay blasting will be undertaken..

The transport of coal and sand will be carried out to the desired destination of end use through road. The available road network is adequate to handle the additional transport road. Considering 100% transport by road which works out to be 909 tonnes of coal per day, there will an additional traffic of 36 dumpers of 50 tonnes capacity considering two way movements. Further, additional 330 dumpers of 30 tonne capacity shall also ply on this road for transportation of sand. The transport route will be maintained by YIPL 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 250 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. It is expected that there will be employment generation 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 otherhand 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.

5.0 REHABILITATION & RESETTLEMENT:

- 5.1 The Project does not involve shifting of any of the four villages viz. Savli, Pardi, Ruikot and Mukutban located within the Project Area. Only private land 185. 04 Ha will be acquired within the lease area in phased manner.
- 5.2 **Land Acquisition And Compensation:** The acquisition of private land of these villages falling in the ML area shall be done. The compensation for the land shall be in accordance with the relevant provisions of the Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation & Resettlement Act, 2013 and amendments thereof and also as applicable to Maharashtra State under provision of Act No. 37, dated 26.04.2018. Provision of employment to one person against each land parcel/ Survey No. will be made, as per their eligibility. PAP Card will be issued to all the land loser families directly affected by the project. Also preference in





employment will be given to the landless agriculture laborers affected due to the project, as per their eligibility. The private land acquisition is proposed to be acquired in a phased manner commencing from the start of mining operations and shall be completed within 5 years. The assessment of agriculture labours dependent on the agriculture land to be acquired will be done concurrently before actual commencement of land acquisition.

5.3 **Provisions for Landless/ Forest Dependent on Mining lease area:** This component of Policy is important as it takes care of those affected families whose livelihood is likely to be lost due the acquisition of the project. This category of PAPs includes

- a. Landless agriculture workers: Detail socio-economic inventory will be prepared once the land acquisition process starts from each land holder for the land less worker and peasants / tenants working on the farm but not beneficiary of the compensation as they are not holding in title or rights.
- b. Individual Patta Holder on forest land: There is no individual rights under FRA 2006, by government on the land proposed for the diversion for this project. However, in case if such rights are observed same may be compensated as per the law.
- c. Community Forest Right: It is likely that some of the landless villages are depended on the minor forest produce on the forest land which they will be deprived due to incoming of mining.

For all the above categories necessary skill development training shall be provided for making them employable.

6.0 CORPORATE SOCIAL RESPONSIBILITY (CSR):

YIPL proposes to undertake a number of activities under the Corporate Social Responsibility Initiative during the operation of Marki Mangli II 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 110 lacs (Rupees One Hundred and ten lacs only) and will be spent in core and buffer villages of study area, out of which Rs 89.90 lakhs under capital cost for CSR activities shall be spent in the first five years. About Rs 20.11 lacs 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, YIPL proposes to undertake a number of activities as one time measure under the Corporate Environment Responsibility Initiative during the operation of Marki Mangli II Coal Mine Project. A budgetary provision @1.5% of the Capital Cost, of Rs. 2.85 Cr is proposed to be allocated 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 present Draft EIA/EMP 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 II Coal Mine Project is briefly described below under various head:

8.1 Air Pollution Management:

Haulage Roads shall be frequently sprinkled with water for which truck mounted water tankers with atomized mist spray sprinkler arrangement will be provided. Coal transportation dumpers shall be covered by tarpaulins to prevent spread of dust from it during transportation. Regular maintenance of vehicles and machineries shall be carried out in order to control vehicular emissions. Green Belt Development shall be taken up at various places. The dust respirators shall be provided to all the workers. Good housekeeping and proper maintenance shall be practiced which shall help in controlling the pollution. Maintenance of the coal transportation road from Mine shall be undertaken. Provision of Protective barrier by erecting green net along the outer boundary of western quarry to arrest fugitive dust emissions from mining and allied activities. This will enable concurrent agricultural practices to continue during the initial period. Provision of Wind Barrier by erecting green net along both sides of approach road. All necessary dust control measures will be adhered to ensure no impact on surrounding agriculture crop. In case of any complaints about damage to crop due to mining and allied activities, the necessary compensation as established by District Administration shall be paid to the affected farmers.

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 may contain fine silt. This shall be treated in Settling Tank of adequate dimensions. The treated water (overflow) will be used for plantation and dust suppression.

The mine water pumped from opencast pit shall be collected in a Settling Tank at surface and part of it shall be utilized for water spraying in the mine, plantation and the excess balance shall be discharged to natural watercourse. A series of check bunds will be constructed on the seasonal nala to be diverted along northern boundary of the lease area. The excess pumped out treated water from the mine pit will be stored in these check bunds. This water will be available to the nearby farmers for irrigation purposes.





Workshop effluent will be treated in Effluent Treatment Plant (ETP) which will be designed for a capacity of 100 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.

It is proposed to prepare Water Security Plan for adjoining villages (three villages namely Bhendala, Savali, and Ruikot) WSP aims for drinking water security in selected villages by means of Ensuring Quality and quantity of water supply, storage management (aquifer management, demand management), capacity building and training.

In order to restrict the surface runoff from mines to control the soil erosion and wash off from dumps following measures shall be adopted; Garland Drains shall 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 shall be provided with check dams of local stone or sand filled bags. The inactive slopes shall be planted with bushes, grass, shrubs and trees after applying top soil to prevent soil erosion; Loose material slopes shall 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) shall 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 shall be done which keeps the noise level within limits.

At the boundary of mining lease, Green Belt of local trees shall be planted which acts as acoustic barriers. 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.

Mechanical ripping shall be used, where possible, to avoid or minimize the use of explosives.

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) shall be done.

Implementation of ground vibration and overpressure control with appropriate drilling grids shall be practised. Ground vibrations caused by blasting shall 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 will be optimally used. During these mining operations simultaneous back filling of the OB shall be done. After leveling 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 no protective measure is required. The non-active sides of the dump will be vegetated and as such 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.

Overburden waste to be removed from Marki Mangli II coal mine may produce about 70% of fine, medium, coarse grained sandstone which may be crushed to sand particles by setting up suitable mobile crushing plant.

8.5 Top Soil Preservation:

Efforts shall be made to excavate and segregate top soil separately. Top soil shall be scrapped by dozer before the ground preparation for drilling and blasting. Scraped top soil shall be transported to the top soil storage area. During initial period of mining the top soil shall 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 shall be spread over the area of dump to facilitate plantation.

8.6 Plantation:

A total of area 285.47 Ha shall be disturbed due to mining and allied activities during the operation of the Project. Out of this, plantation over 269.49 Ha area shall be undertaken @ 1500 Trees/ Ha.

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

During the initial 5 years of mine working, about 2000 trees will be cut for clearing area for mining and allied activities. To compensate, it is planned to plant about 16600 trees within the mine lease area in the first three years of mining. Apart from this, Compensatory Afforestation





will be carried out on equivalent area against the 146.996 Ha forest area diverted for mining purposes.

In addition to the mining activity following Green initiative within Mining Lease is also proposed:

Setting up of a Solar Park of 5 MW capacities on the reclaimed /backfilled area.of 5 Ha to start with. After successful implementation, further expansion in capacity of this Solar Park is envisaged and its implementation shall be done as per subsequent approvals accorded in this regard.

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.

YIPL 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 YIPL 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.

YIPL 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. 2639.12 Lacs and the Recurring Budget is estimated to be Rs. 250.00 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.

The Project shall 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 shall 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 II Coal Mine Project has been assessed at 250 along with further generation of indirect manpower.

The Project shall 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.

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 – II Coal Mine by M/s. Yazdani International (P) Ltd. with a production capacity of 0.3 MTPA Coal.** M/s. Yazdani International (P) Ltd. 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.*

