

DRAFT ENVIRONMENT IMPACT ASSESSMENT REPORT & ENVIRONMENT MANAGEMENT PLAN of

**Chaweli -Dumardihkala cluster Limestone (Low grade) Quarry at
Village – Chaweli and Dumardihkala, Tehsil: Khairagarh District: Rajnandgaon,
State: Chhattisgarh
Total Area 17.55 ha**

Executive Summary English

List of Applicant

S. No.	Project Name	Location			Minerals	Area (in ha.)
		Village	Tehsil			
1	Girish Talreja	Chaweli	Rajnandgaon	Lime Stone	1.581	SIA/CG/MIN/42409/2019
2	Girdhari lal Talreja	Chaweli	Rajnandgaon	Lime Stone	0.870	SIA/CG/MIN/43944/2019
3	Naresh lal Talreja	Chaweli	Rajnandgaon	Lime Stone	0.607	SIA/CG/MIN/42455/2019
4	Ramesh lal Talreja	Chaweli	Rajnandgaon	Lime Stone	0.709	SIA/CG/MIN/42466/2019
5	Shashikala Gupta	Chaweli	Rajnandgaon	Lime Stone	1.008	SIA/CG/MIN/43867/2019
6	Bhagchand Jain	Chaweli	Rajnandgaon	Lime Stone	2.176	SIA/CG/MIN/42470/2019
7	Maninder Singh Garcha	Dumardihkala	Rajnandgaon	Lime Stone	0.608	SIA/CG/MIN/42860/2019
8	Shiv Agrawal	Dumardihkala	Rajnandgaon	Lime Stone	0.526	SIA/CG/MIN/43582/2019
9	Shyam Agrawal	Dumardihkala	Rajnandgaon	Lime Stone	1.214	SIA/CG/MIN/43978/2017
10	Shankar Gyanchandani (Pawan Wadhwa)	Dumardihkala	Rajnandgaon	Lime Stone	0.631	SIA/CG/MIN/43830/2019
11	Yogesh Dakaliya	Dumardihkala	Rajnandgaon	Lime Stone	0.404	SIA/CG/MIN/43975/2017
12	Divya Dakaliya	Dumardihkala	Rajnandgaon	Lime Stone	1.663	SIA/CG/MIN/43969/2017
13	Abhay Jain	Dumardihkala	Rajnandgaon	Lime Stone	0.587	SIA/CG/MIN/128184/2020
14	Ritesh Jain	Dumardihkala	Rajnandgaon	Lime Stone	0.760	SIA/CG/MIN/43866/2019
15	Hitendra Bagga	Dumardihkala	Rajnandgaon	Lime Stone	2.773	SIA/CG/MIN/180909/2020
16	Vijay Agrawal	Dumardihkala	Rajnandgaon	Lime Stone	0.480	SIA/CG/MIN/43982/2019
17	Nitish Agrawal	Dumardihkala	Rajnandgaon	Lime Stone	0.955	SIA/CG/MIN/43984/2019

Indian Mine Planner & Consultant

NABET/EIA/1821/IA0037

ACCREDITED BY NABET UNDER "A" CATEGORY FOR OPEN CAST MINES

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EXECUTIVE SUMMARY

The purpose of the Environmental Impact Assessment (EIA) study is to ensure that all impacts whether direct or indirect and particularly environmental, social and economic impacts are fully examined and addressed.

EIA is different from other decision-making tools like environment audit, which is conducted on existing projects, while the EIA is applied to new projects and the expansion of existing projects. EIA uses the techniques of science, economics, sociology, geology etc. while assessing the project because it is dealing with events, which have not yet occurred, may not occur, but whose chances of occurrence may be strong in future. There are various other tools like energy analysis, cost-benefit analysis, environment management systems and risk analysis. EIA is by far the most suitable tool for any proposed project. It is also one of the most popular decision-making tools and has been integrated in the regulatory system of many countries.

There are several good mining practices in India. These practices include measures such as

- Reduces water and energy consumption,
- Minimize land disturbance which can avoid the damage of flora, fauna, agriculture land and settlements
- Minimizing Waste production by reusing the waste in backfilling
- Preventing soil, water and air pollution at mine sites
- Land reclamation & mine closure.
- Generating employment in local areas.

1.1 PROJECT DESCRIPTION

The present project is a cluster of limestone (Low grade) which proposes production of 314,707 TPA of Limestone in the mine lease area of 43.335 Acre (17.55 ha.) The project is

located in Khasra No. 392(P), 393, 394, 398(P); 360; 487; 487; 391/2; 401(P), 402/2 (P), 402/3, 404/2, 404/3, 404/4, 404/5 & 405; 106/2&3; 125(P); 119; 23 (P); 37/3; 53/3, 4, 5, 6, 7, 8, 9, 10, & 55/2; 107; 116/3 (P); 117 (P); 103/5, 106/1 Village – Chaweli- and Dumardihkala, Tehsil & District- Rajnandgaon, State–Chhattisgarh

The project is limestone mine with mine lease area 17.55 ha and production capacity **314,707 TPA** & estimated project cost is Rs. **425 Lakhs**.

The limestone will be exploited by semi-mechanized method. Loading will be done by by the loader. The mineral is not meant for captive use. The extracted limestone will be used for different purposes. Lime Stone (Low Grade) have the great importance in making clinkers in steel plants & as building material & for road metal works. Bigger size stone as blocks are used to fill the foundation of building while small pieces are usually mixed with cement and other ingredients to create mortar for building. As a building material, stones have good demand in the market. Hence, small scale mining of limestone is a good source of earning of local villagers for their livelihood.

S/n	Items	Details
1.	Project Location	
	Khasra No.	392(P), 393, 394, 398(P); 360; 487; 487; 391/2; 401(P), 402/2 (P), 402/3, 404/2, 404/3, 404/4, 404/5 & 405; 106/2&3; 125(P); 119; 23 (P); 37/3; 53/3, 4, 5, 6, 7, 8, 9, 10, & 55/2; 107; 116/3 (P); 117 (P); 103/5, 106/1
	Village	Chaweli and Dumardihkala
	Tehsil	Rajnandgaon
	District	Rajnandgaon
	State	Chhattisgarh
2.	Latitude & Longitude (Girish Talreja)	21°13'26.70" to 21°13'29.65" North 81° 02'32.40" to 81° 02'32.95" East
	Latitude & Longitude (Girdhari lal Talreja)	21°13'38.20" to 21°13'41.85" North 81°02'16.24" to 81°02'21.13"East

S/n	Items	Details
	Latitude & Longitude (Naresh lal Talreja)	21°13'37.03" to 21°13'40.10" North 81°02'27.30"to 81°02'30.29"East
	Latitude & Longitude (Ramesh lal Talreja)	21°13'33.42 48" to 21°13'37.12" North "81° 02'35.94"" to 81° 02'39.58""East"
	Latitude & Longitude (Shashikala Gupta)	21°13'32.46" to 21°13'35.70" North 81° 02'29.04" to 81° 02'36.03"East
	Latitude & Longitude (Bhagchand Jain)	21°13'21.88" to 21°13'28.04" North 81° 02'26.16" to 81° 02'33.11"East
	Latitude & Longitude (Maninder Singh Garcha)	21°013'52.45" to 21°13'55.38" North 81°01'09.96"to 81° 02'12.84""East
	Latitude & Longitude (Shiv Agrawal)	21°14'10.44" to 21°14'08.69" North E 81° 01'41.24"to81°01'44.74"East
	Latitude & Longitude (Shyam Agrawal)	21°14'02.28" to 21°14'04.95" North 81°01'47.93"to81° 01'50.92""East
	Latitude & Longitude (Shankar Gyanchandani)	21°14'24.76" to 21°14'26.06" North 81°01'17.09" to 81°01'15.05" East
	Latitude & Longitude (Yogesh Dakaliya)	21°14'16.98" to 21°14'19.33" North 81° 01'31.35"to81° 01'33.74" East
	Latitude & Longitude (Divya Dakaliya)	21°14'09.21 to 21°14'12.98" North 81° 01'42.28"to 81° 01'48.73" East
	Latitude & Longitude (AbhayJain)	21°13'50.90" to 21°13'53.49" North 81° 02'12.98"to81° 02'16.31" East
	Latitude & Longitude (Ritesh Jain)	21°13'49.44" to 21°13'50.00"North 81° 01'47.76" to 81° 01'51.40" East
	Latitude & Longitude (Hitendra Bagga)	21°13'54.85" to 21°13'51.50" North 81° 01'41.54" to 81° 01'41.58" East
	Latitude & Longitude (Vijay Agrawal)	21° 13'02.60" to 21° 13'02.65" North 81° 04'28.32" to 81° 04'30.99" East
	Latitude & Longitude (Nitish Agrawal)	21° 13'54.89" to 21° 13'56.88" North 81° 02'5.46" to 81° 02'03.92" East
	Topo sheet No	64 G/4
	Proponent & ML Area	Girish Talreja (1.581 ha); Girdhari lal Talreja (0.870 ha); Naresh lal Talreja (0.607 ha); Ramesh lal Talreja (0.709 ha); Shashikala Gupta (1.008 ha); Bhagchand Jain (2.176

S/n	Items	Details
		ha); Maninder Singh Garcha (0.608 ha); Shiv Agrawa (0.526 ha); Shyam Agrawal (1.214 ha); Shankar Gyanchandani (0.631 ha); Yogesh Dakaliya (0.404 ha); Divya Dakaliya (1.663 ha); AbhayJain (0.587 ha); Ritesh Jain (0.786 ha); Hitendra Bagga (2.773 ha); Vijay Agrawal (0.48 ha), Nitish Agrawal (0.955 ha) (Total lease - 17.55 ha)
	Proposed production	314,707 TPA
2.	Demography within 10 km radius (as per Census 2011)	
	Total No. of Households	55777
	Total Population	263339
	Total Male	131841 (50)
	Total female	131498 (50)
3.	Climatology (From Dec 2020 to February 2021)	
	Maximum Temperature (°C)	39.6
	Minimum Temperature (°C)	10.4
	Relative Humidity (%)	15 to 96
	Average Rainfall (mm)	5.2

1.1.1 Working Depth

- The Deposits occur in the whole lease area. During the entire lease period, the deposit will be worked from the top surface to 15 meter BGL or above the ground water table, whichever is less. The ultimate depth of the open cast pits will be 15 m below ground level.
- Mining operation will be above ground level.
- The mining will not be allowed below the water table.
- No mining operation will be allowed in forest area.
- The contractors will abide by Chhattisgarh Minor Mineral Rules.

- The contractors will abide at the time of mining with terms and condition as laid down under mines act, 1952 and mines and minerals (Regulating and Development)act,1957, Forest (conservation)Act,1980.
- The contractors will abide by provision of mines act,1952,Interstate migrant work man act, the contractor with the satisfaction of competent authority will provide drinking water ,rest shelter, first aid box, welfare facilities as central and state government labor laws.

1.1.2 Haulage & Surface Transport

Mode of transportation of limestone is by trucks/tractor trolley of 8-10 tonnes capacity. Trucks of larger size may also be used where the material is to be carried to a long distance. The trucks will be properly covered with tarpaulin. The water will be sprinkled or dust suppression twice a day or as per requirement. Also trees will be planted along the approach road as a part of Green belt development and grasses will be planted to avoid soil erosion.

1.1.3 Anticipated Life of mine

Anticipated life of mine range from 5 to 30 years.

1.1.4 Manpower

The mine will provide direct and indirect employment. Directly employment of about **185 persons** (Skilled and Un-skilled both) will be employed for extraction/collection, breaking, sorting, sizing/ powdering and loading of limestone in the mining area. All the workers will be employed as contract laborers. Additional employment will be created through transportation.

1.1.5 Water Requirement

The water required is mainly for dust suppression, green belt development, drinking and other domestic purpose during mining operations. Water requirement will meet from hired Tanker supply. The total water requirement will be approx. **153 KLD**.

1.1.6 Project Cost

The total cost of the project is **Rs. 425/- Lakhs**. The project generates employment opportunities.

1.2 DESCRIPTION OF THE ENVIRONMENT

The Proposed cluster of limestone (Low grade) Mine Located at Khasra No. 392(P), 393, 394, 398(P); 360; 487; 487; 391/2; 401(P), 402/2 (P), 402/3, 404/2, 404/3, 404/4, 404/5 & 405; 106/2&3; 125(P); 119; 23 (P); 37/3; 53/3, 4, 5, 6, 7, 8, 9, 10, & 55/2; 107; 116/3 (P); 117 (P); 103/5, 106/1 Village – Chaweli and Dumardihkala, Tehsil & District- Rajnandgaon, State–Chhattisgarh to be developed by Mr. Girish Talreja; Girdhari lal Talreja; Naresh lal Talreja; Ramesh lal Talreja; Shashikala Gupta; Bhagchand Jain; Maninder Singh Garcha; Shiv Agrawal; Shyam Agrawal; Shankar Gyanchandani; Yogesh Dakaliya; Divya Dakaliya; Ritesh; Hitendra Bagga; Vijay Agrawal and Nitish Agrawal. Geographical location of mine lease area is covered under Survey of India Toposheet No. 64 G/3 & 64 G/4.

1.2.1 Baseline Environment Status

Soil:

- It has been observed that the pH of the soil in the study area ranged from 7.08 to 7.82. The pH of the soil is slightly alkaline.
- The electrical conductivity was observed to be in the range of 386 to 435 $\mu\text{S}/\text{cm}$.

- The nitrogen values range between 0.063 to 0.091 %. The nitrogen content in the study area is very less.
- The phosphorus values range between 26.82 to 32.46 mg/kg, indicating that the phosphorus content in the study area falls in medium category.
- The potassium values range between 288 to 348 kg/ha.
- It can be observed that the soil quality- does not indicate any noticeable pollution and contamination. The soil quality can be improved by application offer utilizes in order to grow vegetation / plantation.

Source: M/s Noida Testing Laboratory, Noida,

1.2.2 Interpretation of the ground water samples analysis results:

- The analysis results indicate that the pH ranges in between 7.32 to 7.62.
- Total hardness was observed to be ranging from 252.72 to 316.17 mg/l.
- Fluorides were found to be in the range of 0.18 mg/l to 0.28 mg/l.
- The Total Dissolved Solids (TDS) concentrations were found to be ranging in between 426 – 582 mg/l and Iron is found in between 0.12 mg/l to 0.24 mg/l and zinc found ranging between 0.04 mg/l to 0.12 mg/l.

1.2.3 Interpretation of Surface Water Quality:

- The analysis results indicate that the pH value is 7.12 to 7.54. which is well within the specified standard of 6.5 to 8.5;
- The TDS was observed as 300 to 302mg/l. The maximum TDS of 624 mg/l was observed at SW1 and the minimum TDS of 582 was observed at SW2.
- The chlorides were found as 72 to 78 mg/l.
- The sulphates were found as 132.2 to 152.3 mg/l. It is observed that sulphates are within limits;

- Total hardness ranges between 612 to 624 mg/l. It is observed that hardness of surface water is within permissible limits of IS: 10500 "Specifications for Drinking Water".
- Metals: Iron is found in between 0.08 -0.16 mg/l

The surface water quality in the study area does not indicate any industrial contamination.

Note: For in details, Monitoring report is attached as Annexure with this report.

1.2.4 Air Results

The Ambient Air Quality Monitoring of nine monitoring stations indicates that minimum concentrations of PM₁₀ are 43.76 µg/m³ at AAQ6 and maximum 65.33 µg/m³ at AAQ4. The results of PM_{2.5} reveal that the minimum concentration of 25.65 µg/m³ at AAQ7 while maximum concentration of 40.54µg/m³ is found at AAQ1 in the month of March. These values for PM10 and PM2.5 are within prescribed CPCB limit of 100 µg/m³ and 60 µg/m³ respectively for residential and rural areas at all stations.

The gaseous pollutants SO₂ and NO_x are 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 5.15µg/m³ at AAQ7& 9.87µg/m³ at AAQ1 respectively. The minimum & maximum concentrations of NO_x were found to be 9.48µg/m³ at AAQ7&16.12 µg/m³ at AAQ3 respectively.

1.2.5 Noise Results

Monitored Noise levels has captured noise from other sources also in the area .Noise varies from 48.6 dB (A) to 61.1 dB (A) during day time and during night noise levels ranges from 36.2 dB(A) to 54.9 dB(A). Thus noise levels at all locations were observed to be within the prescribed limits. From the above study it can be concluded that noise levels in the study area are well within the prescribed limits as prescribed by the CPCB.

1.3 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The proposed mining operations are not anticipated to raise the concentration of the pollutants beyond prescribed limits. However, the measures are suggested to mitigate any harmful impacts of pollutants like plantation of trees along haul roads, especially near settlements, to help to reduce the impact of dust on the nearby villages; planning transportation routes of mined so as to reach the nearest paved roads by shortest route; regular water sprinkling on unpaved roads to avoid dust generation during transportation etc. Some of impacts may be due to increase in the PCU/hr. Transportation of mineral should be minimized in the morning and evening and cannot be done in night. Access roads will not encroach into the riparian zones. Fugitive emission from vehicle movement will form a layer in leaves thus reducing the gaseous exchange process. The impact on the present noise levels due to mining operations will be restricted to the work zone areas only. The impact on the ambient noise levels will not be felt at the settlement areas due to masking effect with the existing noise levels. There is no drilling and blasting envisaged in the project, so there is no impact of vibration due to this project. Hence, the noise levels and vibration impact due to the proposed mining operations on community will be minimal. There will be no waste water generation from the proposed mining activity except sanitary waste water generation that will be treated in septic tanks and will be used for plantation purpose. The municipal solid waste generated at mine site will have adverse impact on human health. The mining activities will be done in a systematic manner by maintaining the road infrastructure and vehicle transport which will be protective measure for preserving the topography and drainage in the area. The ownership will not be changed as the land has been taken on contract which will be returned as it is after the contract period is over. No human settlement should be permitted in the lease mining or nearby area. No mining will be carried out during the rainy season to minimize impact on aquatic life. Socio-economic status of the people will be improved. The local people have been provided with either direct employments or indirect employment such as business, contract works and development work like roads, etc. and other welfare amenities such as medical facilities,

conveyance, free education, drinking water supply etc. Except dust generation, there is no source which can show a probability for health related diseases. Regular water sprinkling will be done with sprinkle mounted tankers and dust masks will be provided to the workers. All workers will be subjected to medical examination as per Mines Rule 1955 both at time of appointment and at least once in a year. Medical camps will be organized for this activity. Insurance of all employees as per the rules will also be carried out. No displacement is involved for the proposed project. Hence, R&R plan is not applicable for the project.

1.4 ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)

Consideration of alternatives to a project proposal is a requirement of EIA process. During the scoping process, alternatives to a proposal can be considered or refined, either directly or by reference to the key issues identified. A comparison of alternatives help to determine the best method of achieving the project objectives with minimum environmental impacts or indicates the most environmentally friendly and cost effective options.

The proposed project is mining of limestone. It is a site specific mining project; therefore no alternate site has been selected. From the nature and extent of the deposit, the reserve and the quality have been proved with adequate degree of reliability.

1.5 ENVIRONMENTAL MONITORING PROGRAM

In order to maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will complied as per conditions. Regular Monitoring of all the environmental parameters *viz.*, air, water, noise and soil as per the formulated program based on CPCB and MoEF&CC guidelines will be carried out every year in order to detect any changes from the baseline status. In order to maintain the environmental quality within the stipulated standards, regular monitoring of various environmental components is necessary which will complied as per conditions. For these lessees **Mr. Girish Talreja; Girdhari lal Talreja; Naresh lal Talreja; Ramesh lal Talreja; Shashikala Gupta; Bhagchand Jain; Maninder Singh Garcha; Shiv Agrawal; Shyam Agrawal; Shankar Gyanchandani; Yogesh**

Dakaliya; Divya Dakaliya; Ritesh; Hitendra Bagga; Vijay Agrawal and Nitish Agrawal. has formulated an Environment Policy of the mine and constituted an Environmental Management Cell and committed to operate the proposed mine with the objectives mentioned in approved Environment Policy. Regular Monitoring of all the environmental parameters viz., air, water, noise and soil as per the formulated program based on CPCB and MoEF&CC guidelines will be monitored through NABL/MoEF & CC approved laboratory.

1.6 ADDITIONAL STUDIES

This is a draft EIA report Occupation studies and other additional studies are given in **Chapter-7**

1.7 PROJECT BENEFIT

The management will recruit the highly skilled and semi-skilled workers from the nearby villages. The project activity and the management will definitely support the local Panchayat and provide other form of assistance for the development of public amenities in this region. The management will contribute to the local schools, dispensaries for the welfare of the villagers. A suitable combination of trees that can grow fast and also have good leaf cover will be adopted to develop the green belt. It is proposed to plant **2000 no's** of native species per hectare along with medicinal trees during the mining plan period. The project proponent has allocated budget for CER Activities. The officers of the SPCB will strictly monitor the compliance of lease holder in this regard. Other than this social development of village will be considered as per social activities.

1.8 ENVIRONMENTAL COST BENEFIT ANALYSIS

As per EIA Notification vide Gazette Notification No. S.O. 1533 Dated: 14thSept., 2006 and amendments thereof, Appendix III, Generic Structure of EIA, SL. No. 9, “**Environmental Cost Benefit Analysis**” is applicable only, if the same is recommended at the Scoping stage.

As per the Term of Reference points issued by SEAC/SEIAA, Raipur, Chhattisgarh for the proposed project, the Environmental Cost Benefit Analysis is not mentioned.

1.9 ENVIRONMENTAL MANAGEMENT PLAN

As per above discussion there is no measure impact on the environment due to mining except fugitive emission in the form of dust generated during handling and loading of mineral. The adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Plantation development will be carried out in the mine premises, along the approach roads, around Govt. buildings, schools approx. **2000 trees** per hectare during next three years. It will prove an effective pollution mitigate technique, and help avoid soil erosion during monsoon season. Employment opportunities will be provided to the locals only as providing extraction of minerals from the mine site is the only prevailing occupation for them for their livelihood.

1.10 CONCLUSION

From the baseline study and various discussion on probable impacts of all the operational activity, it has been concluded that this project will more positive impact and will generate the revenue and employment in the area. On the above facts and baseline study, the proposed activity is recommended for the commencement with proper mitigation measure as suggested.

The proposed project is expected to provide employment to local people in different activities such as mining, sizing (sieving) transportation and plantation activities. The revenue generated from the production and sale of mineral will also add to the exchequer of government, which in turn will help in the growth of state economy. Also, as the proposed mine area lies in the flood plain, hence the removal of extracted material will minimize the chances of flood disaster in the area. Land outside the river bed will be made utilizable for the purpose of agriculture; hence the mining will help in improving the fertility of soil. Excavated material will cater the huge increasing demand of mineral in the fast growing construction industry of Chhattisgarh; Madhya Pradesh & Orissa etc. The project is not

expected to have any major adverse impact on the environment and whatever impacts are anticipated during the EIA study will be minimized with the help of suitable mitigation measures. Hence it is concluded that the project is economically feasible and financially beneficial to the local people as well as to the country.