1.0. INTRODUCTION

1.1. Purpose of the Report

The proposed Marki-Zari-Jamani-Adkoli coal block, Tehsil Zari-Jamani, Dist. Yavatmal, Maharashtra admeasures 4.59 sq. km, has been allocated to Maharashtra State Mining Corporation Ltd. (MSMCL), a State Govt. undertaking, vide letter no. 13016/23/2006-CA-I dated 2.8.2006, by Govt. of India, Ministry of Coal. Coal mined from the allotted mine shall be dispensed to small industrial consumers.

The application to prior Environmental Clearance (Form-1) for the proposed project was considered by the Expert Appraisal Committee (Thermal & Coal Mining Projects) in its 43rd meeting held during February 21st to 22nd 2012, for determination of the Terms of Reference (ToR) for preparation of the Environmental Impact Assessment (EIA) report. The Committee has suggested specific Terms of Reference (ToR) for preparation of the EIA report and Environmental Management Plan vide its letter No.J-11015/108/2011-IA.II (M), dated 23rd March 2012.

This Environmental Impact Assessment (EIA) study report is prepared for obtaining Environmental Clearance (EC) from the Ministry of Environment and Forests (MoEF), Government of India, New Delhi and the Consent for Establishment (CFE) from the Maharashtra Pollution Control Board (MPCB) for the proposed open cast coal mine project.

1.2. Identification of Project & Project Proponent

1.2.1 Identification of Project

The prospecting in Marki-Zari-Jamani-Adkoli area was commenced during 1995-96 by regional drilling with a view to prove the occurrence of coal. The regional drilling had proved the occurrence of coal in 1997-98. Hence, regional drilling was continued during 1999-2000 with a view to confirm lateral persistence of the coal beds. The work established the occurrence of one workable coal seam ranging in thickness from 1.84 m. (MJ-8) to 9.29 m. (MJ-10). Based on these results the Marki-Zari-Jamani-Adkoli block was taken up for systematic drilling on 400 x 200 m. grid since 2002-2003 field season to assess the reserves and quality of coal in the block. The exploration work was continued upto the end of 2008-09. Exploration was done and G.R has been prepared by Directorate of Geology and Mining, Government of Maharashtra, Nagpur.

1.2.2 Identification of Project Proponent

To develop and extract coal from Marki – Zari – Jamani – Adkoli Block. Maharashtra State Mining Corporation Ltd. (MSMC) has entered into the Joint Venture Company Agreement.

MSMC an enterprise owned and controlled by Government of Maharashtra engaged in exploration of different industrial mineral namely coal, silimanite, kyanite, prophylite, limestone, dolomite, fluorspar, iron ore and silica sand.
GoI, Ministry of Coal has allocated Marki-Zari-Jamani-Adkoli Coal Block to MSMC under certain terms & conditions as stipulated in the said order for commercial mining purpose. MSMC thereafter invited an offer to identify and select a partner for formation of Joint Venture Company for undertaking development, mining & marketing from the Marki-Zari-Jamani-Adkoli Coal Block.
MSMC approved the bid of Sunil Hi-Tech Engineers Limited (SHEL) and thereby agreeing to appoint SHEL as its joint venture partner for entire development and operation of Marki-Zari-Jamani-Adkoli Coal Block.
Thereafter a Joint Venture Company is the name of MSMC Adkoli Nature Resources Limited was incorporated. MSMC holds 51% shares in JVC and hence, it is a govt. company.

Maharashtra State Mining Corporation Limited Company fully owned by the Government of Maharashtra incorporated under Companies Act, 1956 on 14th November, 1973 with the main objects as under:

- To promote systematic development of various mines with a view to conserve the mineral wealth of the nation.
- To purchase, take on lease or otherwise acquire any mines, mining rights and metalliferous land in the state of Maharashtra, or elsewhere, and any interest therein, and to explore, work, exercise, develop, and turn to account the same.
- Undertake the holistic development of the mineral sector in the state & operate as the apex agency for minerals under the guidance of the State Government. To mine in a scientific & profitable manner the metals and minerals found in the state. To process the metals & minerals and set up value added units in the state. To provide guidance and training to private entrepreneurs in the minerals sector.

Now a step towards expansion of the on-going projects, opening new mines and diversification to mineral based industries, MSMC also started the following objectives:

- To enter into new mineral bearing areas of economic importance having ready market, viz. coal, Iron ore, Manganese, Tungsten etc.
- Manufacturing of mineral-based value added product: - R & D work on various minerals have been undertaken by MSMC through national level organizations. Based upon these reports MSMC would like to set up mineral based industries to produce value-added products of economic importance.
- Expansion of market of the minerals and value added product:- MSMC have adequate potential of quality and unique minerals, MSMC would like to explore firm and regular market for these minerals.
- Scope of PUBLIC-PRIVATE collaboration

1.3. Brief Description of the Project

1.3.1 Nature of the Project

As per EIA notification September 14th, 2006 and its amendments 2009 all the mining project having a mining lease area of 5 hectare and more requires prior environmental clearance. The mine lease area for this coal mine is more than 50 ha so it falls under "Category A" based on the **Schedule Clause no 1(a)** of EIA notification and its corresponding amendments till date and requires environmental clearance from Ministry of Environment and Forests.

1.3.2 Size of the Project

The proposed mine is in 459.68 ha and the land is to be purchased in the name of Maharashtra State Mining Corporation Ltd. This will be open cast mine having capacity of 1 MTPA.

The Mining Plan of Marki-Zari-Jamani-Adkoli block has been prepared and approved by Ministry of Coal.

1.3.3 *Anticipated Life of Project and Cost of the Project*

The gross geological reserves of the coal are 24.17 Million Ton whereas extractable coal is 13.10 Million Ton. The expected life of the mine will be 15 years. The cost of the project is approx. Rs.300 crores.

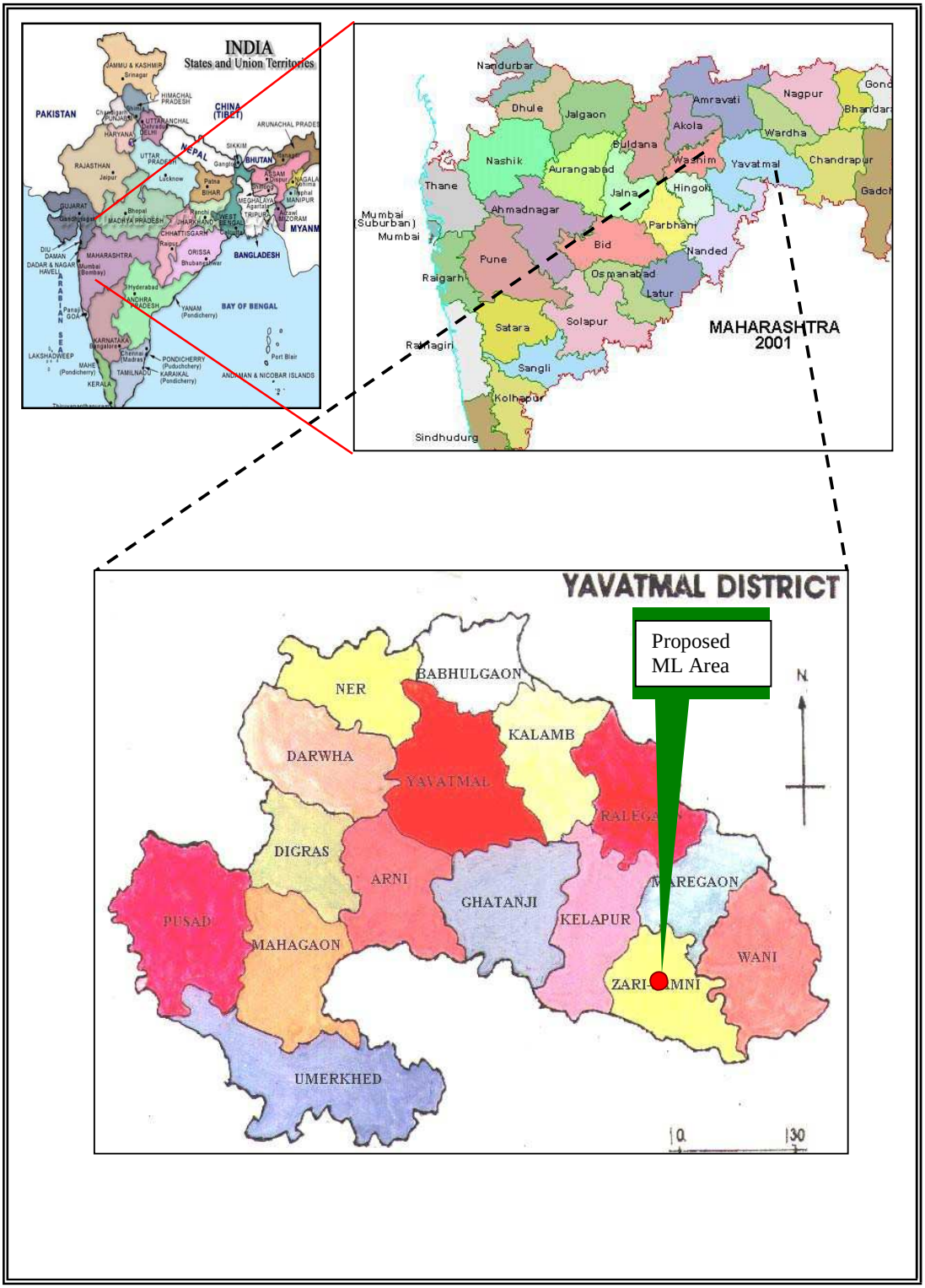
1.3.4 *Location of the Project*

The mining lease area of Marki-Zari-Jamani-Adkoli block open cast mine (459.68 ha) in located in villages of Adkoli, Paunar & Ganeshpur Khurd, Tehsil Zari-Jamani, Dist. Yavatmal, Maharashtra. The nearest rail heads are Kayar and Mukutban on Wani-Adilabad broad gauge railway line which connects to Nagpur, Mumbai and Chandrapur at other ends. The mine lease area of block is more or less flat with some undulations.

The Marki-Zari-Jamani-Adkoli block area is included in survey of India toposheet no. 56 I/13 on R.F. 1:50000. The block is bounded by the following geographical co-ordinates.

Latitude	19°51′49″ - 19°52′55″ N
Longitude	78°46′19″ - 78°49′23″ E

The District headquarter, Yavatmal is about 90 Km and nearest airport Nagpur is 143 Km. The location map of the project site is presented in **Figure 1**, Study Area Map (10 Km Radius) is presented in **Figure 2**, The location details are presented in **Table 1.**



Source: Survey of India, New Delhi

Figure 1
LOCATION MAP

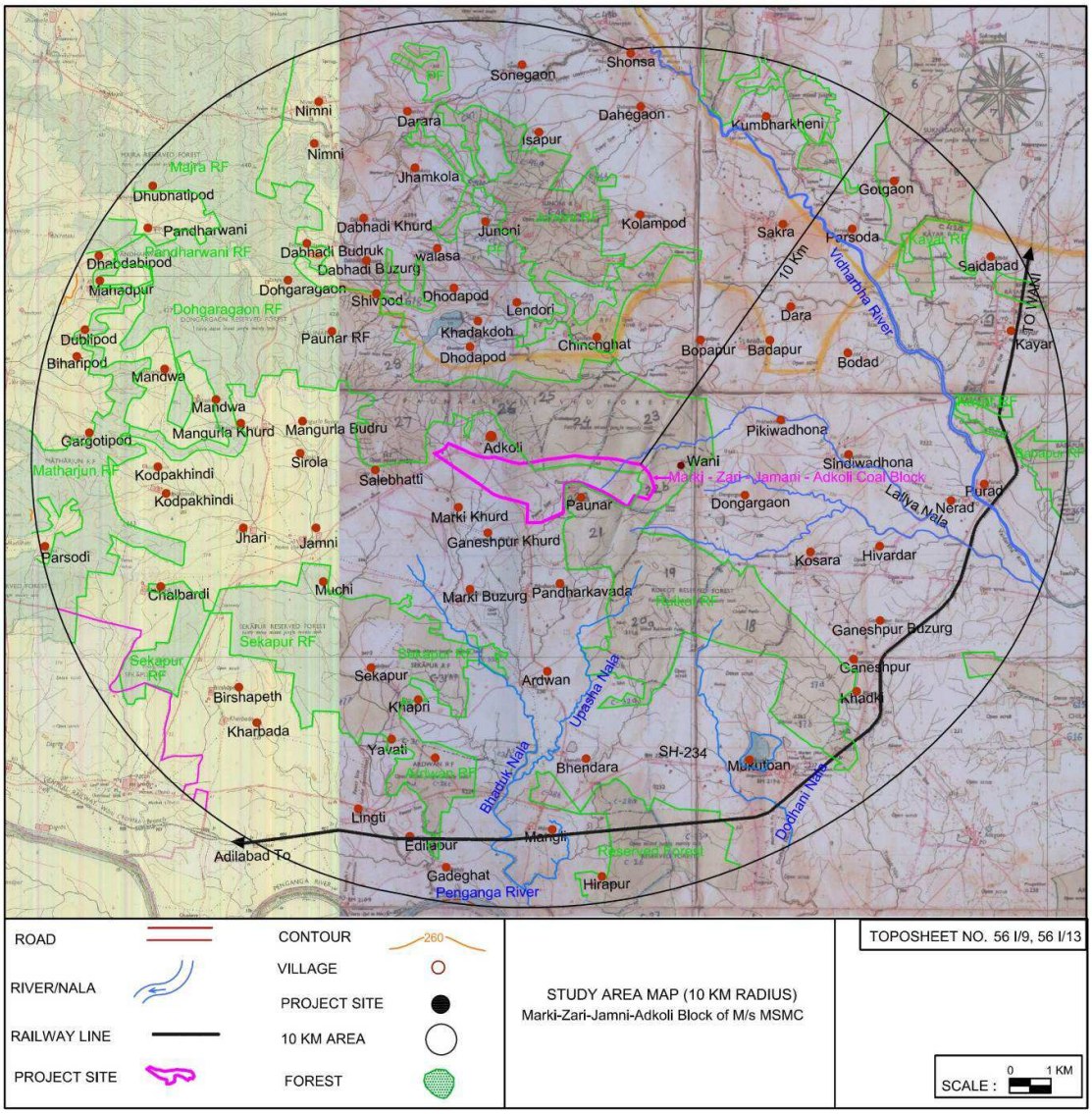


Figure 2
STUDY AREA MAP (10 KM RADIUS)

TABLE-1
SITE LOCATION DETAILS

Sr. No.	Particulars	Details
1.	Location	
	Village/Town	• Adkoli • Paunar • Ganeshpurkhurd
	Grampanchyat	Adkoli (Village: Adkoli, Paunar & Ganeshpurkhurd)
	Tehsil	Zari -Jamani
	District	Yavatmal
	State	Maharashtra
2.	Latitude	19°51'49" N -19°52'55" N
3.	Longitude	78°46'19" E - 78°49'23"E
4.	Altitude	247-272 m MSL
5.	Toposheet Number	56I/13
6.	Climatic condition	Avg. Ambient air temp 19.2 ◦ C to 39.5 ◦ C Avg. annual rainfall 1089 mm (Source: IMD, Yavatmal)
7.	Nearest town	Wani (~23 Km, NE)
8.	Nearest City	Yavatmal (~90 Km, NW)
9.	Nearest railway station	Mukutban/Kayar (17 Km), SE/NE
10.	Nearest highway	SH-233 (~6.2 km,N), SH-234(~8.6 km,S)
11.	Nearest airport	Nagpur (~143 Km,N)
12.	Nearest streams/Rivers	Vidarbha River (7.4 km, NE) Khadakdoh Tal (2.6 Km, NNW) Mukutban River (6.4 Km, SE) Kukurbodi Small Lake adjacent to ML area (S)
13.	Reserved/Protected forest	Paunar RF (0.5Km, N), Ruikot RF (2.3 Km, SE), Sekapur RF (3.8 Km, SW), RF near village Walsa (4.1 Km, N), Dongargaon RF (4.7Km,WNW), Junoni RF (4.9Km, N), RF near village Junon (5 Km, N), Pandharwani RF (5.5Km,NW), Ardwan RF (6.1 Km, SSW), Matharjun RF (7.9 Km, W), Kayar RF (8.1 Km, NE), Chilai RF (9.2 Km, SE), Babapur RF (9.5 Km, E), Majra RF (10 Km, NW), Junoni RF (12.1 Km,SE), Pimpri RF (12.9 Km,ENE), Chilai RF(9.2 Km,ESE), Akapur RF(14.1 Km,ESE)
14.	Seismic zone	Zone-II as per IS-1893 (Part-1)-2002
15.	Sanctuaries /National Parks/ Biospheres, etc.	Nil in 15 km radius
16.	Topography	More or less flat with some undulations

Sr. No.	Particulars	Details
17.	Defence Installations	Nil in 15 km radius
18.	Historical Places	Nil in 15 km radius
19.	Eco-sensitive area	Nil in 15 km radius
20.	Notified Archaeological sites	Nil in 15 km radius
21.	Mangroves	Nil in 15 km radius
22.	Estuary /Sea	Nil in 15 km radius

1.3.5 Size/Magnitude of Operation

The salient features of the proposed opencast mining project are given in **Table-2.**

TABLE-2
SALIENT FEATURES OF THE MINING PROJECT

Sr. No.	Particulars	Details
1.	No of Quarries	One
2.	Mine Status	New
3.	Mine Type	Opencast
4.	Mine Lease Area	459.68 Ha
5.	Geological Reserves	24.17MT
6.	Extractable Reserves	13.10 MT
7.	Mine Capacity	1.00 MTPA
8.	Mine Life	15 years
9.	Mining Method	Conventional Shovel-Dumper for OB and Surface Miner for Coal
10.	Cost of the Project	Approx. Rs. 300 Cr

2.0 ANALYSIS OF ALTERNATIVE TECHNOLOGY AND SITE

The coal block has been identified based on the result of geological investigations and exploration carried out by the DGM , Maharashtra. The mining projects are site specific and as such alternate sites were not considered. Opencast mining method will be using Shovel –Dumper combination for OB extraction and Surface Miner for Coal extraction has been proposed.

2.1 Calendar plan of production

The details pertaining plan of production calendar are shown in **Table -3**

TABLE-3
CALENDAR PLAN OF PRODUCTION- COAL & OVERBURDEN

	Coal Production		OB Production		SR	
Year	Coal	Cumm coal	OB	Cumm OB	Running SR	Average SR
	Mt	MT	Mcum	Mcum	Cum/t	Cum/t
1	0.30	0.30	2.40	2.40	8.00	8.00
2	0.70	1.00	5.60	8.00	8.00	8.00
3	1.00	2.00	8.00	16.00	8.00	8.00
4	1.00	3.00	13.00	29.00	13.00	9.67
5	1.00	4.00	13.00	42.00	13.00	10.50
6	1.00	5.00	13.00	55.00	13.00	11.00
7	1.00	6.00	13.00	68.00	13.00	11.33
8	1.00	7.00	16.00	84.00	16.00	12.00
9	1.00	8.00	16.00	100.00	16.00	12.50
10	1.00	9.00	16.00	116.00	16.00	12.89
11	1.00	10.00	16.00	132.00	16.00	13.20
12	1.00	11.00	26.50	158.50	26.50	14.41
13	1.00	12.00	26.50	185.00	26.50	15.42
14	0.70	12.70	18.55	203.55	26.50	16.03
15	0.40	13.10	10.00	213.55	25.00	16.30
Total	**13.10**		**213.55**			

The total extractable coal reserves have been estimated as 13.10 MT at the corresponding OBR of 213.55 Mm3 at an average SR of 16.30 m3/t. The rated output of 1.0 MTPA would be achieved in 3rd year of Mining.

2.2 Overburden Dumping Calendar Plan

The year wise accommodation of the generated O.B. in external or internal dumps is given below in the calendar plan of dumping.

TABLE 4
CALENDAR PLAN OF DUMPING

	External Dump		Internal Dump		Total Dump	
Year	Overburden	Cumm OB	Overburden	Cumm OB	Overburden	Cumm OB
	Mcum	Mcum	Mcum	Mcum	Mcum	Mcum
1	2.40	2.40	0.00	0.00	2.40	2.40
2	5.10	7.50	0.50	0.50	5.60	8.00
3	5.50	13.00	2.50	3.00	8.00	16.00
4	6.50	19.50	6.50	9.50	13.00	29.00
5	5.00	24.50	8.00	17.50	13.00	42.00

	External Dump		Internal Dump		Total Dump	
Year	Overburden	Cumm OB	Overburden	Cumm OB	Overburden	Cumm OB
	Mcum	Mcum	Mcum	Mcum	Mcum	Mcum
6	5.00	29.50	8.00	25.50	13.00	55.00
7	4.00	33.50	9.00	34.50	13.00	68.00
8	1.00	34.50	15.00	49.50	16.00	84.00
9	0.00	34.50	16.00	65.50	16.00	100.00
10	0.00	34.50	16.00	81.50	16.00	116.00
11	0.00	34.50	16.00	97.50	16.00	132.00
12	0.00	34.50	26.50	124.00	26.50	158.50
13	0.00	34.50	26.50	150.50	26.50	185.00
14	0.00	34.50	18.55	169.05	18.55	203.55
15	0.00	34.50	10.00	179.05	10.00	213.55
Total	**34.50**		**179.05**		**213.55**	

3.0 BASELINE ENVIRONMENT STATUS

3.1.1 Introduction

Baseline environmental data as per TOR was generated in the study area comprising 10 km around the project site from March 9th , 2012 to June 8th , 2012 representing summer season. Salient features of the findings are presented below:

3.1.2 Geology and Surface Hydrology

The detailed hydrometeorology & hydrogeological study for the Marki-Zari-Jamani-Adkoli coal Block has been carried out.

The block is not drained by any major rivers.

3.1.3 Meteorology

The predominant wind direction observed during the study period was North West for 17.8% of the total time and followed by West (16.6%). The maximum and minimum temperatures recorded at site during study period were 45.2^0 C and 20.4 ^{0} C the Relative Humidity was observed to range from 8-87%.

3.1.4 Ambient Air Quality

Ambient air quality monitoring was carried out at six location following CPCB guidelines. The concentrations of PM_{10}, $PM_{2.5}$, SO_2, NO_x, and CO observed are well within the NAAQ standards prescribed for industrial and rural /residential zone.

3.1.5 *Water Quality*

One surface water (Vidharba River) and four ground water sources covering 10 km radial distance were examined for physico-chemical, heavy metals and bacteriological parameters. The water in general is fit for drinking. The surface and ground water quality does not indicate any industrial pollution.

3.1.6 *Soil Characteristics*

Soil samples from five locations from the study area were analysed. pH of the soil ranges from neutral to slightly alkaline. The organic carbon content in soils falls in very less category. The nitrogen content in the soils falls in very less category. The phosphorus content in the soils is medium to an average sufficient category. The potassium content in the soils falls in very less to less category.

3.1.7 *Noise Level Survey*

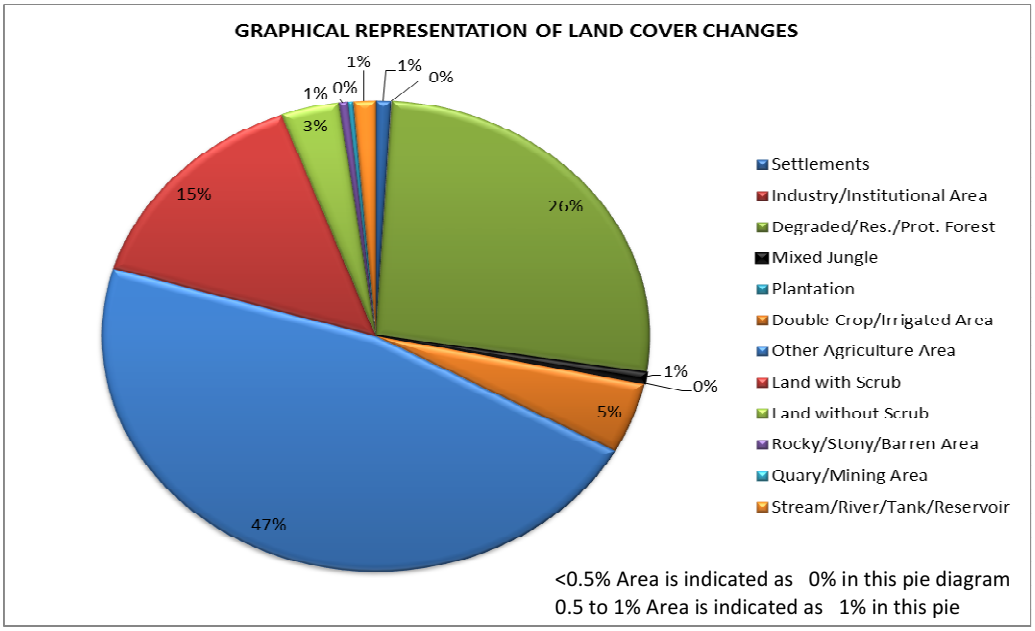
Ambient noise levels in the study area were monitored at six locations. The day time and night time noise levels at all the locations are observed to be well within the NAAQ standards prescribed by the Central Pollution Control Board.

3.1.8 *Flora and Fauna Studies*

The forest of the area can be included under teak-bearing forest, since more than 80% of the forests belong to this type. There is no national park, wildlife sanctuary, biosphere reserves except Reserve Forest and Protected forest within 10 km radius around the project site.

3.1.9 *Land Use*

Land use pattern of the project area and 10 km around was studied using remote sensing satellite imageries and details furnished below:-



Land use of the project area is (459.62 ha.) has been tabulated as under:

TABLE 5 PRESENT LAND USE (IN HA)

Sr. No	Land use category	Area (Ha)	Area (sq km)	Percentage (%)
1	**Agriculture Land**			
	Double Crop/Irrigated Area	24.47	0.24	5.32
	Other Agriculture Area	267.02	2.67	58.10
2	**Water bodies**			
	Stream/Reservoir	3.75	0.04	0.82
3	**Forest**			
	Degraded/Res./Prot. Forest	70.20	0.70	15.27
4	**Waste Land**			
	Land with Scrub	56.16	0.56	12.22
	Land without Scrub	38.02	0.38	8.27
	Total	**459.62**	**4.59**	**100**

TABLE 6 PROPOSED LAND USE DURING MINING (IN HA)

Sl. No	Particular	Non Forest	Forest	Total
1	Mine excavation	245.06	64.62	309.68
2	External Overburden (A+B)	99.17	0.00	99.17
3	Barrier along mine boundary	3.83	2.67	6.50
4	Surface infrastructure	11.73	0.00	11.73
5	Green Belt	24.43	3.06	27.49
6	Diversion of Road	5.11	0.00	5.11
	Total	**389.32**	**70.35**	**459.68**

4.0 DEMOGRAPHY AND SOCIO-ECONOMICS

Study area encompasses villages from Zari-Jamani Tehsil of Yavatmal District of Maharashtra.

The significant observations are as follows:

- The economy of these villages is purely agriculture based.
- 85 % of the population is engaged in agriculture and its allied activities, 10% is in service class, whereas 05 % is working in the nearby CIL mines as labourers with the contractors.
- In the study area in total 12 nos. of mines like limestone, coal, dolomite, iron are located. In addition to this various seasonal small scale industries like Ginning and pressing units are subsisted within the study area.
- The area is not industrially sound and therefore the population working in manufacturing and process industries is marginal.
- Agriculture plays an important role in their livelihood for the population in these villages.

5.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITITGATION MEASURES

5.1.1 Impact on Topography and Drainage

As the proposed coal mine will be an opencast mine, there will be slight change in the topography.

5.1.2 Impact on Land Use

The Marki-Zari-Jamani-Adkoli coal block lease shall be worked by opencast mining, upto a depth of 190m.A total of 459.68 ha of land has been envisaged for the mining operations. However, the proposal envisages two quarry system of working by which about 86% internal dumping is programmed , thereby reducing the impact on land use to minimal. Further, due protective measures as required by CMR & DGMS shall be strictly followed at the time of work.

Thus, post mining out of total project area of 459.68 Ha, 314.63 Ha will be planted, and about 125.60 Ha will be developed as water body. In the post mining stage after reclamation of part of infrastructural area, the area of internal dumps etc, the final figure for land reclamation and restoration for this opencast project will work out as shown in Table below.

TABLE 7
PROPOSED POST MINING LAND USES (FIGURES IN HA)

Proposed Mining uses			Proposed Post Mining uses				
Sl. No	**Particular of uses**	**Area in ha**	**Plantation**	**Water body**	**Public use**	**Agriculture Uses**	**Area**
1	Mine excavation	309.68	181.47	125.60	2.61	-	309.68
2	External Overburden	99.17	99.17	-	-	-	99.17
3	Barrier along mine boundary	6.50	6.50	-	-	-	6.50
4	Surface infrastructure	11.73	-	-	2.73	9	11.73
5	Green Belt	27.49	27.49	-	-	-	27.49
6	Diversion of Road	5.11	-	-	5.11	-	5.11
	Total	**459.68**	**314.63**	**125.60**	**10.45**	**9**	**459.68**

5.1.3 Impact on Topsoil

As the proposed mining project is opencast, topsoil will be disturbed due to excavation activities, but the same shall kept separately for utilization in future for plantation.

5.1.4 Impact on Air Quality

The source of emissions from the proposed mining and operations will be from Waste dumping and coal transport activities. The associated activities like wet drilling and controlled blasting will confine emissions to within the mine area.

5.1.5 Impact on Water Regime

There will be hardly any impact of mining on the surface water regime. Mining is a process which does not require water. Conversely it pumps out the water and discharges which in effect helps local people and recharge of ground water table. Nala in the region is seasonal which remains dry in the summer season.

5.1.6 Impact on Noise Levels

With the mining operations, deployment of machinery, drilling and blasting of mine development, excavation and transportation are expected to generate the noise levels. Development of greenbelt along the periphery of the mine site is expected to act as an effective barrier against propagation of sound waves towards the nearby human settlements.

5.1.7 Impact on Socio Economic Aspects

The Socio-economic studies was carried out by Multidisciplinary team of VIKALP a

NGO from Nagpur which has helped us to understand the prevailing socio-economic pattern of the people living in Adkoli, Paunar and Ganeshpur khurd Villages. There is no resettlement involved in the project. Rehabilitation of land losers will be done as per the Company's Policy by adequate compensation to the PAP's. The area is backward and people in the area are migrating to other places in search of job opportunities. The proposed mine will provide direct and indirect job opportunities for about 675 persons, which will help to raise the standard of living of the people.

5.1.8 Impact on Flora and Fauna

Though the proposed mining project is an opencast mine, flora and fauna will be affected to a marginal extent only. Adequate measures will be taken by development of Greenbelt in an around ML area.

6.0 ENVIRONMENTAL MONITORING PROGRAMME

The Environmental monitoring for the proposed mining and operations will be conducted in line with the existing guidelines of MoEF for the following:

- Air quality;
- Water and wastewater quality;
- Noise levels;
- Soil quality; and
- Greenbelt development.

7.0 ADMINISTRATIVE ASPECTS

Environmental Management Cell will be headed by the General Manager of mine and will constitute Manager (Mines), Environmental Engineer, Scientists and supervisor.

8.0 ADDITIONAL STUDIES

The following additional studies/activities have been carried out for Marki-Zari-Jamani-Adkoli opencast coal mine and on different aspects:

- The public hearing will be conducted in compliance to EIA notification and the public hearing points raised and commitment of the project proponent will be incorporated;
- A detailed exploration & hydrogeological study for the Marki-Zari-Jamani-Adkoli coal Block has been carried out and details shall be furnished in the final EIA/EMP.
- Risk assessment studies have been carried out including preparation of disaster management plan;

- Occupational health and safety studies have been conducted and a necessary plan prepared.

9.0 PROJECT BENEFITS

9.1.1 Improvement in the Physical Infrastructure

The basic requirement of the community needs will be strengthened by extending health care and educational facilities developed in the community, besides providing drinking water to the villages and building/strengthening of existing roads in the area. Medical facilities will also be available in the form of dispensary at the mine.

9.1.2 Improvement in the Social Infrastructure

- Generation of employment and improved standard of living;
- Establishment of small and medium scale engineering ancillaries;
- Increased revenue to the State by way of royalty, taxes and duties; and
- Superior communication and transport facilities etc.

9.1.3 Employment Potential

The impact of proposed mining on the economic aspects can be clearly observed. The proposed mining activities will provide employment to persons of different skills. The land losers will be given preference for employment subject to their fulfilling the educational qualifications and Company's eligibility criteria.

10.0 ENVIRONMENTAL MANAGEMENT PLAN

10.1.1 Institutional Arrangements for Environment Protection and Conservation

10.1.2 Air Pollution Management

- Regular maintenance of vehicles and machinery shall be carried out in order to control emissions;
- Greenbelt development shall be taken up all along the OB dump;
- Dust respirators will be provided to workmen working in dusty environment;
- Good housekeeping and proper maintenance shall be practiced which will help in controlling air pollution.

10.1.3 *Water Quality Management*

The following conservation measures will be adopted for this project:-

(a) Reuse of domestic effluent will be made for gardening, cultivation of land etc
(b) Roof top rain water harvesting structures will be made in the service buildings at mine site

10.1.4 Noise and Vibration

- Surrounding / Concealment of noise generating machinery with artificial, non-permanent arrangement like noise isolative structure and acoustic barriers;
- Provision of insulating caps and silencer at the exit of noise source on the machinery for effective attenuation;
- Trees plantation in and around the mine area to intercept and deflect noise transmission and to maintain effective attenuation; and
- Working personnel shall be provided and made to wear protective ear muffs/ ear plugs and noise helmets etc. as per statutory requirements and all Statutory Guidelines shall be followed.

10.1.5 Ground Vibration due to blasting

(a) Drilling parameters like depth and spacing shall be properly designed for an optimal blast with minimum blast induced ground vibration;
(b) Maximum Charge per Delay will be optimized in order to minimize Ground vibrations and to get desired fragmentation;
(c) If required, more number of delays shall be used in the round to reduce charge per delay;
(d) Delay detonator will also be used to maintain specified charge weight per delay for safe and efficient blasting operations as recommended by CMRI Dhanbad; and vibration will be limited to DGMS circular No. DGMS(Tech.)Circular No. 7 of 1997 Dated 29.08.1997 and monitored regularly.
(e) Effective stemming shall be done.

10.1.6 *Afforestation Programme and Conservation Strategies for Flora*

MSMC proposed to develop around 314.63 ha of land with 1250 saplings per hectare under greenbelt development programme in progressive manner during the life of the project.

10.1.7 *Budgetary Provision for Environmental Measures*

The total cost of the project is Rs. 300 Crores. An adequate budgetary provision has been made for implementation of Environmental Management Plan as detailed below:-.

11.0 ENVIRONMENTAL COST PROJECTION

a) Capital Requirement for Environmental Protection Measures:

The following provisions for environmental pollution control measures have been proposed in Marki-Zari-Jamani-Adkoli OC Project Report:-

Sr. No.	Particulars	Proposed Cost (Rs. in Lakhs)	
		Capital	Recurring (annual)
1	Dust suppression	30	7
2	Water quality monitoring & management (Sedimentation tank, WETP, STP, etc.)	60	12
3	Air quality and noise monitoring	10	4
4.	Land use mapping by Satellite Imagery/Other Specific Studies	20	2
4	Greenbelt / Plantation	30	10
5	Reclamation/Diversion of Nala and Road	200	15
	Total	**350**	**50**

b) In addition Rs. 5/ton (every year) of coal under revenue head has been kept to cater for

- Plantation
- Env. Monitoring / auditing
- Social Development
- Misc. pollution control measures.
- Compliance for statutory obligations like Consent fee, Water Cess payment etc.

It is felt that the above provisions are adequate to handle the existing pollution load. However, if need arises, necessary action along with provision of fund shall be taken accordingly.

12.0 CORPORATE SOCIAL RESPONSIBILITY

Being a corporate citizen in the company has the responsibility of contributing to the welfare of the society. in which it operates. The company will organise various awareness programmes for its employee and the general public of the area where it operates to ensure a better, sustainable way of life for the weaker sections of society. An adequate budgetary provision of Rs 410 lakhs as capital cost and Rs. 5/Ton has been kept under Revenue head/annum, for implementation of CSR activities.

12.1.1 Resettlement & Rehabilitation Programme

No resettlement is envisaged in this project. Rehabilitation of the land losers will be undertaken by the Company by way of payment of compensation for land acquired. In addition to this preference for employment shall be given to the land losers subject to their fulfilling the eligibility criteria of the Company wherever required in the said project. Entrepreneurship development programmes shall be organized by the Company for the PAP's to enable them to enhance their socio-economic status.

12.1.2 Mine Closure Plan

The mine closure plan of Marki-Zari-Jamani-Adkoli block has been prepared and approved by Ministry of Coal and prepared as per the MOC guidelines in vogue. Necessary activities for Mine Closure shall be carried out as per prevalent legislation and rules at that time. The necessary financial provision for this has been kept in the report.

13.0 SUMMARY & CONCLUSION

The proposed opencast coal mine project will have less impact on the local environment. With the effective implementation of the environmental protection measures as suggested in the EIA-EMP report and as may be recommended by MoEF, CPCB and State Pollution Control Board, the project will comply with environmental regulations & standards. In view of the above, Public Hearing for proposed Marki-Zari-Jamani-Adkoli OC project, Tahsil Zari-Jamani, Dist. – Yavatmal of Maharashtra State for production capacity of 1.00 MTPA with land area of 459.68 ha may be conducted as per EIA Notification 2006 based on the attached Executive Summary both in English and in Marathi along with Draft EIA-EMP prepared as per TOR dated 23.03.2012.