EXECUTIVE SUMMARY

OF

ENVIRONMENTAL MANAGEMENT PLAN REPORT

OF

RANIJARAUD LIMESTONE QUARRY MINE PROJECT

Village- Ranijaraud, Tehsil –Simga, District- Baloda Bazar,

State-Chhattisgarh.

Area: 1.219 Ha, proposed Maximum Production Capacity: 28,425 TPA

APPLICANT

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Prepared By

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Gurugram (Haryana).

(An ISO 9001:2008 Certified Co.)

Credentials: Accredited by QCI/NABET

1.0 INTRODUCTION

Environmental Impact Assessment (EIA) is a process, used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision making tool, which guides the decision makers in taking appropriate decisions for proposed projects. EIA systematically examines both beneficial and adverse consequences of the proposed project and ensure that these impacts are taken into account during the project designing.

The Environmental Impact Assessment Documentation has been prepared in terms of EIA notification of the MoEF dated 14-9-2006 and its subsequent amendments thereof and the EIA Guidance Manual for Mining of Minerals (Feb, 2010) of MoEF, Govt. of India, for seeking environmental clearance for mining in the existing area of Ranijaraud Limestone Quarry Mine Project measuring 1.219 hectares falling under category "B1" due to the order of Hon'ble NGT (PB), Ministry of Environment, Forest & Climate Change (MoEF &CC), Govt. of India vide Office Memorandum F.No.J-13012/12/2013-IA-II (I) dated 24.12.2013.

1.1 Location of the Project

The mining area is located at Khasra No. 607, 608, 609/1, 609/2, 609/3, 609/4, 610/1 & 610/2, Village- Ranijaraud, Tehsil –Simga, District- Baloda Bazar, and State: Chhattisgarh

Table No. 1.1 Latitude & Longitude of Lease Area

S. no.	Latitude	Longitude
1.	21°38'12.07"N	81°59'33.69"E
2.	21°38'10.24"N	81°59'33.63"E
3.	21°38'10.23"N	81°59'33.32"E
4.	21°38'08.26"N	81°59'33.24"E
5.	21°38'08.33"N	81°59'33.41"E
6.	21°38'08.62"N	81°59'32.44"E
7.	21°38'08.66"N	81°59'31.40"E
8.	21°38'09.67"N	81°59'31.41"E
9.	21°38'09.68"N	81°59'30.36"E
10.	21°38'08.15"N	81°59'30.11"E

11.	21°38'08.16"N	81°59'29.07"E
12.	21°38'11.79"N	81°59'29.26"E
13.	21°38'10.85"N	81°59'30.27"E
14.	21°38'13.09"N	81°59'30.52"E
15.	21°38'13.04"N	81°59'31.35"E
16.	21°38'12.50"N	81°59'31.40"E
17.	21°38'12.39"N	81°59'32.05"E
18.	21°38'12.09"N	81°59'32.56"E

Table No. 1.2 Salient Features of Project

<table>
<tr><td>Project Name</td><td colspan="3">Ranijaraud Limestone Mining Project</td></tr>
<tr><td>Location of mine</td><td colspan="3">Village : Ranijaraud
Tehsil: Simga
District : Baloda Bazar-Bhatapara
State : Chhattisgarh</td></tr>
<tr><td>Area</td><td colspan="3">1.219 Ha</td></tr>
<tr><td>Geo-Coordinates</td><td colspan="3"><table>
<tr><th>S. no.</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>1.</td><td>21°38'12.07"N</td><td>81°59'33.69"E</td></tr>
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Khasra No.	607, 608, 609/1, 609/2, 609/3, 609/4, 610/1 & 610/2		
Minerals of mine	Limestone Mining		
Total Mineable reserves	1,76,041 T		
Life of mine	6 years		
Max. Proposed production	28,425 T		
Method of mining	Open cast Semi Mechanized		
No of working days	300 days		
Water demand	Total water requirement is about 10.325 KLD =1.125 KLD (Drinking & Domestic Uses) + 7.2 (Plantation) KLD + 2 KLD (Dust Suppression) from nearby ponds and Ground Water.		
Sources of water	Water Tanker		
Man power	25		
Nearest railway station	Bhatapara Railway Station 11.85km in NNW		
Nearest airport	Bilasa Devi Kevat Airport, Bilaspur (About 41.56Km towards NNE direction)		
Seismic zone	Zone II		

Table 1.3: Environment Sensitivity

S.NO.	Particulars	Details

1	Nearest Railway Station	Bhatapara Railway Station 11.85km in NNW
2	Nearest Airport/Airstrip	Bilasa Devi Kevat Airport, Bilaspur (About 41.56Km towards NNE direction)
3	Nearest School	Primary School approx 2.97 km towards ENE direction.
4	Nearest Hospital	Primary Health Centre, Mopar approx 4.23km in East direction
5	Nearest Temple	Sant Guru Ghashi Das Temple.- About 0.19 km from the project site in South direction.
6	Built-up Area	Ranijaraud - About 0.58 km in W direction.
7	Nearest National/State Highway	NH-130 about 23.82 km in WNW direction SH-10 9.35 km in nne direction
8	Ecological Sensitive Areas (Wild Life Sanctuaries) within 10km radius.	None within 10 km radius.
9	Reserved / Protected Forest within 10km radius (Boundary to boundary distance)	None within 10 km radius.

1.2 GREEN BET PLANT

During the proposal period about 350 trees 1st year will be planted around the mining lease.

Area covered by afforestation is 7.5 sqm during conceptual period which will be rehabilitated providing plantation. Details of proposed plantation are mentioned below:

Table 1.2
TOTAL GREEN BELT PLAN

पौधों की कुल संख्या - 1219				
अवस्था	**प्रस्तावित वृक्षारोपण हेतु नियत स्थान**	**पौथो की प्रजातियां**	**पौधों की संख्या**	**टिप्पणी**
प्रथम वर्ष	बैरियर जोन	नीम, खमेर, सिरस, चिरोल, करंज, बबूल,	350	• 4 पौधों के बीच में एक सीताफल पौधे का रोपण किया जाएगा। • पौधों से पौधों के बीच की दूरी 3 मी. एवं

		सीताफल, अशोक, सिस्सू एवं अन्य स्थानीय प्रजातियां		पंक्ति से पंक्ति की दूरी 2.5 मी. और गड्ढे का आकार 0.70मी. x 0.70मी. x 0.70मी. एवं गड्ढे में गोबर की खाद और शेष मिट्टी से भरा जाएगा। • परिनाली के निर्माण के दौरान निकली हुई मिट्टी में सूबबूल, नीम, बबूल, प्रोसोपिस और अन्य स्थानीय प्रजातियों के बीज बुवाई की जाएगी। • ट्रेंच 45 सेमी x 45 सेमी x 45 सेमी विकसित की जाएगी। • तार की बाड़ की सुरक्षा के साथ।
प्रथम वर्ष	गैर खनन क्षेत्र	खमेर, चिरोल, करंज, महुआ, सेजा, बीजा, सीताफल एवं अन्य स्थानीय प्रजातियां	200	• 4पौधों के बीच में एक सीताफल पौधे का रोपण किया जाएगा। • पौधों से पौधों के बीच की दूरी 3 मी. एवं पंक्ति से पंक्ति की दूरी 2.5 मी. और गड्ढे का आकार 0.70मी. x 0.70मी. x 0.70मी. एवं गड्ढे में गोबर की खाद और शेष मिट्टी से भरा जाएगा। • सुरक्षा हेतु तार की बाड़ की जावेगी।
	परिवहन मार्ग	खमेर, चिरोल, करंज, बीजा, सीताफल, जंगल जलेबी, कदम एवं अन्य स्थानीय प्रजातियां	150	• परिवहन मार्ग के दोनों ओर एक पंक्ति में4 -5 फीट ऊंचाई पौधों के वृक्षारोपण किए जाएंगे। • पौधों से पौधों के बीच की दूरी 3 मी. एवं पंक्ति से पंक्ति की दूरी 2.5 मी. और गड्ढे का आकार 0.70मी. x 0.70मी. x 0.70मी. एवं गड्ढे में गोबर की खाद और शेष मिट्टी से भरा जाएगा। • पौधों की सुरक्षा हेतु प्रभावशाली 6 फीट ऊंचाई का ट्री गार्ड।

प्रथम वर्ष	ग्रामवासियो में वितरण हेतु) ग्राम पंचायत रानीजरौद	नीम, आम, कटहल, बेर, आँवला, हर्रा, सीताफल, महुआ, कबीट, नींबू, बहेरा, बेल एवं अन्य स्थानीय प्रजातियां	250	• ग्रामवासी इन पेड़ों को अपने खेतों की मेड़ पर लगाएंगे।
	ग्राम पंचायत के सहयोग से ग्राम पंचायत रानीजरौद के चिन्हित क्षेत्र में	नीम, आम, कटहल, बेर, आँवला, हर्रा, सीताफल, महुआ, कबीट, नींबू, अचार एवं अन्य स्थानीय प्रजातियां	150	• गड्ढे का आकार 0.70मी. x 0.70मी. x 0.70मी. एवं गड्ढे में गोबर की खाद और शेष मिट्टी से भरा जाएगा। • सुरक्षा हेतु तार की बाड़ की जावेगी।
	ग्राम पंचायत रानीजरौद के प्राथमिक शाला, आंगनवाड़ी एवं ग्राम पंचायत परिसर में	कदम, नीम, खमेर, अशोक, सिस्सू. एवं अन्य स्थानीय प्रजातियां	119	• गड्ढे का आकार 0.70मी. x 0.70मी. x 0.70मी. एवं गड्ढे में गोबर की खाद और शेष मिट्टी से भरा जाएगा। • सुरक्षा हेतु परिसर में बाउंड्री वाल की व्यवस्था है।

The following characteristics should be taken into consideration while selecting plant species for green belt development and tree plantation.

- They should be fast growing and tall trees.
- They should be perennial and evergreen.
- They should have thick canopy cover.
- Plantation should be done in appropriate alternate rows around the proposed site to prevent lateral pollution dispersion.
- The trees should maintain regional ecological balance and conform to soil and hydrological conditions. Indigenous species should be preferred.

1.3 BASE LINE DATA

This section contains the description of baseline studies of the 10 Km radius of the area surrounding “Ranijaraud Limestone Quarry Mine Project”. 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) Biological

(e) Noise

(f) Socio-economic

1.4 AMBIENT AIR QUALITY

Ambient Air Quality Monitoring reveals that the maximum & minimum concentrations of $PM_{2.5}$ for all the 8 AQ monitoring stations were found to be 55.8µg/m^3 at AQ-8 and 42.1µg/m^3 at AQ-6, respectively. The maximum & minimum concentrations of PM_{10} for all the 8 AQ monitoring stations were found to be 93.67µg/m^3 at AQ-8 and 72.12µg/m^3 at AQ-5, respectively.

As far as the gaseous pollutants SO_2 and NO_2 are concerned, the prescribed CPCB limit of 80µg/m^3 and 100µg/m^3 for residential and rural areas has never surpassed at any station. The maximum & minimum concentrations of SO_2 were found to be 10.2µg/m^3 at AQ-6&5.2µg/m^3 at AQ-1 respectively. The maximum & minimum concentrations of NO_2 were found to be 21.9µg/m^3 at AQ-8 & 13.5µg/m^3 at AQ1 respectively

Free SiO_2 (in µg/m^3):

SiO_2	AQ1	AQ2	AQ3	AQ4	AQ5	AQ6	AQ7	AQ8
Max	1.61	1.95	1.39	1.48	1.52	1.63	1.21	1.56
Min	1.28	1.39	1.45	1.54	1.38	1.87	1.57	1.82

The standard for Respirable dust is 3 µg /m^3 for 8 hour of working period where free silica content should not exceed 5% as prescribed by Directorate General of Mines Safety.

Observations:

The minimum & maximum concentrations of SiO_2 were found to be 1.21µg/m^3 at AQ7 & 1.95 µg/m^3 at AQ2 respectively.

1.5 NOISE ENVIRONMENT

Noise monitoring reveals that the maximum & minimum noise levels at day time were recorded as 53.7dB (A) at NQ-2 &49.4 dB (A) at NQ-4 respectively. The maximum & minimum noise levels at night time were found to be 40.6 dB (A) at NQ-1& 39.2dB (A) at NQ-4 respectively.

There are several sources in the 10 km radius of study area, which contributes to the local noise level of the area. On the commencement of the project, the sound from traffic activities will add to the ambient noise level of the area. This will be kept under check by taking proper suggestive measures.

1.6 WATER ENVIRONMENT

The water quality in the impact zone was assessed through physico- chemical and bacteriological analysis of ground and surface water samples. The results have been compared with the drinking water quality standards specified in IS: 10500. It was observed that all the physico chemical parameters and heavy metals from surface and ground water samples are below stipulated drinking water standards.

All the ground water samples analyzed can be considered fit for drinking purpose in the absence of alternate sources.

Comparing the values of pH, DO, BOD and total coliforms with 'Use based classification of surface waters' published by Central Pollution Control Board; it can be seen that all the analyzed surface waters can be compared with class "B" and can be used as "Outdoor bathing (Organized)".

1.7 SOIL ANALYSIS REPORT

Physical characteristics of soil were characterized through specific parameters viz bulk density, porosity, water holding capacity, pH, electrical conductivity and texture. Soil pH plays an important role in the availability of nutrients. Soil microbial activity as well as solubility of metal ions is also dependent on pH. In the study area, variations in the pH of the soil were found to be neutral (7.11 to 7.59). Electrical conductivity (EC) is a measure of the soluble salts and ionic activity in the soil. In the collected soil samples the conductivity ranged from 645-775µmhos/cm.

The soils with low bulk density have favorable physical condition where as those with high bulk density exhibit poor physical conditions for agriculture crops.

1.8 BIOLOGICAL ENVIRONMENT

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

1.9 WATER REQUIREMENT

The total water consumption in the Mine is about 19.925 KLD. The water is used in the following purposes.

- For dust suppression & mining allied activity.
- For drinking & domestic consumption.
- For greenbelt development.

This water will be met from old bore well, hand pump and mine sump located in ML area.

The following table shows the water balance of the mine activity:

Table No. 1.3

WATER CONSUMPTION (KLD)

Activity	Water requirement (KLD)
Dust suppression	**2.00**
Domestic	**1.125**
Plantation	**16.8**
Total	**19.925**

1.10 WASTE DUMP DISPOSAL

There is Dust (overburden) overlain the deposit. Dumping of waste rock is not required.

1.10.1 LAND FOR DISPOSAL OF WASTE WITH JUSTIFICATION:

Not required as the available soil will be used to develop area for plantation; weathered waste/rejects will also be used in repair and maintenance of roads.

1.11 SOCIO-ECONOMICS

The mine area does not cover any habitation. Hence the mining activity does not involve any displacement of human settlement. No public buildings, places, monuments etc exist within the lease area or in the vicinity. The mining operation will not disturb/ relocate any village or need resettlement. Thus no adverse impact is anticipated.

The impact of mining activity in the area is positive on the socio-economic environment of the

region. Ranijaraud Limestone Quarry Mine Project is providing employment to local population and it will be give preference to the local people whenever there is requirement of man power.

1.12 OCCUPATIONAL HAZARDS AND SAFETY

Occupational safety and health is very closely related to productivity and good employer-employee relationship. The factors of occupational health in Ranijaraud Limestone Quarry Mine Project are mainly dust and land degradation. Safety of employees during operation and maintenance etc. shall be as per Mines rules and regulations.

To avoid any adverse effect on the health of workers due to various pollutants, sufficient measures relating to safety and health will also be practiced:

- Provision of rest shelters for mine workers with amenities like drinking water etc.
- All safety measures like use of safety appliances, such as dust masks, helmets, shoes, safety awareness programs, awards, posters, slogans related to safety etc.
- Training of employees for use of safety appliances and first aid in vocational training center.
- Regular maintenance and testing of all equipment as per manufacturers' guidelines.
- Periodical Medical Examination (PME) of all workers by a medical Officer
- First Aid facility is provided at the mine site.
- Close surveillance of the factors in working environment and work practices which may affect environment and worker's health.
- Working of mine as per approved mining plan and environmental plans.

1.13 ENVIRONMENTAL MANAGEMENT PLAN

The mining activities involve, excavation, loading, haulage and transportation of mineral. These activities lead to generation of air borne dust, which can cause air pollution in and around the mining lease area, if appropriate control measures are not taken. Similarly mining causes Land Degradation, Noise and Water Pollution etc. in the area.

In order to minimize impacts of mining on different environmental parameters and to keep air and water quality within prescribed limits of CPCB, a rapid Environmental Management Plan (EMP) is prepared to strictly follow it. This helps in resolving all environmental and ecological issues due to mining in the area. The environmental management plan includes all measures and safety precautions necessary for safe mining along with rehabilitation measures for mined out areas.

ANNUAL EMP COST			
S NO.	**Particulars**	**Budget Provisions (Rs)**	
		Capital	**Recurring**
1(a)	Overhead water sprinkling facility with solar pump for outgoing and incoming transportation vehicles for haul and transportation.	1,30,000	15,000
1(b)	Cost of Water own (4000 liter capacity) 2 tanker x 200 Rs./per day X 300 days	Nil	1,20,000
2	Four Settling Tank [2.5m (W) x 10m (L) 2m (D)] Garland drain [659m (L) x 2m (W) x 1.5 m(D)]	70,000	20,000
3	Prepare & Maintenance of approach road (Max. Road length 300 m , Width 6.0m) 300m @ 600Rs./Meter	1,80,000	15,000
4	Monitoring twice a year (Air , Water & Noise twice a year)	Nil	40,000
5	Plantation (1219 plants will be planted & Distribution during the five year) = 1219 Per year x 150/sapling	1,82,850	90,000
6	Grazing Land	40,000	10,000
7	Wire Fence 659 m x200	1,31,800	45,000
Labour Welfare			
8	Drinking Water Facility & Temporary rest shelter (25 x 15 feet)	70,000	20,000
9	Separate toilets for Male & Female No. of 2	1,80,000	15,000
10	Occupational health Survey 25 labour @ 500 Rs. = 12500Rs./twice per year x 2	Nil	25,000
11	PPES to Work (Helmet shoes, gloves, goggle etc) , 25 labor @1200 Rs.	30,000	5000
12	First Aid Kits , Number of kits 5	40,000	10,000
13	Fire Safety (1 nos.) , @ 30,000	1,11,600	20,000
Solid Waste Management			

a.	Bins 2 Nos.	1500	5,000
b.	Pit and Composed	5000	
c.	Transport of Dry Waste	5000	
14	Vehicle Maintenance + PUC Certification	Nil	25,000
15	Signage and Caution Board	5,000	1,000
	Total EMP Cost	**11,82,750**	**4,81,000**

1.15 CONCLUSION

As discussed, it is safe to say that the project is not likely to cause any significant impact on the ecology of the area, as adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigates technique, as well as to control the pollutants released from the premises of the Proposed Mine.

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