

EXECUTIVE SUMMARY

INTRODUCTION

Karipathar Marble Mine of M/s Anupam Marble is situated in village - Karipathar, Tehsil – Dheemerkheda of Distt.- Katni in Madhya Pradesh state. The lease area is 10.0 hec. The lease area was earlier sanctioned to M/s. Satna Marble for period upto 09.10.2013. The same has been transferred to the present lessee vide State Govt. letter No. F4-60/2003/12/2 dated 28.10.2003. The transfer deed was executed on 11.11.2005 for the balance period of lease. The lessee proposes to enhance the production of Marble blocks upto 6,500 cum per annum. Mine lease is valid up to 2013.

No litigation regarding of lease area is pending in any court of law. The Project proposed is for production of marble is 17,300 TPA. ..

Location

The mine lease area is located in karipathar village, Tehsil-Dhimerkheda, District Katni (M.P). The mining lease area is a part of the Survey of India toposheet no. 64 A /6. Geographically the ML area falls under following co-ordinates

Latitude	N 23 ⁰ 35' 40" to 23 ⁰ 36' 03"
Longitude	E 80 ⁰ 16' 55" to 80 ⁰ 17' 12"

PROJECT DESCRIPTION

Topography

The mine lease area is almost a, terrain flat having maximum elevation of 430mt. above M.S.L. and lowest elevation of 428 mt. above MSL.

Salient Features of Mining

- Mining is by opencast mechanized method.
- Estimated Mineable Reserves: 1.60 million tonnes
- Maximum rate of production will be around 17,300 tonnes/annum.
- Anticipated life of mine is 97 years.
- 19504 m³ of total waste will be generated during plan period.
- About 75 people will be engaged as direct employment including managerial staff.
- Tippers will be used for transportation.

DESCRIPTION OF THE ENVIRONMENT

Meteorology (Pre monsoon - 2008)

Sl. No.	Parameters	Data
1	Hourly Maximum Temperature (0C)	43.2
2	Hourly Minimum Temperature (0C)	16.0
3	Hourly Maximum Relative Humidity (%)	91.0
4	Hourly Minimum Relative Humidity (%)	3.0
5	Total Rainfall(mm)	Nil
6	Predominant Wind Direction from	West

Ambient Air Quality

The ambient air quality with respect to the study zone of 10 km radius around mine area forms the baseline information. The summary of Ambient Air Quality test results are given below.

Executive Summary for Karipather Marble Mine of M/s Anupam Marble

Analysis of baseline concentrations (98th %tile value, Units: $\mu\text{g}/\text{m}^3$)

Name of Sampling Location	Test Results (Units: $\mu\text{g} / \text{m}^3$)			
	SPM	RPM	SO ₂	NOX
Mine Lease Area block (A)	187.6	63.6	11.5	16.0
Mine Lease Area block (B)	137.6	41.3	8.0	16.6
Chhotikaripathar	138.1	46.9	8.3	11.7
Kusera	138.6	44.8	8.0	11.3
Jajangra	134.2	49.2	8.6	12.2
Badikaripathar	122.6	41.7	7.2	10.0
Ligri	125.6	43.1	7.4	10.3
Madhana	106.6	35.5	6.0	8.3

National Ambient Air Quality Standards(24Hrs)

Area	SPM	RPM	SO ₂	NOX
Residential	140/200	60/100	60/80	60/80
Industrial	360/500	120/150	80/120	80/120

Noise Level

A survey was at 8 locations i.e. 2 locations in mine lease area and six locations in buffer zone. Summary of noise level data of different locations are given below.

Noise Levels during Study Period [Units: dB(A)]

	N-1	N-2	N-3	N-4	N-5	N-6	N-7	N-8
L_{Min}	46.9	46.4	45.7	45.9	45.4	45.4	44.9	44.9
L_{Max}	64.5	65.0	60.8	61.3	61.0	61.0	60.5	60.5
L_d	58.6	58.9	56.7	57.4	57.0	56.8	56.8	57.2
Standard	75	75	55	55	55	55	55	55
L_n	48.0	48.2	46.8	48.0	48.2	48.2	48.5	48.9
Standard	70	70	45	45	45	45	45	45
L_{Min}	Minimum Noise Level Recorded				L_d	Day Equivalents		
L_{Max}	Maximum Noise Level Recorded				L_n	Night Equivalents		

The ambient noise level in and around the existing mine area is well within the statutory limits.

WATER ENVIRONMENT

Water Resources

Surface Water

There is no river, nalla or any surface water source within ML area. There are two small perennial ponds located in Parwar & Chapra villages at about 6km & 8km towards west and NW respectively from the ML area.

Water Quality

One surface water and four ground water samples were collected and tested to know the water quality of study area. Summary of the water quality test results are given below.

Summary of Water Quality Test Results

S. No.	Parameter	Unit	Surface Water	Ground Water	Desirable limits as per IS: 10500
1	pH	-	7.2	7.1-7.3	6.5 – 8.5
2	Total Dissolved Solids	mg/l	135	214-265	500
3	Total Hardness as CaCO ₃	mg/l	52	130-195	300
4	Chloride as Cl	mg/l	24	15-29	250
5	Iron as Fe	mg/l	0.2 – 3.6	0.18 – 0.80	0.3
6	Fluoride as F	mg/l	0.1 – 0.7	0.2 – 0.55	1.0
7	Turbidity	NTU	66	3-10	5

Physio-chemical characteristic of the samples analyzed were well within the desirable limits

LAND ENVIRONMENT

Land Use

The entire lease area 10.00 ha. is under possession of M/s Anupam Marbles (P) Ltd.

The mining lease area is a revenue. The present land use of the ML area is as follows:

Present Land use of ML area

S.No.	Category	Land Use (In Ha)
1	Area of Excavation	1.20
2	Storage of top soil
3	OB dump	0.62
4	Mineral Stock	0.25
5	Roads	0.10
6	Infrastructure/Site services, Water reservoir	0.10 -
7	Green belt / Afforestation
8	Un- utilized	7.73
Total		10.0

Land use in the Study area

Land use	Percentage (%)
Forest land	8.0
Irrigated land	12.0
Un irrigated land	38.0
Culturable waste land	26.0
Area N/A for cultivation	16.0
Total	100

Soil Quality

Soil samples were collected from four locations from the core and buffer zone to evaluate the soil quality in the study area. General soil texture is silty-clay. The pH ranges between 6.4 and 7.0. The concentration of NPK area under better, medium and very less category as per standard soil classification.

BIOLOGICAL ENVIRONMENT

Floral

Regionally the area falls under subtropical climate zone and sustaining dry tropical forest. The common trees found in study area is seja, achar, Amaltas and Mahuwa. Apart from this many varieties of grass creepers and climber are present in the study area. The forest density of the study area ranges between 0.3 and 0.4.

Fauna

There is no Schedule I animal in the ML area. Fauna of buffer zone indeed occasional Langoor, Mongoos and birds such as Heron, Crown, Parrots etc. apart from this many kinds of snakes other reptiles amphibians and fishes are found in the study area.

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact on Ambient Air Quality

The proposed expansion activity will lead to marginal increase in SPM concentration. Based on ISC-AERMOD model the maximum predicted concentrations of SPM during peak operation of mining will be <189 $\mu\text{g}/\text{m}^3$ within ML area and <140 $\mu\text{g}/\text{m}^3$ within study area.

Impact on Noise Level & Mitigation

The anticipated noise level of working area due to proposed mining will be <59, which is less than the prescribed limits for industrial area. No additional noise can be anticipated due to drilling activity at nearest habitat (about 500m from ML boundary) of Karipathar village.

Mitigation Measure of Water Pollution

- Total water requirement is 5 m³/day
- There is no waste water generation from the mine, hence contamination of surface and ground water quality is not possible.
- Mining will be restricted upto a maximum depth of 19m surface level of 428m AMSL during plan period, where as the ground water table is at >25m bgl, hence mining will not intersect the ground water table during plan period.

Impact on Land

Land use of ML area

S.No.	Category	present	Lease period end	Post mining Land use
1	Area of Excavation	1.20	2.25	-
2	Storage of top soil	0.30	-
3	OB dump	0.62	2.20	-
4	Mineral Stock	0.25	0.25	-
5	Roads	0.10	0.10	0.10
6	Infrastructure/Site services, Water reservoir	0.10 -	0.10 -	0.10 5.0
7	Green belt / Afforestation	0.16	4.80
8	Un- utilized	7.73	4.64
Total		10.0	10.0	10.0

Impact on Flora & Fauna

The area is thinly vegetated and with no thick vegetation on the plateau top. There is no tree growth on the top of the plateau area, but grass shrub and bushes grow sparsely. No wildlife are found in this area. The mining activity of the proposed project does not change the community structure of the vegetation.

Proposed Mitigation Measures on Socio-Economy

This project provides the local populace with employment and business entrepreneurial opportunity. All unskilled manual labour will be employed from the local community and they also will have a big opportunity to enter into transport business. The local skilled labour will have additional opportunity to enter into automobile maintenance profession to cater to the needs of the transport trucks.

ENVIRONMENTAL MONITORING PROGRAMME

Routine monitoring of all the environmental parameters viz. air, water, noise and soil as per the formulated program based on CPCB and MoEF guidelines every year in order to detect any changes from the baseline status. Monitoring program will be followed till the mining operations continue. For implementation of Environment Management Plan a small unit called Environment Management Division will be formed under the control of the Mines Manager. The job of this division will be regular environmental monitoring, preparation and submission of environmental report, green belt development, etc.

The budget for environmental protection has been formulated and given as below.

Budget for Environmental Protection

Particulars	Capital Cost (Rs.)	Recurring Cost (Rs.)
Pollution Control		
Dust suppression	10,0000	1,00,000
Gully plugs (5 Nos), 1 Check Dam, 1 Retaining Wall, etc	3,50,000	1,00,000
Pollution Monitoring	-	3,00,000
Occupational Health	5,00000	-
For routine checkup		3,00,000
Medical aid as per ESI Scheme		60,000
Training/compensation for accident and injury		3,00,000
Reclamation & Rehabilitation		
Green belt & afforestation		2,00,000
Dump rehabilitation		2,00,000
Others (Environmental study, Social Development Plan, etc.)	20,00,000	15,00,00
Total	38,50,000	30,60,000

CONCLUSION

Based on the EIA study it is observed that there will be an increase in the dust pollution, which will be controlled by sprinkling of water and transportation of ore in closed trucks. There will be an insignificant impact on ambient environment and ecology due to the mining activities moreover the mining operation will lead to direct and indirect employment generation in the area Hence, it can be summarized that the development of the mine will have a positive impact on the socio-economic of the area and lead to sustainable development of the region.