

DRAFT ENVIRONMENT IMPACT ASSESSMENT REPORT

Of

Executive summary - English

**Tikanpal Limestone (Low grade) Mine
(under cluster)**

at

Village: Tikanpal Tehsil & District: Bastar, State: Chhattisgarh,

Total Area- 2.89 ha.

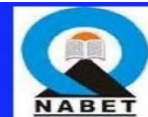
Project Name	Block/ Khasra	Area (Acres) /(Ha)	Location	Consent Letter	Signature
Limestone Mine at Village Tikanpal	418/2	1.50 Ha	Village- Tikanpal Tehsil- Bastar District- Bastar State – Chhattisgarh.	M/s Sunny Stone Crusher prop. Smt. Satindar Kaur	
Limestone Mine at Village Tikanpal	298/1,2 98/2,40 5	1.390 hac	Village- Tikanpal Tehsil- Bastar District- Bastar State – Chhattisgarh.	M/s Sunny Metals Pro. Shri Bachhan Singh	



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P & M Solution



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EXECUTIVE SUMMARY

INTRODUCTION

Environment Impact Assessment (EIA) is a process used to identify the environmental, social & economic impacts of a project prior to decision making. It aims to predict environmental impacts at an early stage of project planning & design, find ways & means to reduce adverse impacts. By using EIA, we can decide the suitable mitigation measures for implementation to maintain healthy working environment and contain pollution within permissible limits.

Environmental Impact Assessment is one of the proven management tools for integrating environmental concerns in development process and for improved decision making as there is a need to harmonize the developmental activities with the environmental concerns into the larger interest of the society. The growing awareness, over the years, on environmental protection and sustainable development, has given further emphasis to the implementation of sound environmental management practices for mitigating adverse impacts from developmental activities. EIA study plays a vital role in sustainable development of a country. Recognizing its importance, the Ministry of Environment and Forest, Government of India had formulated policies and procedures governing the industrial and other developmental activities to prevent indiscriminate exploitation of natural resources and to promote integration of environmental concern in project development.

In this report of limestone mine at Tikanpal is proposed for mining of low grade limestone in the applied mining lease area of 2.89hectares (under cluster approach 1.50 hac + 1.39 hac)) falling under category “B”.

Environmental Impact Assessment report is prepared to comply with the Terms of Reference (TOR) received from SEIAA, Chhattisgarh under EIA notification of the MoEF&CC dated 14th September, 2006 and its subsequent amendment there-off and also the EIA Guidance Manual for Mining of Minerals of MoEF &CC, Govt. of India, for seeking environmental clearance for mining of limestone in the applied mining lease area.

Location

The mining lease is located in village of Tikanpal, Tehsil- Baster, District- Baster (C.G.) Geographically the QL area 1.50 ha. Extends from Latitude 19°15'00.42" to 19°15'00.42"

And Longitude 81°52'05.55" to 81°52'11.76" and the QL area 1.39 Ha extends from Latitude 19°15'15.08" to 19°15'22.11" and Longitude 81°52'29.06" to 81°52'32.62"

Connectivity

The lease area is about 2.71 km from Tikanpal. The QL area can be approached from National Highway- NH 30 - 2.8 Km. The Nearest Railway Station is Jagdalpur Railway Station at 32 km. The Nearest Airport is Maa Danteshwari Airport at a distance of 32.3km.

Mailing/ Correspondence Address of Project Proponent:

1. M/s Sunny Stone Crusher prop.

Smt. Satindar Kaur

R/o Kondagaon, Dist- Bastar (C.G.)

2. M/s Sunny Metals

Pro. Shri Bachhan Singh

R/0 – Biranpur , bastar

Size of the Project

The total production of limestone is 45000 TPA from 1.50 Ha & 62,250TPA from 1.39 Ha. Hence the total production of limestone comes out to be 1,07,250 tones/annum from Two mines (under cluster).

Anticipated Life of Project and Cost of the Project

Production of Limestone will be proposed for Ten Year = 261961 MT (Total Rom = 291068 MT) and total Geological Reserve is in lease area = 262130 (Total Rom = 291255 MT). So the Anticipated life of the mine will expected to be about 10 Years.

Average production of Limestone will be for Five Years = 29924.00 MT (Total Rom) and total Movable Reserve is in lease area = 149625 MT (Total Rom). So the Anticipated life of the mine will expected to be about 5 Years.

Year wise Production details
PRODUCTION PLAN FOR FIRST FIVE YEARS Summary of
Production of Mine at Village Tikanpal (1.50 Ha)

Year wise	mRL	Area (m²)	Depth (m)	Volume (m³)	Density	Production (MT)	Recovery 95%
1st year	555-554.5	11046	0.5	5523	2.5	13807.5	12426.75
	554.5-553	3718	1.5	5577	2.5	13942.5	12548.25
	Total					27750.00	24975
2nd year	554.5-553	6588	1.5	9882	2.5	24705	22234.5
	553-551.5	812	1.5	1218	2.5	3045	2740.5
	Total					27750.00	24975
3 rd year	553-551.5	8776	1.5	13164	2.5	32910	29619
	551.5-550	3224	1.5	4836	2.5	12090	10881
	Total					45000.00	40500.00
4 th year	551.5-550	5663	1.5	8494.5	2.5	21236.25	19112.63
	550-548.5	1737	1.5	2605.5	2.5	6513.75	5862.375
	Total					27750.00	24975
5 th year	550-548.5	6467	1.5	9700.5	2.5	24251.25	21826.13
	548.5-547	933	1.5	1399.5	2.5	3498.75	3148.875
	Total					27750.00	24975
Grand Total						156000.00	140400.00

Summary of Production of Mine at Village Tikanpal (1.39 Ha)

Year wise	mRL	Area (m²)	Depth (m)	Volume (m³)	Density	Production (MT)	Recovery 90%
1st year	560-558.5	1840	1.5	2760	2.5	6900	6210
	558.5-557	4760	1.5	7140	2.5	17850	16065
	Total					24750	22275
2nd year	558.5-557	900	1.5	1350	2.5	3375	3037.5
	557-555.5	5130	1.5	7695	2.5	19237.5	17313.75
	555.5-554	570	1.5	855	2.5	2137.5	1923.75
	Total					24750	22275
3 rd year	555.5-554	4040	1.5	6060	2.5	15150	13635
	554-552.5	4120	1.5	6180	2.5	15450	13905
	552.5-551	3640	1.5	5460	2.5	13650	12285
	551-549.5	3190	1.5	4785	2.5	11962.5	10766.25
	549.5-548	1610	1.5	2415	2.5	6037.5	5433.75
	Total					62250	56025
4 th year	549.5-548	1120	1.5	1680	2.5	4200	3780
	548-546.5	2320	1.5	3480	2.5	8700	7830
	546.5-546	1940	0.5	970	2.5	2425	2182.5
	560-558.5	964	1.5	1446	2.5	3615	3253.5
	Total					18940	17046

DEIA/EMP report of Limestone Mine–(under cluster approach) over an total area of 2.89 hac at Village- Tikanpal, Tehsil & District – Bastar, Chhattisgarh.

5 th year	558.5-557	1600	1.5	2400	2.5	6000	5400
	557-555.5	1380	1.5	2070	2.5	5175	4657.5
	555.5-554	1130	1.5	1695	2.5	4237.5	3813.75
	554-552.5	938	1.5	1407	2.5	3517.5	3165.75
	Total					18930	17037
Grand Total						149620	134658

Systematic working will be done by formation of benches as per M.M.R. 1961. All applicable rules of MMR 1961, Mines Act-1952, MCR-2016 and MCDR-1988 will be followed for safe, scientific & systematic working to follow the principles of safety & conservation of human health & mineral.

Land Use Pattern:- Limestone Mine at Village- Tikanpal , Area – 1.50 ha. And 1.39 ha.

Articles	Present Land use	Forest Land	Agriculture Land	Stony waste Land	Land use at the end of 5 year lease period in Hect.	Land use at the end of 10 year lease period in Hect.
A. Lease area	1.50	Nil	Nil	Nil	1.50	1.50
B. Quarrying & allied						
1. Area under pit	Nil	Nil	Nil	Nil	1.104	1.104
2. Area of Safety Zone	Nil	Nil	Nil	Nil	0.396	0.396
Total	1.50 Hect	Nil	Nil	Nil	1.50 Hect	1.50 Hect

DEIA/EMP report of Limestone Mine–(under cluster approach) over an total area of 2.89 hac at Village- Tikanpal, Tehsil & District – Bastar, Chhattisgarh.

Articles	Present Land use in Hect.	Forest Land	Agriculture Land	Stony waste Land	Land use at the end of 5 year lease period in Hect.	Land use at the end of 10 year lease period in Hect.
C. Lease area	1.39	Nil	Nil	Nil	1.39	1.39
D. Quarrying & allied						
1. Area under pit	Nil	Nil	Nil	Nil	0.81	0.81
2. Area of Safety Zone	Nil	Nil	Nil	Nil	0.48	0.48
3. Area for Dumping	Nil	Nil	Nil	Nil	0.10	0.10
Total	1.39	Nil	Nil	Nil	1.39 Hect	1.39 Hect

5 Disposal of Waste

Nature of waste, its rate of yearly generation and proposals for disposal of waste: The Waste –disposal arrangement (1.50 Ha)

Top Soil /OB removed from the working area and dump along the 7.5 m safety zone (which is approx. 3960 m² area) in 1st year plan period. Detail of Soil/OB management is given below:-

Area of top Soil/ OB	11046 m ²
Average thickness	1.0 m
Volume of Top Soil/OB	11046 m ³
Swell Factor 10%	11046 x 0.10 = 1104.6 m ³
Swell volume	11046 + 1104.6 = 12150.6 = 12151 m ³
Area for dumping of Soil/OB	7.5 m Safety Zone Area = 3956 m ²
Maximum Height of Soil/OB	1. Soil Dump in Safety Zone = 12151 / 3956 = 3.07 = 3 m Approx.

Waste –disposal arrangement (1.39 Ha)

Detail of year wise Soil/OB management is given below:-

Year	top soil Area (m ²)	Average thickness (m)	Volume of Top soil (m ³)	Swell Factor 10% (m ³)	Swell volume (m ³)	Soil Utilized area
I	6200	1.0	6200	620	6820	1. in Safety Zone area (4864 m ²) Periphery (m) x cross section (m ²) $673 \times 7.1 = 4778 \text{ m}^3$ (max 1.5 m height) 2. remaining 2042 m ³ Dump /OB used as backfilling material in the excavated 7.5 m Safety zone (which is 134 m ² area on maximum 15 m depth)
IV	1900	1	1900	190	2090	

General Features

I) Surface Drainage Pattern

In the Study area of pond near Tikanpal

Transportation Route:

Traffic analysis is carried out by understanding the existing carrying capacity of the roads near to the project site and the connecting main roads in the area. Then depending on the capacity of the mine, the number of trucks that will be added to the present scenario will be compared to the carrying capacity.

Table 4.2 (i): Existing Traffic Scenario & LOS

Road	V	C	Existing V/C Ratio	LOS
National Highway 30	78	1100	0.07	A

Source: Capacity as per IRC: 64-1990

V= Volume of Vehicles in PCU's/day & C= Capacity of Road in PCU's/day

The existing Level of Service (LOS) is "A" & "B" i.e. excellent & very good.

V/C	LOS	Performance
0.0 - 0.2	A	Excellent
0.2 - 0.4	B	Very Good
0.4 - 0.6	C	Good / Average / Fair
0.6 - 0.8	D	Poor
0.8 - 1.0	E	Very Poor

During Mine operation (For Cluster Area)

Proposed Capacity of mine/annum : 1,07,250 T/Annum (45000 TPA + 62,250 TPA)

No. of working days : 240 days

Proposed Capacity of mine/day : 446.8 or say 447 TPD

Truck Capacity : 10 tonnes

No. of trucks deployed/day : 59.6 or say 60 Trucks

No. of trucks deployed/day to and fro : $60 \times 2 = 120$

No. of trucks deployed per hour = $120/8 = 15$

PCU/hr(15×3) : 45 PCU

Table 4.2 (ii): Modified Traffic Scenario & LOS

Road	V	C	Existing V/C Ratio	LOS
National Highway 30	78 +45	1100	0.11	A

Results

DEIA/EMP report of Limestone Mine–(under cluster approach) over an total area of 2.89 hac at Village- Tikanpal, Tehsil & District – Bastar, Chhattisgarh.

From the above analysis it can be seen that the LOS remains same at Highway intersection that is ‘A’ (Excellent’) respectively, as per classification, whereas the LOS for near village intersection will not be changed from “A” (Excellent’). Hence, there will not so much adverse affect on the proposed evacuation roads due to additional traffic. Traffic management has been proposed as given below.

iii) Water demand

No processing of mineral will be done in the mine. Only simple sizing and sorting will be done.

Manpower Requirement

About 80 persons will be getting direct and indirect employment in this Cluster mine. The man power will be mostly skilled.

DESCRIPTION OF BASELINE-ENVIRONMENT

This section contains the description of baseline studies of the 10 km radius of the area. The data collected has been used to understand the existing environment scenario around

The proposed mining project against which the potential impacts of the project can be assessed.

Environmental data has been collected in relation to propose mining for:-

- (a) Land
- (b) Water
- (c) Air
- (d) Noise
- (e) Biological
- (f) Socio-economic

(a) Land Use: The land-use is divided into agriculture land, settlement, and river and forest area as shown in the map. The area is fertile and dominated by the proportion of agriculture land.

There is no National Park, Biosphere reserve, Migratory routes of fauna and National Monument within 10km periphery of the lease area as per secondary data available. There is no habitation within lease area.

Analysis Results of Baseline Environment

(a) Results of Analysis of the Soil.

Samples collected from identified locations indicate the soil is sandy type and the pH value ranging from 6.72 to 7.91, which shows that the soil is alkaline in nature. Potassium is found to be from 76.31 mg/kg to 85 mg/kg. The water holding capacity is found in between 21.02% to 35.8%.

(b) WATER ENVIRONMENT

- The pH limit fixed for drinking water samples as per IS-10500 Standards is 6.5 to 8.5 beyond this range the water will affect the mucus membrane or water supply system. During the study period, the pH was varying for ground waters from 7.10 to 7.18. The pH values for all the samples collected in the study area during study period were found to be within the limits.
- The desirable limit for total dissolved solids as per IS-10500 Standards is 500 mg/l whereas the permissible limit in absence of alternate source is 2000 mg/l. In ground water samples collected from the study area, the total dissolved solids are varying from 343 mg/l to 512 mg/l. The TDS of the samples were within the desirable limit & the permissible limit of 500 mg/l & 2000 mg/l respectively.

(c) AMBIENT AIR QUALITY

The Ambient Air Quality Monitoring reveals that of monitoring stations with minimum Concentrations of PM₁₀ were 43.01 µg/m³ at AQ5 and maximum 68.30 µg/m³ at AQ8. The result of PM_{2.5} reveals that the minimum concentration of 24.10 µg/m³ at AQ5 while maximum concentration of 45.81 µg/m³ was found at AQ8.

The gaseous pollutants SO₂ and NO_x were within the prescribed CPCB limit of 80 µg/m³. For residential and rural areas at all stations. The minimum & maximum concentrations of SO₂ were found to be 9.03 µg/m³ at AQ5 & 14.89 µg/m³ at AQ8 respectively. The minimum & maximum concentrations of NO_x were found to be 10.06 µg/m³ at AQ 5 & 20.13 µg/m³ at AQ8 respectively. The free silica content in PM₁₀ was found to be minimum 1.01 µg/m³ and maximum 2.65 µg/m³ at AQ5 and AQ8 respectively.

(d) NOISE ENVIRONMENT

Noise generated at the mine is due to semi mechanized mining operations and truck transportation activities. The noise generated by the mining activity dissipates within the mine. There is no major impact of the mining activity on the nearby villages. However, pronounced effect of above noise levels is felt only near the active working area.

The impact of noise on the villages is negligible as the villages are far located from the mine workings. Since there is no involvement of major machinery, the impact of noise levels will be minimal.

(e) BIOLOGICAL ENVIRONMENT

The lease area as well as buffer zone area reveals no endangered and endemic species of flora and fauna in the area.

(f) Socio- economic

Population Composition

According to 2011 Population Census the study area has a total population of 73242. Of this 52.0 percent are male and the remaining 48.49 percent are female. Further 15.2 percent of the total population belongs to 0-6 age group. About 51.71 percent of them are male and the remaining 48.3 percent are female.

Sex Ratio

The overall sex ratio in the study area has been worked out to 941 females per 1000 males, which is greater than the national average of 933 females per 1000 males.

ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION

MEASURES

Impact on Ambient Air Quality

The mining is proposed to be carried out by opencast semi mechanized method. The air borne particulate matter generated by ore and handling operations as well as transportation is the main air pollutant. The emissions of Sulphur dioxide (SO₂), Oxides of Nitrogen (NO_x) contributed by vehicles plying on haul roads are marginal. Prediction of impacts on air environment has been carried out taking into consideration proposed production and net increase in emissions.

Mitigation Measures

- Water sprinkling will be done on the haul roads twice in a day.
- The dust generated during the process will be minimized by water spray at the working faces before and after the activity.
- Cyclic route will be followed for the transport of materials i.e. loaded & unloaded vehicles will have different route of transportation. Width of the internal road can be maintained more than 10 m.
- Plantation will be carried out on approach roads and in Lease boundary.
- Planning transportation routes of mined material so as to reach the nearest paved roads by shortest route. (Minimize transportation over unpaved road);
- Personal Protection Equipment's (PPE) like dust masks, ear plugs etc. will be provided to mine workers.
- Rock breaker will be used for breaking over size boulders in order to reduce dust and noise generation, which otherwise would be generated due to secondary blasting.
- Speed limit will be enforced to reduce airborne fugitive dust from vehicular traffic.
- Deploying PUC certified vehicles to reduce their noise emission.
- Haul road shall be covered with gravels
- Spillage from the trucks will be prevented by covering tarpaulin over the trucks.
- Ambient Air Quality Monitoring will be conducted on regularly basis to assess the quality of ambient air.

NOISE ENVIRONMENT

Noise generated at the mine is due to semi mechanized mining operations and truck transportation activities. The noise generated by the mining activity dissipates within the mine. There is no major impact of the mining activity on the nearby villages. However, pronounced effect of above noise levels is felt only near the active working area.

The impact of noise on the villages is negligible as the villages are far located from the mine workings. Since there is no involvement of major machinery, the impact of noise levels will be minimal.

S. No	Impact Prediction	Mitigation Measures
1	Noise Impact due to mining activities.	The noise levels from all the sources are periodical and restricted to particular operation.
2	Noise impact due to vehicular movement.	Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce the generation of noise. Plantation along the sides of approach roads, around office building and mine area will be done to minimize the propagation of noise. Personal Protective Equipments (PPE) like earmuffs/earplugs will be provided to all operators and employees working near mining machineries or at higher noise zone. Periodical noise level monitoring will be done

BIOLOGICAL ENVIRONMENT

S. No	Impact Predicted	Suggestive measure
1	Disturbance of free movement/living of wild fauna	<p>Care will be taken that noise produced during vehicles movement for carrying OB and ore materials are within the permissible noise level.</p> <p>Care will be taken that no hunting of animals (birds) carried out by labors.</p> <p>If wild animals are noticed crossing the core zone, it will not be disturbed at all.</p> <p>Laborers will not be allowed to discards food, plastic etc., which can attract animals near the core site.</p> <p>Only low polluting vehicle will be allowed for carrying ore materials.</p> <p>All vehicles allowed in the project site area will have to provide pollution under control certificate at the end of three months.</p> <p>Noise level will be within permissible limit (silent zone-50dB during day time) as per noise pollution (regulation and control), rules, 2000, CPCB norms.</p>
2	Harvesting of flora	<p>No tree cutting, chopping, lumbering, uprooting of shrubs and herbs should be allowed.</p> <p>Collections of economically important plants will be fully restricted.</p>

LAND ENVIRONMENT

S. No	Impact Prediction	Mitigation Measures
1	Change in the Topography of the Land / Land Degradation	As an abatement measure restoration of quarry pit is proposed by converting it in a water reservoir and put to an economical use like fish breeding or irrigation.

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2	Solid waste generation	About 5% mineral wastes will be generated. Top Soil will backfilled in the mined out areas on which plantation will be raised.
3	Change in Drainage Pattern	Water flow / course will not be obstructed and natural drains or nallahs will not be disturbed. Run-off from mine and mineral stack will be prevented to avoid being discharged to surroundings, particularly to agricultural land. Garland drains and, catch pits has been constructed to prevent run off affecting the surrounding agricultural land. Green belt has been developed in boundary.
4	Impact on the Agricultural Practice at nearby area due to dust generation	Agriculture activities are practiced nearby areas may impacted because of dust generation but mitigative measures such as regular water sprinkling on active areas for example haul roads, excavation sites will be strictly followed so that impact is minimized.

WATER ENVIRONMENT

S.No	Impact Prediction	Mitigation Measures
1	Effect on the Ground Water Table	Max Elevation of the QL area is about 556 m. from MSL. The maximum depth of quarry will be 14 m deep (water table 30m deep from the surface level.) Therefore the mining activity will not intersect with the ground water table.
2	Wash off from the dumps	No dumping has been proposed.
3	Soil Erosion	Reclamation of the mined out area will be done with plantation to avoid the soil erosion
4	Waste Water generation/ Discharge	Portable Bio-toilets will be used; hence no sewage / liquid effluent will be generated and contamination is also not expected due to percolation.
5	Siltation in nearby agriculture field	A Garland drain has been constructed on the sloping side barrier of the QL area. The garland drain has been routed through settling tank to remove Suspended solids from flowing into storm water.

ADDITIONAL STUDIES

DISASTER MANAGEMENT PLAN

In order to avoid any danger in the mine site at the end of life of mine a disaster management cell headed by local authority District Collector will be constituted. Police department health authorities, including doctor, ambulances and so on will have a vital part to play following a disaster along with the mine management, and they will be an integral part of the disaster management plan

The disaster management plan is aimed to ensure safety of human life and property and protection of environment Following are the objective of the disaster management plan.

- (i) First Aid to injured.
- (ii) Rescue operation and provision of adequate medical facilities to the injured. (iii) Safety of the human life in the buffer zone if needed.
- (iv) Protecting and minimizing damage to property and the environment. (v) Initially restrict and ultimately bring the incident under control.
- (vi) Identify any dead.
- (vii) Inform to the administration, DGMS and statutory persons as per Rules.

PROJECT BENEFITS AND COSTS EVALUATION

The project will improve the physical infrastructure, social infrastructure like improvement of road conditions water supply during dry season, drainage, educational institutions and improved environmental conditions, etc. The project also provides direct employment to 40 persons and indirect employment to another 40 persons. It increases economic activities, better living standard, educational facility, health facility and infrastructural development. The project will contribute to district mineral fund which will directly provide aid to the local authority to fund the development projects. The management will provide free saplings of fruit bearing and other trees, etc. to local during rain for plantation. This will increase the consciousness in workers and near-by villagers for greenery. Fruit trees can contribute towards their financial gains.

The CER activities are increasingly being taken up by the project proponent not only as fulfilling of mandatory provisions but also for the formation or enhancement of brand image. Besides the above, CER is seen more as a responsibility towards Environment & society rather than a business promotion activity.

Year wise allocation of funds for the above activities proposed to be taken up by the project proponent is provided in the table below:

All the activities listed above are for community development as a whole and not for individual person or a family. Each development initiative will be implemented in close collaboration with the village Panchayat. The Project proponent may avail the services of a NGO for the implementation of the above programme, if felt needed.

Budget for Environmental Protection

Table 9.1, Budget of EMP of Village Tikanpal- 1.39 hac)

Sl. No	Description	Capital Cost 1 st year (Rs)	Recurring Cost (Rs) 2 nd year	Recurring Cost (Rs) 3 rd year	Recurring Cost (Rs) 4 th Year	Recurring Cost (Rs) 5 th Year
1	Pollution Control & Dust Suppression	2,00,000	2,00,000	2,00,000	2,00,000	2,00,000
2	Pollution Monitoring	-	30,000	30,000	30,000	30,000
3	Plantation and salary for one gardener (full time basis) (8*12 = 96,000)	96,000	96,000	96,000	96,000	96,000
4	Haul road Maintenance Cost (50 m)	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000
5	Occupational health and safety cost	50,000	50,000	50,000	50,000	50,000
TOTAL (Rs)		4,46,000	4,76,000	4,76,000	4,76,000	4,76,000

Table 9.2, Budget of EMP of Village Tikanpal (1.50 Ha)

Sl. No	Description	Capital Cost 1 st year (Rs)	Recurring Cost (Rs) 2 nd year	Recurring Cost (Rs) 3 rd year	Recurring Cost (Rs) 4 th Year	Recurring Cost (Rs) 5 th Year
1	Pollution Control & Dust Suppression	1,20,000	1,20,000	1,20,000	1,20,000	1,20,000
2	Pollution Monitoring	-	30,000	30,000	30,000	30,000

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3	Plantation and salary for one gardener (full time basis) (8*12 = 96,000)	96,000	96,000	96,000	96,000	96,000
4	Haul road Maintenance Cost (50 m)	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000
5	Occupational health and safety cost	50,000	50,000	50,000	50,000	50,000
TOTAL (Rs)		3,66,000	3,96,000	3,96,000	3,96,000	3,96,000

- Salary of Labour for haul road maintenance 250* 1 labor*400= 1,00,000/-
- Salary of 1 gardener (8000) /month * 12 = 96,000 / year
- * 20 lakh per kilometer (2000 * 50m haul road = 1,00,000)

Budget for Occupational Health

Particulars	Recurring Cost per year (Rs.)
For occupational health checkup	75,000
Total	75,000

Budget for water, shelter and sanitation for mine worker

Scheme	Capital Cost (In Rs)	Recurring Cost (In Rs)
Drinking water facility (Water Cooler)	25,000	5,000
Rest shelter	1,00,000	10,000
Sanitation (Urinal and Toilet)	40,000	5,000
Total	1,65,000	20,000

CORPORATE ENVIRONMENT RESPONSIBILITY

2% of capital cost of the project cost will be allotted for the Corporate Environmental Responsibility as per OM dated 1st May 2018. Proposed CER budget is Rs. 1.32 Lakhs

For each activity the funds to be earmarked by the proponent will be decided after discussion with the local authority/people and the beneficiaries during Public Hearing. It has been planned to undertake a concurrent evaluation of the activities to be taken up under the CER programme.

Tentative allocation of funds for the various activities proposed to be taken up by the project proponent under CER program

Table : CER Cost of Village Tikanpal (1.50 Ha)

S. No	Activities	Fund in lakhs/ year (Capital Cost)
1	Plantation will be done along with tree guard in village school	1,00,000
TOTAL		1,00,000

Table: CER Cost of Village Tikanpal (1.39Ha)

S. No	Activities	Fund in lakhs/ year (Capital Cost)
1	Plantation will be done along with tree guard in muktidham of village	1,00,000
TOTAL		1,00,000

CONCLUSION

As discussed, it is safe to say that the proposed facilities are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be

Adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigative technique, as well as to serve as biological indicators for the pollutants released from the premises of “Tikanpal Limestone Quarry.”