EXECUTIVE SUMMARY
of
EIA & EMP
of
Block-VII Cudnem Mineral Block

Cudnem, Onda, Sonus- Vonvoliem villages
Bicholim & Sattari Talukas
North Goa District, Goa State

Area : 75.3004 Ha.
Proposed Production : 0.5 MTPA of Iron Ore

PROPONENT
VEDANTA LIMITED

August-2024

EIA Consultant

MINERAL ENGINEERING SERVICES

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EXECUTIVE SUMMARY

1.0 INTRODUCTION

Vedanta Limited, declared as the preferred bidder by Directorate of Mines & Geology, Government of Goa, for Block-VII Cudnem Mineral Block, located in Cudnem, Onda & Sonus- Vonvoliem villages of Bicholim & Sattari Talukas, North Goa District, Goa State. Vedanta Limited intends to obtain prior Environmental Clearance from SEIAA for the production of 0.5 MTPA of Iron Ore.

The Government of Goa, in pursuant to the Mines and Minerals (Development and Regulation) Act 1957, and the Mineral (Auction) Rules, 2015, issued notice inviting tender to commence the auction process of iron ore mineral blocks for grant of mining leases. The e-auction was conducted for the mineral blocks in accordance with the Tender Document. Vedanta Limited was declared as the preferred bidder under Rule 9(9) (iii) of auction Rules, for Block-VII Cudnem Mineral Block, located in Cudnem, Onda, Sonus- Vonvoliem villages of Bicholim & Sattari Talukas, North Goa District, Goa State.

1.2 PROJECT DESCRIPTION

The Block-VII Cudnem mineral block is located in Cudnem, Onda, Sonus- Vonvoliem villages of Bicholim & Sattari Talukas of North Goa District, Goa State, over and an area of 75.3004 Ha.

Land Details & Survey Nos	Total Mineral Block Area 75.3004 Ha., Non-Forest land : 69.9392 Ha, Forest land: 5.3612Ha Survey No's: Cudnem :- 102(P), 103(P), 104, 105, 106(P), 146(P) , 149(P), 150P 151(P), 152(P), 204(P) Onda:- 131(P), 132(P) , 134(P), 138(P), Sonus Vonvoliem villages: 38(P), 42(P) , 43(P) Road, Seasonal Nalla
Geographical Coordinates	Latitude $15^0$31'46.629" N to $15^0$32'34.809" N and longitude 74^0 01'55.486" E to 74^0 02'23.986" E.
Survey of India (SOI) Topo-sheet No	48 I/2
Reserves& Resources	8.2854 Million Tonnes
Production Capacity	0.5 MTPA
Life of the Mine	20 Years based on the present reserves & resources. The mining lease will be valid for 50 years from the date of execution of the mining lease.
Water requirement	95 KLD
Power requirement	Use of Solar energy (10 KW) and DG set (5 KVA 2 nos) for lighting, weighbridges etc
Man Power Requirement	86 Direct employment & indirect/contractual employment will be around 300

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Nearest airport	Mopa – 40 Kms
Nearest Railway Station	Karmali- 18.1 kms
Nearest Highway	SH-3, (Within Mineral Block)
Environmental Protection Cost	Capital Cost: Rs 32 lakhs Recurring Cost: Rs 156.5 Lakhs
Project Cost	Rs. 8500 lakhs

1.3 ENVIRONMENTAL SENSITIVITY

No National Park, Wildlife Sanctuary or Migratory Corridors of Fauna is present inside the Project Site. Cudnem river is about 0.23km from mineral block area. Few houses exist within Cudnem mineral block area.

Particulars	Eco-sensitive Location	Approx Aerial Distance (Km)
Sanctuary / Tiger Reserve/Elephant / any other Reserve Forest	Tiger Reserve within study area	None
	Elephant Reserve within study area	None
	Mhadei Wildlife Sanctuary	5.66
	RF Near Sonshi Village	Within the Mineral Block
	RF Near Kumar Khand	4.8
	RF Near Shiroli	8.98
	RF Near Koparde	9.00
	RF Near Morlem	4.53
	RF Near Sonus Vanoliem	1.46
	RF Near Kosumwada	8.95
	RF Near Karmalewada	9.23
Biosphere Reserve	None	-
Heritage Site	Biodiversity Heritage site Purvatali Rai Surla	2.48
Water Bodies (**Note:** There are other several Water Bodies within 10 kms buffer area)	Harvalem water fall	1.65
	Cudnem River	0.23
	Mandovi River	3.88
	Valvanti River	3.95
	Anjuem Dam	9.72
	Bicholim River	9.30
	Mhadai River	7.32
	Seasonal Nalla Near Khodginim Village	1.70
	Seasonal Nalla within the Mineral Block	Within the Mineral Block Area PP Shall maintain 50 m buffer
	Dhakul Lake	3.95
	Taleshwar Lake	3.90
	Crocodile Lake	4.71
	Mandodari Lake	5.76

	Batwadi lake	6.87
	Ajobachi talee Lake	7.84
	Banana Water fall Zarme	8.00
	Cumbarjua Canal	8.08
	Aerekere Lake	9.08
	Advoi Nalla	8.00
	Ragada River	9.6
Wet Lands	Navelim (Not Notified)	1.90
	Betal Temple Lake(Draft notified)	8.86
	Kolamwada Lake (Draft Notified)	5.50
	Vijayadurga Lake (Notified)	7.91
	Banastari	9.49
Defence Installation	None	--
Seismic Zone	III	--
Nearest Habitat	Within mineral Block	50m buffer zone will be maintained from the periphery of the nearest habitat. Mining operations will be carried out without drilling and blasting
Inter-state Boundary	Maharashtra	7.38
Archaeological monuments/	Kudnem Ancient Digambar Jain Temple	2.87
	Rock Cut Caves (Aravalem Caves)	1.91
	Maharaja Dipaji Rane's fort	4.25
	Cave of Siddhnatha	3.44
	Sanquelim Fort	3.95
	The Mosque and Tank at Tar Surla	3.88
	Juve Fort	8.50
Sensitive man made landuses & places of worships within 3km raidus from Mineral Block area (**Note:** There are several other places of Worship within 10 kms buffer area)	Ajoba Devasthan Rudreshwara Temple Kamakshi temple Shree Betal temple Scare Heart of Marry Church Upper Harvale Shri Kelbai Temple Nagnath Temple Shree Sateri Kelbai Devasthan Laxmi Narayan Temple Shree Devi Sateri Temple Shree Satyanarayan Temple Goankarwada Sateri Temple	0.051 1.52 0.92 2.88 0.095 2.41 1.84 2.29 2.39 2.68 2.20 2.90

	Satineshwara Temple Navedar Honda	0.86
	Shri Shanthadurga Temple Sonshi	0.64
Sensitive man made landuses & places of worships within 3km raidus from Mineral Block area (**Note:** There are several other places of Worship within 10 kms buffer area)	Ajoba Devasthan	0.051
	Rudreshwara Temple	1.52
	Kamakshi temple	0.92
	Shree Betal temple	2.88
	Scare Heart of Marry Church	0.095
	Upper Harvale Shri Kelbai Temple	2.41
	Nagnath Temple	1.84
	Shree Sateri Kelbai Devasthan	2.29
	Laxmi Narayan Temple	2.39
	Shree Devi Sateri Temple	2.68
	Shree Satyanaryan Temple	2.20
	Goankarwada Sateri Temple	2.90
	Satineshwara temple Navedar Honda	0.86
	Shri Shanthadurga Temple Sonshi	0.64
Coastal Regulation Zone (CRZ)	--	--
Distance from the HFL of the river in m	Cudnem River	0.23
Nearest School within 3km raidus from Mineral Block area (**Note:** There are several other schools within 10 kms buffer area)	Industrial Training Institute Honda	1.58
	Honda High School	1.63
	Govt. Primary School Sonshi	0.53
	Govt. High School Navelim	2.69
	Vividha Higher Secondary School	2.60
	Navelim High School	2.80
	Goa Institute of Management (Sanquelim)	3.10
	Govt. Primary School Phanswada	1.33
	Mahalaxmi high School	2.43
	Gopal Krishna primary School	2.48
	Govt. primary School Gavthan	2.24
Industries (**Note:** There are other several industries & iron loading Jetties, Mineral Beneficiation Plants, within 10 kms buffer area)	Vedanta Limited (Sesa Goa), Value Addition Business (VAB), Metcoke	4.3
	Jayraj Cashew Industries	2.25
	Pissurlem Industrial Estate	3.89
	Honda Industrial Estate	2.39
Mangrove	Near Mandovi River	4.02

1.4 GRANT OF TOR & BASE LINE DATA COLLECTION

The SEIAA accorded the TOR for the Project vide TOR identification No TO24B0000GA5544031N dated 22.07.2024. The Baseline Data was collected during the period from Oct to Dec 2023.

2.0 MINING METHODOLOGY

The proposal of obtaining environment clearance for 0.5 Million tonnes of Iron Ore per annum with overall overburden to ore ratio of 1: 4.51. Mining operations will be by way of mechanized opencast method without drilling & blasting, complying with all the statutory requirements using HEMM like Rippers and Dozers, shovels, dumpers, wheel loaders and tippers. Rippers and Dozers will be used for ripping of hard material and wheel loaders will be used for loading and dozers for levelling.

The Run of Mine (ROM) Iron Ore will not be subjected to dry crushing and screening. ROM will be sent to jetties owned by project proponent. The ore transportation from mine to the jetty will be carried out by tippers with the capacity of 10 Tonnes.

2.1 PRODUCTION, RESERVES AND LIFE OF MINE

The total reserves and resources of the mineral block are 8.2854 million tonnes. Based on the maximum production of 0.5 million tonnes, the life of the mine is expected to be 20 years. Life of the mine will increase, based on the outcome of the proposed exploration during the plan period.

2.2 MANPOWER, WATER & POWER REQUIREMENT

MAN POWER : The Project shall provide direct employment to about 86 people, which includes mine officials, skilled, semi-skilled and unskilled labour and about 300 people indirect/contractual employment majority of them will be from local Villages.

WATER: The Water Requirement of the Project is estimated to be maximum 95 KLD. Out of this, 10 KLD of the water is required for domestic, 10 KLD Wheel washing & 75 KLD for dust suppression & green belt.

POWER: Use of Solar energy (10 KW) and DG set (5 KVA 2 nos) for lighting, weighbridges etc

3.0 RESETTLEMENT & REHABILITATION

This proposed project has habitation within the Mineral Block Area. The 50 m safety barrier will be maintained. No Rehabilitation & Resettlement Plan is proposed.

4.0 DESCRIPTION OF THE ENVIRONMENT

The Block-VII Cudnem Mineral Block is the core zone for the present EIA study. The area encompassing 10 km radius from the boundary of the core zone has been defined as the buffer zone.

The core zone and the buffer zone together constitute the study area. The Baseline Environmental data with respect to Air, Water, Noise and Soil Quality in the study area for the present EIA study collected during Post Monsoon Season 2023. Sampling and analysis have been carried out by Environmental Laboratory (Unit of Mineral Engineering Services), Bangalore, Laboratory accredited by NABL and recognized by CPCB/MoEF&CC.

Environmental Attributes & Frequency of Sampling

Sl. no	Environ-mental Component	Sampling Locations	Samp-ling period	Sampling Parameters	Total Sampling period	Sampling Frequency
1.	Meteoro-logy	Cudnem Village	Oct to Dec-2023	Temp, Relative humidity, Rainfall, Wind speed, wind direction	3 months	Hourly
2	Ambient Air Quality	A1- Core Zone within Mineral Block A2- Navelim Phanaswadi Village A3- Cudnem Village A4- Harvalem Village A5- Onda Village A6- Dhatwada Village A7- Pissurlem Village A8- Surla Village A9 - Khodginim village	Oct to Dec-2023	PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO, O3 ,NH_3, $C_6H_6B(a)P$, Pb , As, Ni & Free silica	2 days/ week	24 hourly
3	Noise levels	N1- Harvalem Village N2- Onda village N3-Navelim-Phanaswadi village N4- Cudnem village N5- Dhatwada village N6- Vonvolim village N7-Khodginim Village N8-Core zone within Mineral Block	Oct-2023	L_{eq} (Day and Night)	Once during study period	24 Hourly
4	Surface Water Quality	SW1- Cudnem seasonal Nalla upstream SW2- Cudnem Seasonal Nalla Downstream SW3 – Seasonal Nalla Near Vonvoliem SW4- Seasonal Nalla near Khodginim village SW5- Seasonal Nalla near Navelim	Oct-2023	As per IS – IS:2296	Once during study period	Grab Sampling
	Ground	GW1 –Sali Village	Oct-	As per		

	Water Quality (HG Studies)	GW2 - Onda village GW3 – Bhuipal village GW4 – Sonshi village GW5 – Phanaswadi Village GW6- Cudnem village GW7- Pissurlem village GW8-Vonvoliem(Sonus) village GW9- Khodginim village (*All samples are from open well)	2023	IS – 10500: 2012		
5	Soil	S1 –Harvalem Village S2 –Vonvoliem village S3 –Pissurlem Village S4-Khdoginim village S5- Velguem RF S6- Goankarwada Village S7- Phanaswadi village S8–Dump Soil within Mineral Block		Physical and Chemical constituents, suitability for agricultural growth	Once during study period	Grab sampling
6	Land use	Core & Buffer Zone	Nov-2023	--	Once during study period	--
7	Ecology & Biodiversity	Core & Buffer Zone	Oct-Dec-2023	Flora & Fauna Survey	Once during study period	Quadrat method
8	Socio-Economic	10 Km Study area	Dec-2023	Socio-economic Survey	Once during study period	Random Survey

4.1 AMBIENT AIR QUALITY

For Ambient air quality 9 stations have been fixed covering all the directions, the frequency of monitoring is 2 days/ week for 3 months and the parameters covered were as per CPCB NAAQS guidelines.

The statistical analysis of Ambient Air Quality is as follows, the maximum values of SO_2, NO_2, PM_{10} & $PM_{2.5}$ in the core zone station were found to be 11, 14, 54 & 32 µg/m3 and in the Buffer zone villages the maximum values were found to be 15, 20, 58 & 38 µg/m3. All other parameters like CO, O3, NH3, Pb, As, Ni, Benzene(C6H6), & Benzo(a)Pyrene (BaP), are also sampled and results of analysis were found to be well within the limits of NAAQ's

NOISE LEVELS

For noise quality 8 stations including one station in core zone and 7 in buffer zone villages were sampled and Leq during day & night are observed. The Leq value during day time in the core zone station were found to be 45.8 dB(A) and during night time the noise levels were found to be 40.9 dB(A).

In the buffer zone villages the noise levels were found to be in the range of 39.6 to 52.5 dB(A) and during night time the noise levels were found to be in the range of 39.5 to 41.1 dB(A) . The noise levels both in the core zone and buffer zone were found to be within the limits of Noise Quality Standards for Industrial, Commercial and Residential areas.

4.3 WATER QUALITY

Water Quality Monitoring was done by grab sampling once in a season for 5 surface Water and 9 Ground Water samples. IS: 3025, APHA, & IS: 1622 standards are used for analysis. Thus, the analysis results are compared to IS standards IS: 2296 & IS: 10500:2012. The surface water quality is found within the limits prescribed. The open well samples were found to have pH slightly acidic in nature. This is possibly due to the occurrence of lateritic ore. Whereas other parameters are well within permissible limits of respective standards.

4.4 SOIL QUALITY

Soil Quality Monitoring at 8 locations including one from the Mineral Block and others from nearby village agricultural fields are collected and analyzed, during the study period for Physical Parameters and chemical parameters. They are all observed to be fit for cultivation.

4.5 LAND ENVIRONMENT

The existing major land use of study area covering 10 km radius are 3.23% of water bodies, 11.99% reserve forests, 0.63% of mangroves, 3.0% of agriculture land, 51.41% of mixed vegetation and 8.76% of Settlement area. After the ore is exhausted in the pits the broken-up land will be backfilled and will be progressively afforested and rehabilitated with local species like Cashew, Mango, Jamun, Cocum, Terminalia etc. All efforts will be made for maximum survival and growth of the plants.

4.6 BIOLOGICAL ENVIRONMENT

The Mine area is located at a distance of around 5.66 km from Mhadei wildlife Sanctuary, hence, there is very less chance of threat to theS, however, mine management could work with downstream riparian forest and assist ecological restoration as per the species suggested in the EMP document.

FLORA

Total 64 species were recorded within core area, of which 36 species trees, 15 species shrubs , and 13 species herbs & climbers recorded

FAUNA

Total 39 species were observed within the core area, of which 16 species are birds, 6 species of mammals , 8 species of reptiles, 2 species of amphibians , 6 species of butterflies & 3 dragonflies and 2 species of aquatic animals

FLORA & FAUNA IN BUFFER AREA

FLORA

Overall 79 species of trees, 20 species of shrubs, 33 species of herbs & 4 species of climbers recorded in reserve forest and riparian habitats. 3 species of plants recorded from the mangrove estuary nearby Amona & Sarmans jetty

FAUNA

Overall, 124 species were recorded from both primary observation, in case of fauna 13 species of Mammals, 16 Species of Reptiles 11 species of frogs and toads , 39 species of Birds , 11 species of butterflies, 4 species of odonta 6 species of insects and 24 aquatic species were reported from the region as per the Amended Wildlife Protection Act 2022

out of 124 fauna species 21species fall in schedule –I as per the amended Wildlife Protection Act 2022. In case of conservation of flora and fauna as suggested in the EMP, greenbelt shall be developed all along the boundary, unused areas, inactive dump slopes and roadside of core and buffer areas. There are no endangered or endemic species of flora or fauna in the core zone.

4.7 SOCIO-ECONOMIC ENVIRONMENT

There are 64 villages/towns - 54 villages and 10 census towns (CT), in the buffer zone. Out of these, 64 villages/towns, 51 villages and 10 towns are located in 4 talukas of North Goa and 3 villages in one taluka in Maharashtra. As the data pertains to large number of villages and towns in North Goa, the buffer zone is compared to North Goa District. Usually, villagers grow coconuts, cashew, or mango in the small piece of land. In the absence of mining activity agriculture and tourism are the only sources of employment. The infrastructure and amenities available in the study area denotes the economic well-being of the region.

It is observed that good infrastructure facilities are available in the project study area, which consists of education, health care, drinking water facilities, communications, transportation, etc. Due to the proposed mining activity, no significant adverse changes are visualized in the traditional way of life of the people residing in the villages in the buffer zone.

Further people residing in the nearby villages will be benefited by the direct and indirect employment opportunities created by the mining activities along with the various socio economic development activities to be taken up by company. The communication, health and education facilities will improve and thus the mining activity will be beneficial and will have a positive impact in the region.

5.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The Block-VII Cudnem Mineral Block is yet to start mining and shall operate taking all precautionary measures to reduce the impact of mining operations on Air, Water, Noise and Soil and ensuring all control measures to comply with the prescribed standards.

5.1 AIR ENVIRONMENT

The impacts on Air Environment is assessed through Aermod Modelling and results show that the cumulative impacts on the surrounding villages after commencement of mining operations will be within the permissible limits

Following measures will be undertaken to control the Air pollution/dust generation during the mining activities: -

- Continuous Water spray over the areas using water sprinklers
- Proper maintenance of machinery & equipment as per manufactures specification avoiding over loading of trucks
- 7.5m Wide green belt surrounding Mineral Block.
- 50m wide safety barrier shall be maintained from nearby habitations
- No overloading of trucks, speed restriction, all the trucks will be covered with tarpauline before going out on public road, Tail gate of tippers shall be made leak proof.
- plantation along the road side proper maintenance of machinery & equipment as per manufactures specification,
- PUC for transport vehicle, maintenance of surrounding transport.
- Wheel washing system for transportation trucks will be erected at the exit point

5.2 WATER ENVIRONMENT

The proposed mitigation measures are as under:

- Boulder walls will be provided at the foot of the dump to arrest the flow of silt.
- There are proposed garland drains of about 1523m & retaining wall of 949m around the dumps to minimize the ersosion.
- Garland drains to divert rain water to settling pond for settling of suspended solids.

- The entire surface runoff water is diverted into the mine pit and allowed to settle.
- There shall be no generation of industrial waste water from Mining Operations

Hydrogeological studies were conducted to know the impact on Ground Water table due to proposed mining activities. The report has been submitted to WRD Goa, for their approval.

5.3 NOISE ENVIRONMENT

Maximum noise is produced from the operation of earth moving machineries & movement of dumpers. No drilling and blasting operations are involved. Wide green belt shall be provided surrounding Mineral Block to attenuate noise pollution. Regular maintenance of mining equipment, machinery & all vehicles as per the manufactures recommendations to minimize the Noise generation shall be followed.

Following management measures will be adopted to control noise levels:

- Provision of acoustic cabins for operators deployed on HEMM.
- Selection of new low-noise equipment from the manufacturers failing which use of additional retrofits if available.
- Green belt developed all around the mine and haulage roads act as an acoustic barrier.

5.4 IMPACT ON LAND ENVIRONMENT

At end of life of mine, total Greenbelt/Plantation of over 15.8041 Ha will be developed by planting @ 2500 saplings/ Ha which will be beneficial to the Environment & will also create an aesthetic view.

Local Species shall be planted by mix of fruit bearing trees like Cashew, Jack fruit and forestry species.

5.5 IMPACT ON BIOLOGICAL ENVIRONMENT

As there exist schedule I species within Study area, a full-fledged biodiversity assessment study was taken up by the proponent along with wildlife conservation plan with financial outlay to assist the local forest department.

The proponent shall take mitigation measures within Mineral Block to promote immigration of wildlife through massive afforestation.

5.6 IMPACT ON SOCIO ECONOMIC ENVIRONMENT

This mine shall provide direct employment to about 86 people, which includes mine officials, skilled, semi-skilled and unskilled labour and about 300 indirect employment opportunities to locals. The mining activities help in sustainable development of this area including further development of physical & social infrastructural facilities.

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The mining activity provides revenue to the state and center in the form of taxes and royalty etc.

The project proponent shall assess the health conditions of the workers as per the DGMS guidelines. Noise, air, water quality will be maintained well within the limits.

6.0 ADDITIONAL STUDIES

In additional studies, Risk Analysis followed by Disaster Management Plan, which will help in identifying the possible risks and to promote towards preparedness to counter any mishap. Risk analysis and disaster management plan have been prepared and incorporated in EIA Report.

7.0 ENVIRONMENT MANAGEMENT PLAN

A Comprehensive Environment Management Plan including development of Green Belt has been suggested. Identification of all potential environmental impacts of the project is an essential step of Environmental Impact Assessment. These are critically examined, and major impacts are further studied. In the case of mining projects, change in topography and land use, air pollution, water pollution, waste management, biodiversity and socio-infrastructure issues are significant.

The Mine shall be operated taking all precautionary measures to reduce the impact of mining operations on Air, Water, Noise and Soil and ensuring all control measures to comply with the prescribed standards. Development of green belt along the boundary of Mineral Block will ensure a better environment. The budgetary cost towards EMP proposed is capital cost Rs 32 Lakhs & recurring Cost Rs 156.5 Lakhs per annum.

8.0 CORPORATE SOCIAL RESPONSIBILITY

The Project Proponent proposes to undertake a number of activities under the Corporate Social Responsibility Initiative during the operation of Mining Project. The capital CSR Budget has been worked out as per the expressed felt needs of villagers during Rapid Rural Appraisal. The proposed budget for 5 years is to the extent Rs.115.5 Lakhs and will be spent in villages of study area.

8.1 CORPORATE ENVIRONMENTAL RESPONSIBILITY (CER)

In addition to the CSR, the PP proposes to undertake a number of activities as one time measure under the Corporate Environment Responsibility Initiative during the operation of Mining Project. Necessary budgetary provisions will be made after obtaining the response from locals during the Public Hearing for implementing the CER Activities in line with the MoEF&CC OM notification dated 30th September 2020 and 20th October 2020.

9.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental monitoring is required to know the Quality of Ambient Air, Water and Noise Levels during the operation phase of the proposed project and take required corrective measures, in case of any non-compliance with the norms stipulated by regulatory authorities. The methodologies adopted for environmental monitoring will be in accordance with the CPCB. SPCB and Indian Bureau of Mines requirement.

S. No.	Particulars	Frequency of Monitoring	Sampling	Parameters Required to be Monitored
Air Quality				
1	Ambient Air quality in and around the Mine	Twice a week	24 hours continuously	PM2.5, PM10, SO2 & NO2
Water Quality				
2	Surface Water Quality	Once in a Month	Grab Sampling	As per IS:2296
	Ground water Quality	Once in a Quarter	Grab Sampling	As per IS: 10500
Noise Level Monitoring				
3	Ambient Noise levels in and around the Mine	Once in a Quarter	By Noise level Meter	Noise Level
Soil Quality				
4	Soil Quality around the Mine	Once in a year	Representative Samples	IS: 2720

10.0 EXPLANATION ON HOW ADVERSE EFFECTS ARE MITIGATED

The EIA/EMP Report has established the Base Line Environment of the Project Area and has assessed anticipated impacts of the Project on the overall ecology & environment. Accordingly, general as well as specific mitigation measures for management of the Key Environmental Parameters have been suggested. Further, specific measures towards monitoring and implementation of the Environment Management Plan along with details of the funds required towards implementation of the Pollution Control Measures are also included in the Report. By implementing the suggested Environment Management Plan adverse effects of the Project can be mitigated.