EXECUTIVE SUMMARY

1.0 INTRODUCTION

M/s JSW Group, the largest steel producer in India and operates 10 MTPA steel plant at Vijayanagar, Karnataka. JSW Group owns and operates JSW ISPAT Steel Limited with 3.3 MTPA steel plant at Dolvi, Maharashtra after taking over Ispat Industries Ltd. which is now known as JSW ISPAT Steel Ltd. Mine lease for iron ore mining was recommended for a period of 20 years over an area of 751.04 Ha in Damkodwadvi village, Etapalli Tehsil, Gadchiroli district, Maharashtra by the office of the Ministry of Mines, Govt. of India vide letter No. 5/46/2011-M.IV dated 18.05.2012 in favour of M/s Ispat Industries Ltd. The Mining Plan for the project is submitted to IBM for approval.

1.1 Aim of The Project

The JSW Ispat Steel Limited intends to produce 5.5 MTPA (Maximum Rated Capacity) of Iron Ore from 751.04 Ha mine lease area. Crushing & Screening plant (3 x 250 TPH) will be installed in the mine lease area.

SALIENT FEATURES OF THE PROJECT

District & State	Gadchiroli & Maharashtra		
Taluka	Etapalli		
Village	Damkodwadvi village, Gatta Forest range		
Mine Lease Area	751.04 Ha		
Type of land	Forest Land		
Mining Lease Period	20 years i.e. upto 2032.		
Category	A		
Production	5.5 MTPA of Iron Ore Production Crushing & Screening (3 x 250 TPH)		
Anticipated Life of Mine	20 years (may increase after future exploration)		
Cost of the project	Rs. 51 Crores		
Geographical Co-ordinates	**Corner**	**Latitude (N)**	**Longitude (E)**
	A	19° 38’ 29.1”	80° 35’ 51.6”
	B	19° 39’ 41.2”	80° 37’ 34.7”
	C	19° 39’ 29.3”	80° 38’ 09.7”
	D	19° 39’ 03.0”	80° 38’ 03.7”
	E	19° 37’ 52.8”	80° 36’ 53.2”
	F	19° 37’ 37.8”	80° 36’ 14.8”
	G	19° 37’ 42.9”	80° 36’ 00.5”
Forest	Gatta Forest Range		
Toposheet No	65 A/10		
Road Connectivity	Approachable from 1.5 km forest road which is connected with Basewada.		
Rail Connectivity	Ballarshah railway station (180 km).		

Elevation	305 m AMSL to 616 m AMSL
Total Reserves	Geological Reserves: 97.34 Million tonnes Mineable reserves : 91.61 Million tonnes
Archaeological/Historical/Ancient Monuments within 10 km area	Nil
Rivers/ streams/ lakes	Kodri River : 4 km East Pushkoti river: 3 km West There are number of seasonal streams in the ML area and in study area.
Names and distance of the national park, sanctuary Biosphere reserve, Tiger Reserve, Elephant reserve, Forest (RF/PF/Unclassified)	The Core and Buffer zones falls in Gatta Forest Range under Bhamragarh Forest Division, Gadchiroli, Maharashtra.

2.0 PROJECT DESCRIPTION

2.1 Local Geology

Rock formations ranging from Archean to quaternary are exposed in different parts of Gadchiroli District. The geological succession of Gadchiroli District is presented as follows :

Regional Stratigraphy:

Age	Group
Quaternary	Alluvium
Jurassic	Gondwana Super Group
Permian to Triassic	
Meso-proterozoic	Pakhal Super Group
Palaeo to Meso-proterozoic	Khairagrah Group
	Sakoli
	Abujmar Group
	Nandgaon Group
Palaeo Proterozoic	Bailadela Group
Archaean to Palaeoproterozoic	Amgaon Gnessic Complex
Archean	Bengpal
	Eastern Ghat Group

2.2 Topography

The mine area comprises of chain of small alternate linear hillocks in NE – SW direction, form a part of protected forest area of Gatta forest range under Bhamragarh Forest Division in Gadchiroli District. The area is approachable through 1.5 km forest road from Basewada. The highest and lowest elevations are 616 m and 305 m above MSL. Only forest road passes through the Centre of the block leads to Matwarsi in the South and Murwada in the North.

The study area is highly undulating with presence of a number of hillocks and valleys between them.

2.3 Drainage Pattern

There is no perennial source of water within the block. However, a major River Paralkot / Kodri run 4.0 km East of the ML area towards South ultimately joining River Wainganga. The river Paralkot / Kodri is tributary of Wainganga River. Number of seasonal streams drain through the trellis drainage pattern within the mining block, drain from West to East to join River Kodri. Pushkoti nadi flows about 3 km west of the ML area.

2.4 Mineable Reserves and Life of Mine

A maximum target production of 5.5 MTPA shall be achieved at the end of first five year mining period by increasing the production from 1.0 MTPA to 5.5 MTPA. However, the target may be reviewed and revised on getting the additional subsurface data by exploration proposed during the mining period.

After the first five year production the balance mineable will be 77.10 Mil. T., so at the rate of 5.5 MTPA of maximum production, these reserves will last for 15 years. Hence the anticipated life of mine will be 5 + 15 years. The life of mine may increase after future exploration.

2.5 Proposed Method of Mining

It is proposed to operate mine by opencast mechanized method by using HEMM, wheel loaders, wagon drill, dumpers / trucks etc. systematic benches are made and bench height and width shall be maintained as 8.0 m and 10.0 m respectively. Slope of the benches and ultimate pit slope will be maintained at 60° and 45°from the horizontal respectively to keep the pit position safe for long period. Mining is done by knocking off the top benches first. The ROM ore will be fed to the primary crushers for further processing. The associated waste rock will be stacked in the external dumps for further back filling.

The sequences of mining operations include are;

a) Removal of soil by dozing and stacked separately for the purpose of afforestation.
b) Deep hole drilling by DTH operated on DDC (Diesel Driven Compressor)
c) Charging the blast holes with permitted explosives and ANFO (Ammonium Nitrate and Fuel Oil Mixture).
d) Blasting the holes.
e) Haulage of ROM to the crusher / screening plant
f) Removal of OB/ Waste and dumping in the dump yard.

Deep hole drilling operations is carried out by using sophisticated drill machines. The scientific approach i.e. control blasting technique is used for blasting.

Transport from mine head to the destination:

The ROM so generated at the mining will be transported to crushing and screening plant located within the mining area by 30 tons capacity dumpers. The conveyor belt/aerial ropeways are proposed to use for ore transportation up to loading station at the foot hill. The finished product (lumps & fines) are transported to the nearest railhead, Ballarshah located about 180 kms from the mine lease area. The 16 tons tippers are used for the purpose. From Ballarshah to Dolvi where JSW ISPAT Steel Ltd., plant is located, the ore is transported by rail.

Year – wise production / development for five years:

Proposed development and production schedule during the mining plan period is given in Table below:

Year	Production (tonne)	Waste Rock (tonne)	Ore to OB Ratio
2013-2014	1,001,923	50,891	1 : 0.05
2014-2015	1,500,792	79,552	1 : 0.05
2015-2016	2,501,991	361,479	1 : 0.14
2016-2017	4,001,543	568,442	1 : 0.14
2017-2018	5,500,458	866,856	1 : 0.16
Total	**14,506,707**	**1,927,220**	**1 : 0.13**

2.6 Mineral Processing

Crushing and Screening

The quality of iron ore in Damkodwadvi Iron Ore Mine is good and usually having overall average grade of 62 – 66 % Fe. The ore produced in the mine will be sized and separated in the proposed screening plants. The ROM shall be separated in different sizes after crushing and screening.

The ROM will be separated into +10mm and – 10mm size by screening. +10mm will be further crushed in the crusher and set to crush at 30mm or 40mm depending upon the requirement of the plant. Accordingly it is classified as calibrated ore and fines respectively. Thus lumps and fine ores will be bifurcated. Entire process will be done on dry circuit only.

2.7 Use of Mineral

M/s JSW ISPAT STEEL LTD. has a steel plant located at Dolvi with a capacity of 3.6 MTPA. The M. L. was applied as a captive mine to feed the ore from this mine to JSW Steel plant located at Dolvi. Therefore entire ore produced from this lease will be consumed in the steel plant.

2.8 Water Requirement

About 543 KLD of water is required for dust suppression, plantation, drinking and domestic use and for workshop in the mine. Water will be sourced from Kodri river for use in mine and drinking water will be provided from ground water obtained through

borewell. Necessary permission for drawl of water from Kodri river will be obtained from State Irrigation Department.

TABLE: DAILY WATER REQUIREMENT IN THE MINE

Purpose	Quantity Required m^3/day
Dust suppression	495
Domestic Use	8
Afforestation	20
Workshop	20
Total	**543**

2.9 Employment Potential

Managerial, supervisory, skilled / semiskilled/ unskilled types of persons are required to carry out mining activities. The employees required for the project are 172 no.

3.0 DESCRIPTION OF THE ENVIRONMENT, ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

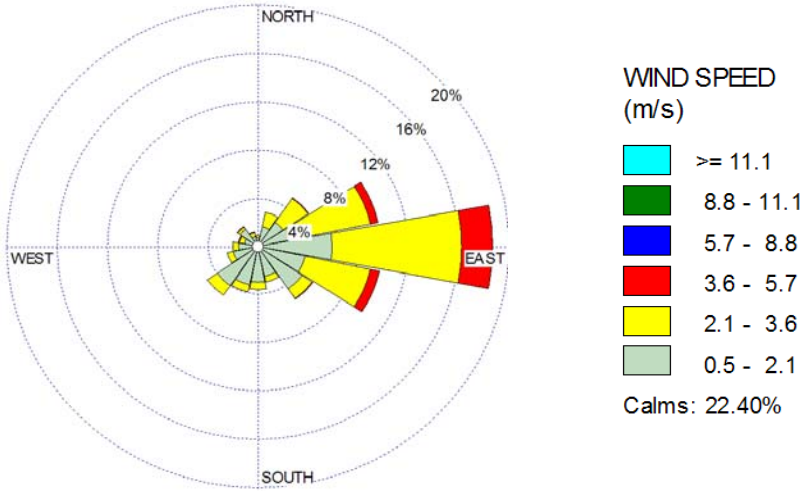
Baseline Environmental Study was carried out in an area of 10 km radius from the mine lease boundary.

Study period: Post Monsoon Season 2012 (October – December 2011)

SUMMARY OF MONITORED MICRO-METEOROLOGICAL DATA

S.NO	PARAMETERS	DATA
1	Maximum temperature (°C)	32.7
2	Minimum temperature (°C)	11.4
3	Maximum Relative Humidity (%)	78.6
4	Minimum Relative Humidity (%)	38.2
5	Predominant wind direction	From E
6	Average Wind Speed (m/s)	0.5

Wind Rose Diagram (Post Monsoon Season 2012)



3.1 Air Environment

Baseline Ambient Air Quality was monitored at 8 locations, 1 in core zone and 7 in buffer zone. The summary of air quality is as follows:

SUMMARY OF AMBIENT AIR QUALITY (MAXIMUM VALUES)

LOCATION	PM_{10}, µg/m³	$PM_{2.5}$ µg/m³	SO_2 µg/m³	NO_X, µg/m³	CO µg/m³
Mine Lease Area	44.8	14.9	8.0	11.4	225
W of Mine Lease Area	42.9	18.5	10.0	13.8	216
Koinduri village	51.5	17.5	9.3	13.3	215
Basewada village	47.4	18.1	10.1	12.9	202
Wadvi village	36.3	13.5	7.0	9.8	208
Tumarikadi village	35.3	12.0	8.4	10.9	244
Murwada village	47.1	17.3	10.1	13.0	222
Kodri Village	36.4	13.8	7.0	10.0	247
NAAQ Standards - 2009	**100**	**60**	**80**	**80**	**2000**

Existing ambient air quality was observed to be well within the permissible limits at all the monitoring locations.

3.1.1 Anticipated Impacts – Pm_{10}

Impacts on ambient air quality due to the proposed mining and associated activities were predicted using ISC AERMOD software.

OVERALL PREDICTED SCENARIO FOR AMBIENT AIR QUALITY

(UNITS: µg/m³)

LOCATION OF MONITORING STATIONS	BACK GROUND PM10 CONCENTRATION (Max values)	PREDICTED INCREMENTAL CONCENTRATION	RESULTANT CONCENTRATION
Mine Lease Area	44.8	6.252	51.052
W of Mine Lease Area	42.9	<0.950	43.85
Koinduri village	51.5	<0.950	52.45
Basewada village	47.4	<0.950	48.35
Wadvi village	36.3	<0.950	37.25
Tumarikadi village	35.3	<0.950	36.25
Murwada village	47.1	<0.950	48.05
Kodri Village	36.4	<0.950	37.35

3.1.2 Anticipated Impacts on Traffic Density

The mineral from proposed Damkodwadvi mine will be transported through 16 tonne capacity tippers to Balharshah Railway station located about 180 km from the ML area and from there, the iron ore will be transported by rail to Dolvi (Pen Taluka, Maharashtra) where JSW ISPAT Steel Ltd., plant is located. Thus a considerable increase in traffic density of the area will take place. The existing road network is sufficient to cater this increase in traffic density. However, the roads will have to be strengthened to sustain the additional traffic load. There is negligible traffic through the forest road at present.

3.1.3 Proposed Air Pollution Control Measures

- Regular sprinkling of water at the active mine faces, blasting sites and also on the haulage roads.
- Practice of controlled blasting using delay detonators
- Regular maintenance of the transport vehicles and mineral transport roads
- Provision of dust masks to the workers
- Avoiding overloading of tippers and covering of loaded tippers with tarpaulins during ore transportation
- Maintenance of 7.5 m barrier zone all along the mine lease boundary and green belt in the barrier zone
- Periodical monitoring of air quality to take steps to control the pollutants

3.1.4 Proposed Control Measures For Traffic Density

- Study will be carried out to lay conveyor belt / aerial ropeway for mineral transport from mine head to nearest State Highway. Possibility of setting up of railway siding nearby the mine lease area will also be evaluated and the best feasible alternative will be implemented in the mine.
- Prior permission will be obtained from the forest department for mineral transportation through forest road.
- Over-speeding and overloading will be strictly prohibited.
- Mineral transportation will be carried out in trucks covered with tarpaulin.
- Regular preventive maintenance of the transportation vehicles will be carried out to control emissions.
- Silencers of the transportation vehicles will be maintained in good conditions to avoid high noise generation.
- Speed breakers, Foot over bridge, traffic signals, foot paths, etc will be provided at strategic locations for the safety of the pedestrians.
- Regular water sprinkling will be carried out on mineral transportation roads nearby habitations outside the mine lease area.

3.2 Noise Environment

The ambient noise levels were measured at 8 locations (same as AAQ stations). The results obtained are as follows.

NOISE LEVELS DURING STUDY PERIOD [UNITS: dB (A)]

Location Code	N1	N2	N3	N4	N5	N6	N7	N8	Noise standards
Min	40.1	41.5	40	41.7	40.7	41.6	40.3	41.2	**-**
Max	46	47.2	46.2	47.6	45.7	47.8	46.9	48.2	**-**
Ld	44.2	45	44.3	45.2	44.1	45.4	44.3	45	**55**
Ln	42.1	42.8	42.3	43	42.2	43.3	42.1	42.7	**45**

It is observed that the noise values recorded were well within the prescribed Ambient Noise Level Standards with respect to Noise.

3.2.1 Impacts on Noise Level

The main sources of noise in the mine are classified as follows:

- Mobile Mining Equipment
- Transportation Vehicles
- Drilling and blasting
- Crushers & screens

'DHWANI' Noise Modelling Software developed by NEERI and approved by CPCB was used to predict the ambient noise levels around the mine lease boundary. The resultant ambient noise levels at the boundary of the mine lease was predicted to be less than 50 dB(A) which further reduces to less than 40 dB(A) at the nearby habitations.

3.2.2 Proposed Noise Control Measures

- Maintenance of green belt all around the working areas
- Regular maintenance and tuning of mine machinery
- Provision of PPE (Personal Protective Equipment) to the personnel who are exposed continuously to the high noise zone/ operation area
- Display of sign boards at high noise generation zones
- Limiting the speed of haulage vehicles / tippers
- Use of mufflers, silencers in exhausts
- Carrying out the mining and mineral transport activities during day time only.

3.3 Water Environment

There is no perennial source of water within the block. However, a major River Paralkot / Kodri run 4.0 km East of the ML area towards South ultimately joining River Wainganga. Number of seasonal streams drain through the trellis drainage pattern within the mining block, drain from West to East to join River Kodri. Pushkoti nadi flows about 3 km west of the ML area.

Two surface water sample and six ground water samples were collected from the nearby villages. Physico-chemical analysis of water shows that the water quality is within the prescribed standards.

SUMMARY OF WATER QUALITY

PARAMETER	UNIT	SW1	SW2	GW 1	GW 2	GW 3	GW 4	GW 5	GW6
pH		6.5	6.3	7.24	7.84	7.52	7.32	7.91	7.62
Turbidity	NTU	3.5	<2.0	8	7	8	5	6	6
TDS	mg/l	112	98	562	842	661	910	738	746
Alkalinity as $CaCO_3$	mg/l	68	59	221	425	372	312	365	342
Total Hardness	mg/l	72	61	412	332	345	310	424	353
Nitrates NO_3	mg/l	<1	<1	51	51	45	65	66	51
Chlorides as Cl	mg/l	8	76.9	284	316	268	304	284	294
Sulphates as $SO4^{2-}$	mg/l	4	4.1	225	252	186	168	214	204
Sodium as Na.	mg/l	6	3.8	71	89	109	85	106	96
Potassium as K	mg/l	3	2	1.42	1.14	1.41	1.5	1.28	1.32
Calcium as Ca	mg/l	18.4	14.3	74	78	84	74	91	86
Magnesium as Mg	mg/l	4.2	3.9	45	42	38	34	55	42
Iron as Fe	mg/l	0.1	0.1	0.39	0.31	0.29	0.32	0.45	0.45
Fluoride as F	mg/l	0.1	0.2	1.01	0.54	0.74	0.91	1.01	0.82
Total Coliform	No/ 100ml	542	615	Absent	Absent	Absent	Absent	Absent	Absent
E.coliform	No/10 0ml	4	6	-	-	-	-	-	-

3.3.1 Impact on Water Environment

Surface Water Resources

There is no perennial surface water body within the mine lease area. Surface run-off from the mine lease area during monsoon flows along the water cut channels and slopes of the hillock through some water cut channels. The change in topography due to excavation is not likely to have any serious impact on the overall hydrography of the area. However, the drainage pattern of the mine lease area will be altered.

Impact on Ground Water Resources

The topography of the area suggests that the area comprises of hillocks with a minimum elevation of 305 m to maximum elevation 620 m above MSL. The mine pits are expected to attain an ultimate pit depth of upto 372 m AMSL (based on conceptual sections). Since the mine workings will remain on the hillock, the ground water table intersection is not envisaged.

Impact on Water Quality

There is no process effluent discharge proposed from the mine lease area. The effluent from workshop will be treated in oil and grease trap and will be reused. Domestic effluent will be discharged in septic tank and soak pit system. There is no other effluent envisaged from the mine lease area. The mineral as well as associated waste does not

contain any toxic element in it. The only source of water pollution from the mine lease area is surface run-off from the mine working area carrying silt along with it. This may cause the siltation of the surface water resources.

3.3.2 Mitigation Measures for Water Environment

- Construction of garland drains around the slope to collect and divert the surface run-off away from the mining and dumping area
- Construction of retention walls at the foot of the surface dumps
- Fast growing grass, small plants and bushes will be grown on the inactive/ mature OB dumps and Top soil heaps to reduce siltation
- Provision of check dams and gully checks, series of settling tanks in the lower portions of the mine lease.
- Channelising surface run-off from the mine lease area through garland drains to settling ponds and only properly settled water will be discharged outside the mine lease area.
- Provision of oil and grease trap in the workshop for treating workshop effluent and reuse of the treated water.
- Provision of septic tank and soak pit system for discharge of domestic effluent.

3.4 Land Environment

PRESENT AND PROPOSED LAND UTILIZATION PATTERN (Area in Ha)

Sr. No.	Particulars	Present Area	Area at the end of	
			Mining Plan Period	Conceptual stage
1	Area for mining	0.00	27.25	211.12
2	Area for float ore	0.00	-	122.40
3	Backfilling	0.00	-	29.11
4	Overburden dump including garland drain and retaining wall	0.00	5.23	21.57
5	Infrastructure (Buildings & Workshop)	0.00	0.66	2.95
6	Top soil storage	0.00	-	0.30
7	Temporary Mineral Storage	0.00	2.90	-
8	Roads	5.37	5.37	8.50
9	Green Belt	0.00	4.71	8.77
10	Area for Sub-grade Mineral Stack	0.00	1.11	4.93
11	Crushing / screening plant	0.00	1.01	1.01
12	Afforestation	0.00	-	105.03
13	Checkdam and Gully Check	0.00	0.71	0.26
14	Area for retaining walls & Gully plugs	0.00	-	1.78
15	Magazine and safety zone	0.00	1.00	1.00
16	Area to be explored (in future)	745.67	701.09	232.31
	Total	**751.04**	**751.04**	**751.04**

LAND USE PATTERN OF STUDY AREA (AS PER CENSUS 2001)

S.NO	LAND USE	AREA (Ha)	PERCENTAGE
1	Forest Land	29762.55	90.40
2	Irrigated Land	164.04	0.50
3	Un-irrigated Land	1991.96	6.05
4	Cultivable Waste Land	442.78	1.35
5	Area not Available For Cultivation	560.78	1.70
	Total Area	**32922.11**	**100.00**

3.4.1 Impacts on Land Environment

At present, the mine lease area consists of protected forest land. The existing land use pattern will be altered due to the proposed mining and associated activities. The existing land use in the mine lease area will change into mined out areas, surface dumps, mine roads, infrastructure area, etc. There will be no change in the land use pattern outside the lease area.

3.4.2 Proposed Land Degradation Mitigation Measures

- Backfilling of the mined out pits, wherever possible
- Plantation on the inactive overburden waste dumps and backfilled areas
- Construction of check dams and gully checks to prevent soil erosion during the monsoon season
- Green belt maintenance along the boundary of the lease area
- Plantation around the infrastructure facilities within the mine lease area
- Afforestation of the worked out portions of the pits simultaneously during mining.

3.5 Soil Quality

Soil samples were collected from 6 locations from the core and buffer zone to evaluate the soil quality in the study area. All the samples are showing moderately fertile nature.

3.6 Biological Environment

The ML area comprises of Gatta protected forest area. Most of the study area is also covered with forest land. More than 90% of the study area is covered by forest land. The animals commonly observed in these forest area includes Monkey, Deer, Civet, Common Langur, Flying squirrel, fox, Hare, Jungle Cat, Mongoose, pangolin, porcupine, Sambhar, Wild Boar, Wild Dog, etc. There are some endangered animals like Bear, Leopard, tiger, bison, four horned antelope, wolf etc observed in these forest ranges.

3.6.1 Impact on Biological Environment

Following are the impacts on the biological environment due to mining activities:

- Loss of habitat on the mine site and surrounding areas
- Disturbance to wildlife due to mining operations
- Disturbance to wildlife due to haulage of mined materials

3.6.2 Proposed Mitigating Measures

The mined out areas will be reclaimed with dense poly-culture plantation with the local species. Efforts will be made to maintain the mine lease area vegetation as per the previous scenario. The settling ponds for rainwater harvesting will be used as water reservoir that will increase the water availability for the built of soil moisture and vegetative growth on the plateau. The water ponds will also be available to wild animals as additional surface water resources in the area.

The mine management will take adequate Wildlife Conservation Measures, as described in the Environmental Management Plan of the project.

3.7 Socio-Economic Environment

The socio-economic condition of the people living in 17 villages falling in 10 Km radius is summarized below

(As Per Census 2001)

Villages	House Holds	Total Population	Total Literate Population	Total working Population	Total Non - workers
17	724	3912	1077	2325	1558

3.7.1 Socio- Economic Development Activities

- Provision of Medical facilities (Medical camps, Ambulance facility & free medicine supply)
- Provision of Educational Facilities
- Provision of Transportation Facilities
- Provision of Scholarship to Meritorious Children (school & college)
- Financial assistance to Religious & cultural activities
- Provision of Recreation facility
- Employment opportunities
- Drinking water facility

3.7.2 Other Socio-Economic Improvement Measures

- Maintenance of village roads
- Improvement in socio-economic status
- Vocational training to interested youth
- Up-liftment of scheduled caste / tribes and other weaker sections of society
- Need based assessment

3.8 Occupational Health and Safety Measures

- Providing a working environment that is conducive to safety & health
- The management of occupational safety & health is the prime responsibility of mine management from the executive level to the first line supervisory level
- Employee involvement and commitment in the implementation of health and safety guidelines

- Implementing safety and health management system and assessing the effectiveness through periodic audits
- Setting of safety and health objectives based on comprehensive strategic plans and measure the performance against these plans
- Monitoring the effects of mining activities on safety and health and conducting regular performance reviews
- Provision of necessary personal protective equipments
- Establishing and maintaining a system of medical surveillance for employees
- Ensuring employees at all levels receive appropriate training and are made competent to carry out their duties and responsibilities

4.0 SUMMARY - MONITORING SCHEDULE

S.NO	PARAMETERS	SCHEDULE	LOCATION
1	Air quality monitoring	24 hourly Monitoring for 4 weeks in pre, post-monsoon & winter season every year	2 in core zone 6 in buffer zone
2	Noise quality monitoring	Once in pre, post-monsoon & winter season every year	ML area and nearby villages
3	Water quality monitoring	Monitoring once in pre, post-monsoon & winter season every year Monitoring Ground Water levels & their quality in pre and post monsoon seasons	Kodri river and seasonal nallahs around the mine lease
4	Soil quality analysis	Once in a year in any season except monsoon	6 locations from the area around the mine lease and in core zone
5	Plantation 1. Year wise plantation. 2. Survival rate	Annually	Within ML area

5.0 BUDGET FOR ENVIRONMENTAL MANAGEMENT (Rs. Lakhs)

S.NO	ACTIVITY	CAPITAL COST	RECURRING COST
1	Environmental pollution control	74.47	19.00
2	Environmental monitoring	-	6.0
3	Green belt and afforestation	42.00	22.0
4	Occupational health and safety	33.50	3.50
5	Socio-economic welfare activities	19.00	16.00
6	Wild Life Conservation	15.5	12.0
7	Miscellaneous	20.25	2.5
	Total	**204.72**	**81.00**

5.1 Environmental Management Cell (EMC)

For implementation of Environment Management Plan, an Environment Management Cell will be formed under the control of the Project Manager. The EMC will be headed by an Environmental engineer/scientist with sufficient trained manpower in his charge. The responsibilities of this cell will be:

1. Implementation of pollution control measures
2. Monitoring programme implementation
3. Post-plantation care
4. To check the efficiency of pollution control measures taken
5. Any other activity as may be related to environment
6. Seeking expert's advice when needed
7. Submission of the various compliance reports to the statutory authorities like SPCB/MoEF, etc.

6.0 CONCLUSION

The mining and associated activities in Damkodwadvi Iron ore mine will lead to the sustainable development of the nearby areas. There will be development of educational, medical and infrastructural facilities in the nearby villages. The mining and allied activities will provide direct and secondary employment opportunities for local people. This will lead to the improvement of economic status of the nearby villages. The mining will also benefit the state by way of excise duty and revenue on mineral.

During the active mining period, the pollution will be controlled within permissible limits by way of adopting various control and mitigation measures. In the post mining stage, efforts will be made to restore the original land use of the mine lease area to the maximum extent. Also additional surface water resources will be developed in the form of settling ponds, garland drains, etc. These will be useful for the wild animals of the area and will also improve the aesthetics of the area in the post mining stage. Thus, the mining activities will be congenial with the environment and economy of the area.