

# **EXECUTIVE SUMMARY OF DRAFT EIA REPORT**

FOR

## **PROPOSED LIMESTONE MINING PROJECT (Minor mineral)**

**Total Mineral is 5.693 ha**

**At**

**Village :- Lalpur , Tehsil - Raipur, District-Raipur, State- Chhattisgarh**

### **APPLICANT**

**Shri Harshit Sharma  
S/o. Late Shri Yogendra Sharma  
House No. 14, opp. Green Meadows,  
City/Post-Avani Pride, Daldal, Seoni, Mowa Raipur & Tehsil--Raipur,  
District-Raipur(Chhattisgarh), Pin – 492007**

**Shri Akhilesh Kumar Singh  
S/o Late Ramjatan Singh  
Balaji Colony , Mandir Hasoud  
Dist- Raipur 492101(CG)**

### **ENVIRONMENTAL CONSULTANT**



**Environmental Consultancy & Laboratory  
(Lab. Gazetted by MoEF-Govt. of India)**

**M/s. ULTRA-TECH  
ENVIRONMENTAL LABORATORY AND CONSULTANCY**

**NABET Accredited EIA Consulting Organization  
NABET Accreditation Number: NABET/EIA/2023/RA0194**

**December 2021 to March 2022**

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## EXECUTIVE SUMMARY

### 1.0 Introduction

The proposed project of Lalpur Limestone mines are existing mines situated near Village - Lalpur, Tehsil - Raipur, District : Raipur, State :- Chattishgarh.

**For Harshit Sharma** mines lease was originally granted for 20 years from 30.07.2002 to 29.07.2022, which is extended for 50 year from the date of grant of mining lease i.e. from 30.07.2002 to 29.07.2052.

On 30/07/2002 Mining lease agreement was executed in favor of Late Shri Yogendra Sharma for 20 years from 30/07/2002 to 29/07/2022.

From year 2002 to 2011 working in the mine was continued, thereafter no mining activity performed in the lease area up to this date.

On 25.05.2013, after sad demise of Shri Yogendra Sharma, the mining lease was transferred to his son Mr. Harshit Sharma, vide State Govt. order no - F3-6/2018/12 dated 27/05/2020

On 08/06/2020 order of Collector was issued vide letter no. 280/Khanij/M.L./2020 for extension of lease period for 50 year from 30/07/2002 to 29/07/2052.

On 22/07/2020 Supplementary Lease Agreement executed in the name of Shri Harshit Sharma

On 10.08.2021 Modified Mine Plan was approved for the five year from 2021-22 to 2025-26 by Regional Mine Controller of Indian Bureau of Mines

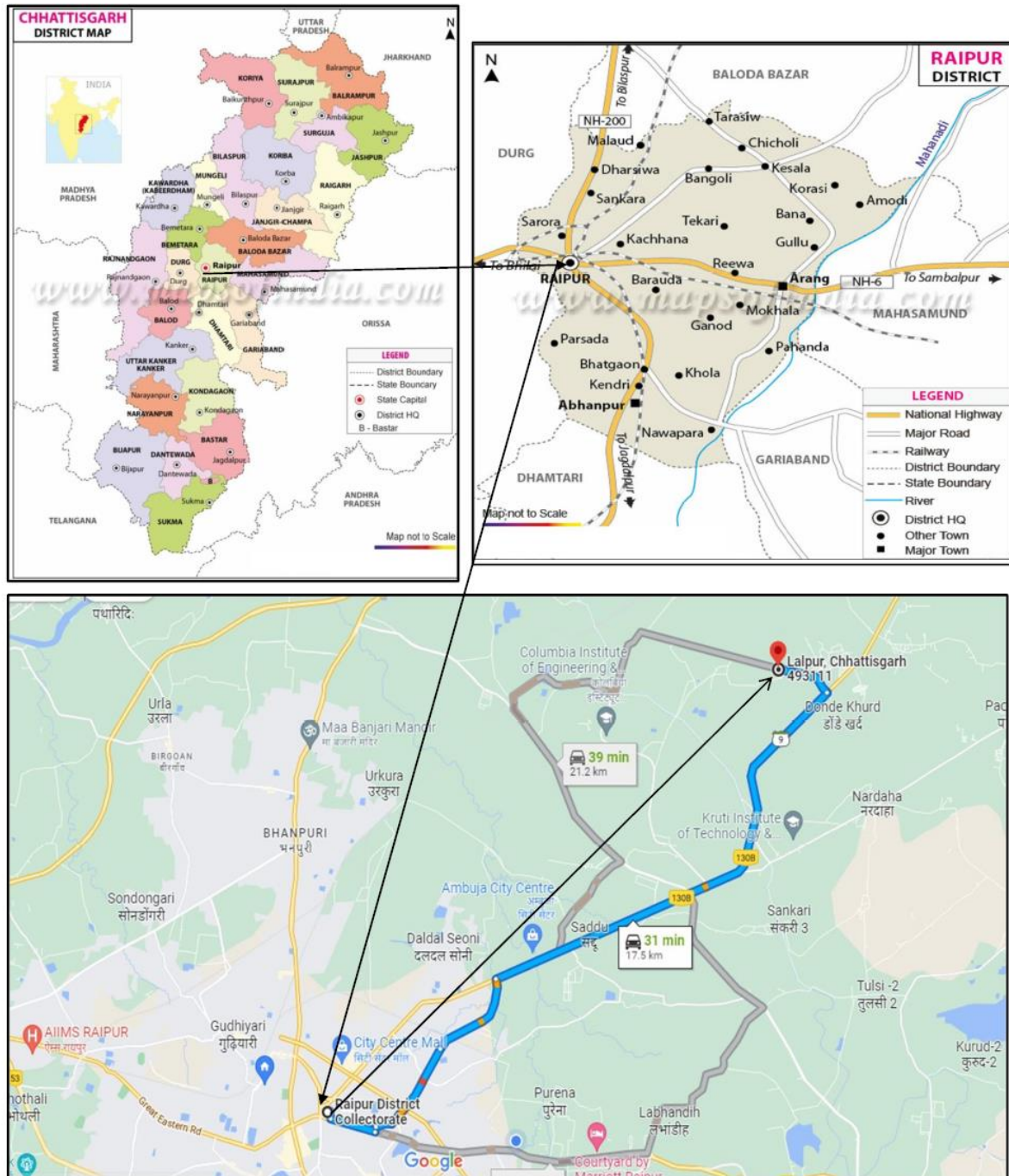
On 13.12.2021 application filed before SEIAA CG for TOR as per various order of MOEF

**For Akhilesh Singh** mines lease was originally granted for 20 year from 26.07.1999 to 27.07.2019, which is intended to extended for 50 year from the date of grant of mining lease i.e. from 26.07.1999 to 27.07.2049.

This mining project comes under Category 'B1' (Cluster situation) Project or activity 1(a) as per EIA Notifications 2006, and its subsequent amendments and will be appraised at SEAC, Chattisgarh. The lease is falling in the cluster as per 15th January 2016 EIA Notification of MoEF&CC and NGT order dated 13th September 2018.

### ***Project Location***

the Khasra no. 274/7, 274/1 and 274/6 of Village – Lalpur, Tehsil – Raipur, District – Raipur. Limestone mine of Lessee Harshit Sharma & Akhilesh Kumar Singh featured in the Survey of India Toposheet No. 64 G/11.



**Figure E-1: Location map of the Project Site**

The details of environmental setting are given below.

**Table E.1: Environmental Setting around Project Site**

Particulars	Details																																																																																										
Name of the Project	Proposed Limestone Mining Project Area: 5.693Hect. (Govt. Land)																																																																																										
Location of the Project	Near Village- Lalpur, Tehsil- Raipur, District- Raipur State- Chhattisgarh																																																																																										
Geographical Coordinates:	<p><b>Harshit Sharma:</b></p> <table border="1"> <thead> <tr> <th>Pillars</th> <th>Latitude(N)</th> <th>Longitude(E)</th> </tr> </thead> <tbody> <tr><td>BL1</td><td>21°19'30.94"N</td><td>81°44'48.38"E</td></tr> <tr><td>BL2</td><td>21°19'31.14"N</td><td>81°44'50.53"E</td></tr> <tr><td>BL3</td><td>21°19'29.21"N</td><td>81°44'51.68"E</td></tr> <tr><td>BL4</td><td>21°19'29.16"N</td><td>81°44'52.52"E</td></tr> <tr><td>BL5</td><td>21°19'28.44"N</td><td>81°44'52.68"E</td></tr> <tr><td>BL6</td><td>21°19'28.06"N</td><td>81°44'50.91"E</td></tr> <tr><td>BL7</td><td>21°19'25.70"N</td><td>81°44'50.90"E</td></tr> <tr><td>BL8</td><td>21°19'25.65"N</td><td>81°44'50.03"E</td></tr> <tr><td>BL9</td><td>21°19'27.34"N</td><td>81°44'49.55"E</td></tr> <tr><td>BL10</td><td>21°19'27.42"N</td><td>81°44'48.12"E</td></tr> </tbody> </table> <p><b>Akhilesh Kumar Singh</b></p> <table border="1"> <tbody> <tr><td>BP - 1</td><td>21°19'24.20"N</td><td>81°44'40.20"E</td></tr> <tr><td>BP - 2</td><td>21°19'24.20"N</td><td>81°44'44.30"E</td></tr> <tr><td>BP - 3</td><td>21°19'24.90"N</td><td>81°44'44.80"E</td></tr> <tr><td>BP - 4</td><td>21°19'25.60"N</td><td>81°44'47.50"E</td></tr> <tr><td>BP - 5</td><td>21°19'27.20"N</td><td>81°44'47.90"E</td></tr> <tr><td>BP - 6</td><td>21°19'27.40"N</td><td>81°44'47.00"E</td></tr> <tr><td>BP - 7</td><td>21°19'30.20"N</td><td>81°44'47.30"E</td></tr> <tr><td>BP - 8</td><td>21°19'30.50"N</td><td>81°44'49.30"E</td></tr> <tr><td>BP - 9</td><td>21°19'34.10"N</td><td>81°44'49.00"E</td></tr> <tr><td>BP - 10</td><td>21°19'34.20"N</td><td>81°44'48.20"E</td></tr> <tr><td>BP - 11</td><td>21°19'35.50"N</td><td>81°44'47.60"E</td></tr> <tr><td>BP - 12</td><td>21°19'37.20"N</td><td>81°44'42.10"E</td></tr> <tr><td>BP - 13</td><td>21°19'35.50"N</td><td>81°44'39.10"E</td></tr> <tr><td>BP - 14</td><td>21°19'34.80"N</td><td>81°44'39.10"E</td></tr> <tr><td>BP - 15</td><td>21°19'34.00"N</td><td>81°44'44.50"E</td></tr> <tr><td>BP - 16</td><td>21°19'27.40"N</td><td>81°44'44.40"E</td></tr> <tr><td>BP - 17</td><td>21°19'27.50"N</td><td>81°44'40.30"E</td></tr> <tr><td>BP - 18</td><td>21°19'26.10"N</td><td>81°44'40.10"E</td></tr> <tr><td>BP - 19</td><td>21°19'25.80"N</td><td>81°44'41.40"E</td></tr> </tbody> </table>	Pillars	Latitude(N)	Longitude(E)	BL1	21°19'30.94"N	81°44'48.38"E	BL2	21°19'31.14"N	81°44'50.53"E	BL3	21°19'29.21"N	81°44'51.68"E	BL4	21°19'29.16"N	81°44'52.52"E	BL5	21°19'28.44"N	81°44'52.68"E	BL6	21°19'28.06"N	81°44'50.91"E	BL7	21°19'25.70"N	81°44'50.90"E	BL8	21°19'25.65"N	81°44'50.03"E	BL9	21°19'27.34"N	81°44'49.55"E	BL10	21°19'27.42"N	81°44'48.12"E	BP - 1	21°19'24.20"N	81°44'40.20"E	BP - 2	21°19'24.20"N	81°44'44.30"E	BP - 3	21°19'24.90"N	81°44'44.80"E	BP - 4	21°19'25.60"N	81°44'47.50"E	BP - 5	21°19'27.20"N	81°44'47.90"E	BP - 6	21°19'27.40"N	81°44'47.00"E	BP - 7	21°19'30.20"N	81°44'47.30"E	BP - 8	21°19'30.50"N	81°44'49.30"E	BP - 9	21°19'34.10"N	81°44'49.00"E	BP - 10	21°19'34.20"N	81°44'48.20"E	BP - 11	21°19'35.50"N	81°44'47.60"E	BP - 12	21°19'37.20"N	81°44'42.10"E	BP - 13	21°19'35.50"N	81°44'39.10"E	BP - 14	21°19'34.80"N	81°44'39.10"E	BP - 15	21°19'34.00"N	81°44'44.50"E	BP - 16	21°19'27.40"N	81°44'44.40"E	BP - 17	21°19'27.50"N	81°44'40.30"E	BP - 18	21°19'26.10"N	81°44'40.10"E	BP - 19	21°19'25.80"N	81°44'41.40"E
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Annual rainfall	1276 mm																																																																																										
Size of the Project	5.693 Ha																																																																																										
Nearest Highway	NH -6 at 10 Km towards South																																																																																										

Particulars	Details
	SH - 9 at 270 m towards South-East Road (Raipur – Baloda Bazar Road) (As per Mining Plan)
Nearest railway station	Mandhar Railway Station – 4.6 km, W
Nearest Airport	Swami Vivekanda International Airport, Raipur – 15.50 km, S
Nearest water body	Kharun River at 16 km Towards E
Major water bodies within 10 km radius	Kharun River at 16 km Towards E
Densely populated or built-up area	Raipur – 14km SW District Headquarter, Raipur – 15 km SW
Archaeologically important places	None within 10 km radius
Protected areas as per Wildlife Protection Act (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	None within 10 km radius
Reserved / Protected Forests	1. Mohrenga PF: 18.62 Km, NE 2. Khaluidabri PF :18.67 Km, NE 3. Open Mixed Jungle :21.27 Km, NE
Defense Installations	None within 10 km radius
Seismicity	Since project site comes under Seismic zone II, which is least active zone for earthquakes as per IS: 1893 (Part 1: 2002).
Wildlife Sanctuary	None within 10 km radius
National park	None within 10 km radius
Biosphere reserves	None within 10 km radius
Important migration routes of birds	None within 10 km radius
Ramsar sites (Wetlands of International Importance)	None within 10 km radius
Unique or threatened ecosystems	None within 10 km radius
Important topographical features, including ridges, river valleys, shorelines, and riparian areas	None within 10 km radius

Particulars	Details
Reserve & protected Forests	None within 10 km radius
Mangrooves	None within 10 km radius
Physical Sensitive Receptors	None within 10 km radius
Notified Ground Water Zone by CGWA	None within 10 km radius
Critically Environmental polluted Area	None within 10 km radius
Pollution Sources	None within 10 km radius

## 2.0 Project Description

The proposed mining lease area is located in Lalpur village, Raipur Tehsil, and Raipur District of Chhattisgarh State. Lalpur Limestone Quarry Lessee of Limestone, Proprietor Harshit Sharma & Akhilesh Kumar Singh who are in same cluster both can be located in the Survey of India Toposheet No. 64 G/11. The mining area is a non forest govt. land. Lalpur Cluster Limestone Quarry is located at a distance approx. 15 km from district office Raipur and situated at 14 Km from State Capital Raipur. Nearest Railway Station is located at Mandhar about 4.6 km in West from the lease cluster. The life span of proposed mine block is 50 years with an estimated production of 15000 MTPA & 6000 MTPA. The proposed method of mining is open cast semi mechanized mining

**Table E.2: Salient Features of Proposed Project**

INFORMATION	DETAILS
Name of the project	Proposed Limestone Mining Project, Area 5.693 Ha
Village	Lalpur
Tehsil	Raipur
District	Raipur
State	Chhattisgarh
Toposheet No	64G/11
Name of Lease holders	Sri Akhilesh Kumar Singh Sri Harshit Sharma
Address and Contact details of Lease Holder	M/s. Harshit Sharma S/o. Late Shri Yogendra Sharma House No. 14, opp. Green Medows, City/Post-Avani Pride, Daldal, Seoni, Mowa Raipur & Tehsil--Raipur, District-Raipur(Chhattisgarh), Pin – 492007  M/s Akhilesh Kumar Singh S/o Late Ramjatan Singh Balaji Colony , Mandir Hassoud Dist- Raipur 492101(CG)
Name of the Mineral to be mined	Limestone
Type of land	Non forest Government Land
Status of Operation (New Project or Existing Project operating since)	Existing Project
Mine Area	5.693 Hectare
Production Capacity	15,000 MT(Akhilesh Kumar Singh) 6000 MT( Harshit Sharma)
Life of Mine	Approx. 50 years
Quantity of topsoil and Overburden estimated to be removed	Nil ( Akhilesh Kumar Singh) 380 cum ( Harshit Sharma)
Depth of Ground Water Table	>25 m BGL
Method of Mining	Opencast Semi Mechanized
No. of working days	300 Days
Seismic Zone	Seismic Zone II



### ***Mining methodology***

The mode of working will be open cast semi mechanized method of mining with low capacity blast. Small scale drilling and blasting will be carried out for exploration of stone. Rock breaker, Jack Hammer will yield the sufficient quantity of stone. Further the stone will be sized and dressed according to the required specification and stacked on the mine surface.

It is a very small pit and average daily production is 70 ton/day. At present mining operation carried out by deepening the existing pit from southern side to northern side. There is one bench in limestone bed having height of 3.0m each and due to depending of the pit there is no overburden bench.

### ***Power Requirement***

No power is required for mining purpose other than for labour, admin building and for crusher plant. State electricity board will supply the electricity. Electric power is available in the lease area.

### ***Water Requirement***

The total water requirement shall be 8.4 KLD & 4.30 KLD for domestic and sprinkling purpose, which will be sourced from Water Tankers from nearby village.

Water is available in Dug well and Borewell in Lalpur village. Detail of water requirement is given below:

Dust suppression – 2.0 KLD  
 Green Belt – 1.95 KLD  
 Domestic (Sanitation & Drinking)– 0.35 KLD

*(Water Demand for the Harshit Sharma project)*

Dust suppression – 5.80 KLD  
 Green Belt –2.0 KLD  
 Domestic (Sanitation & Drinking) – 0.60 KLD  
*(Water Demand for the Akhilesh Kumar Singh project)*

**Table E.3.1: Water Requirement Details(Akhilesh Kumar Singh)**

<b>Sr. No.</b>	<b>Usage</b>	<b>Water Requirement</b>	
1.	Greenbelt Development@ 2.5 L/tree	$2310 \text{ Trees} \times 2.5 \text{ Lit/day} = 2575 \text{ Lit/day}$	5.80 KLD
2.	Dust Suppression @ 0.5 L/Sqm (twice a day)	$\text{Haul road Area} = (500 \text{ m Length} \times 4 \text{ m width} = 2000 \text{ sqm.}) \times 0.5 \text{ li/sqm} = 1000 \text{ lit /day} \times 2 \text{ time} = 2000 \text{ lit/day}$	2.00 KLD
3.	Domestic Purpose @25 lpd/worker	$23 \text{ workers} \times 25 \text{ lit per day} = 625 \text{ Lit/Day}$	0.60 KLD
<b>Total ::</b>			<b>8.4 KLD</b>

**Table E.3.2: Water Requirement Details (Harshit Sharma)**

Sr. No.	Usage	Water Requirement	
1.	Greenbelt Development @ 2.5 L/tree	780 Trees X 2.5Lit/day = 1950 Lit/day	1.95 KLD
2.	Dust Suppression @ 0.5 L/Sqm (twice a day)	Haul road Area = (500 m Length x 4 m width = 2000 sqm.) x 0.5 li/sqm = 1000 lit /day x 2 time = 2000 lit/day	2.0 KLD
3.	Domestic Purpose @25 lpd/worker	14 workers x 25 lit per day = 350 Lit/Day	0.35KLD
<b>Total ::</b>			<b>4.30KLD</b>

### Manpower

The mining project will generate direct & indirect employment. About 37 per day people will get direct employment, and some persons will also be affected indirectly and employed with allied and related industries, such as transportation, maintenance, etc. Following staff & workers are proposed to be employed:

#### Manpower Details of Akhilesh Kumar Singh

S.No.	Category	No. of persons
1	Manger mines cum Mining Engineer	1
2	Geologist	1
3	Mining mate cum blaster	1
4	Skilled	4
5	Semi – Skilled Labours	6
6	Unskilled Labour	10
<b>Total</b>		<b>23</b>

#### Manpower Details of Harshit Sharma

S.No.	Category	No. of persons
1	Mining engineer	1
2	Geologist	1
3	Mining mate	1
4	Blaster	1
5	Driver	2
6	Highly Skilled	2
7	Skilled	2
8	Semi – Skilled	2
9	Other etc.	2
<b>Total</b>		<b>14</b>

### 3.0 Description of Environment

The area around the proposed mining site has been surveyed for physical features and existing environmental scenario. The field survey and baseline monitoring has been done from the period of 15<sup>th</sup> December 2021 to 15<sup>th</sup> March 2022 (Winter Season).

#### 3.1 Meteorology

The secondary meteorological data of the study period collected from [www.imdpune.gov.in/](http://www.imdpune.gov.in/). The month wise meteorological data is given in **Table 3.3**

**Table E.4: Summary of the Meteorological (Site Lalpur)**

*Table 3.2 B : Meteorological Data of the study area ( IMD – Raipur )*

Period	Wind Speed (m/s)		Temp (°C)		Relative Humidity (%)		Rainfall (mm)
	Max	Min	Max	Min	Max	Min	
Dec-21	5.43	0.17	25.83	3.66	100	25.56	83.5
Jan-22	4.44	0.11	26.03	4.65	100	28.69	29.31
Feb-22	6.18	0.07	33.28	6.41	100	16.81	17.78
March - 22	4.25	0.13	37.8	14.62	87	11.31	0.25

Source : Weather Summary for December 2021 - March 2022 (<https://www.imdpune.gov.in/>)

#### *Air Environment*

##### Particulate Matter (PM<sub>10</sub>):

A maximum concentration of PM<sub>10</sub> is 88 µg/m<sup>3</sup> was observed at the AAQM-8 and minimum value of 42 µg/m<sup>3</sup> was observed at AAQM-2.

##### Respirable Particulate Matter (PM<sub>2.5</sub>):

A maximum concentration of PM<sub>2.5</sub> is recorded to be 51µg/m<sup>3</sup> at AAQM-2 and minimum value of 12 µg/m<sup>3</sup> was observed at AAQM-6.

##### Sulphur Dioxide (SO<sub>2</sub>):

Maximum concentration of SO<sub>2</sub> is observed to be 21µg/m<sup>3</sup> at AAQM -7 and minimum value of 5 µg/m<sup>3</sup> observed at AAQM- 6.

##### Oxides of Nitrogen (NO<sub>x</sub>):

Maximum concentration of NO<sub>x</sub> is observed to be 27µg/m<sup>3</sup> at AAQM-1 & 2 and minimum value of 10 µg/m<sup>3</sup> observed at AAQM-2, 4, 6 & 8.

##### Carbon Monoxide (CO):

Maximum concentrations in the region are observed to be 1.1 mg/m<sup>3</sup> at AAQM-1, 5, 7 & 8 and minimum value of 0.4 mg/m<sup>3</sup> observed at AAQM- 6.

### Silica

Silica in the ambient air of the 10 Km radius of the study area of the project site has been analyzed from the PM<sub>10</sub> filter paper of the Ambient Air quality monitoring stations mentioned (7601, Issue 3 as per NIOSH Methods). The result indicates that silica concentration in the surrounding of project site was found to be in the range of 0.05µg/m<sup>3</sup> to 0.09µg/m<sup>3</sup>.

The results are compared with the standards prescribed by Central Pollution Control Board (CPCB). The overall ambient air quality around the proposed mine lease is within the limits of ambient air quality standards prescribed by CPCB.

### **3.3 Noise Environment**

Noise levels were monitored in eight locations including project within the study area. The noise levels ranged between 49.5 to 52.4dB (A) during day time and noise levels ranged between 39.4 to 44.6 dB (A) during night time. Over all the monitored noise levels are found to be within the stipulated standards set by CPCB.

### **3.4 Water Environment**

#### **Ground Water Quality**

- The analysis results indicate that the pH ranges in between 7.0 to 7.30, which is well within the specified standard of 6.5 to 8.5. The minimum pH was observed at GW6; the maximum pH was observed at GW5.
- Total hardness was observed to be ranging from 164 to 338 mg/l. The minimum hardness was recorded at GW6 and the maximum was recorded at GW4.
- Chlorides were found to be in the range of 77 to 110 mg/l, the minimum concentration of chlorides was observed at GW2, whereas the maximum value was observed at GW4.
- Sulphates were found to be in the range of 21 to 51 mg/l. The minimum value observed at GW2 whereas the maximum value observed at GW4 .
- The Total Dissolved Solids (TDS) concentrations were found to be ranging in between 336 to 556 mg/l, the minimum TDS observed at GW2 and maximum concentration of TDS observed at GW4.
- Zinc and iron found below detectable limit

All parameters are within desirable limits as per IS 10500:2012 for all stations.

#### **Surface Water Quality**

- The analysis results indicate that the pH values in the range of 7.3 to 8.2, the minimum value was observed at SW4 and maximum value was observed at SW5.

- DO was observed to be in the range of 4.3 to 5.3 mg/l. The minimum DO value was observed at SW3 and SW6 and maximum DO was observed at SW5.
- The TDS was observed in the range of 304 to 408 mg/l, the minimum TDS value was observed at SW1, and where as maximum value was observed at SW2.
- The chlorides and Sulphates were found to be in the range of 47 to 84 mg/l and 38 to 48 mg/l, respectively.
- Total hardness expressed as CaCO<sub>3</sub> ranges between 166 to 232mg/l.
- The calcium & magnesium were found to be in the range of 35 to 48 mg/l and 19 to 27 mg/l, respectively. Zinc is found below detectable limit.

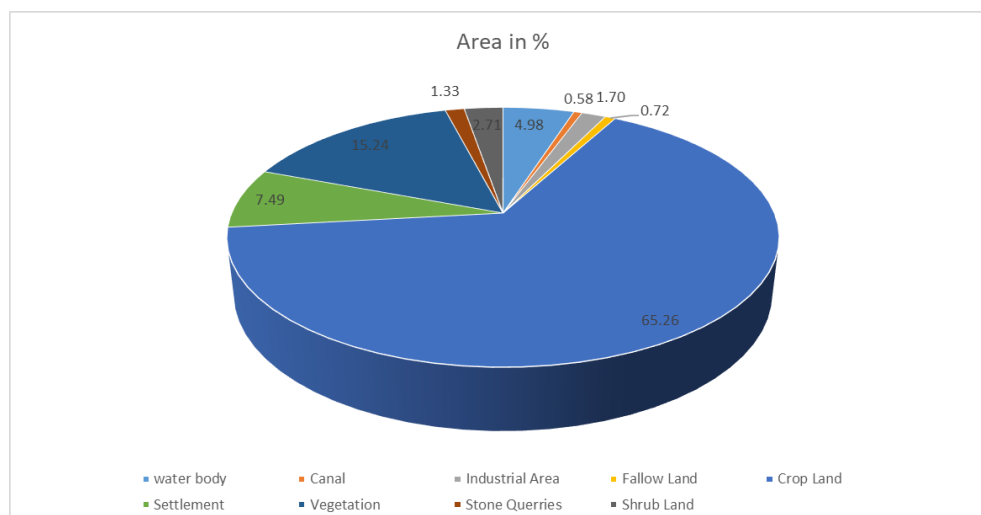
As per CPCB water quality criteria the class of water comes under Class B for SW5 and Class D for rest of the stations.

### 3.5 Soil Quality

A total of 8 samples in and around the project site are collected and analysed. It has been observed that the pH of the soil quality ranged from 7.2 (S3 &5) to 7.8 (S 4) indicating that the soil is slightly alkaline in nature.

The project site is near Lalpur, a village in Raipur Tehsil in the Raipur District of Chattisgarh, India. The residents of this village live in peace, and agriculture is their primary source of income. However, this region has the potential for industrial development. The nearest town, Raipur, is 17 kilometers away from the project site. The residential and educational component of Lalpur village is 400 meters and 1.10 kilometres to the southwest

**Figure E-2: LULC Classification (10 km radius of the Proposed Project Area)**



### 3.7 Ecology and Biodiversity

An ecological survey of the study area was conducted, as per following steps, with reference to listing of species, assessment of the existing baseline ecological conditions and predicting impacts with suggestive mitigation measures. Studies were undertaken in core zone (Mining

Lease Area) & buffer zone various types of Flora; viz. trees, shrubs, herbs including grasses were enumerated in. Fauna like mammals, birds, reptiles' amphibians & butterflies. Were surveyed and enlisted. With reference to avifauna diversity, birds were studied through direct evidence, in the form of visual sightings, and indirect evidence such as calls, nests, burrows, droppings, scats, tracks etc. All available types of habitats at the site were evaluated and marked.

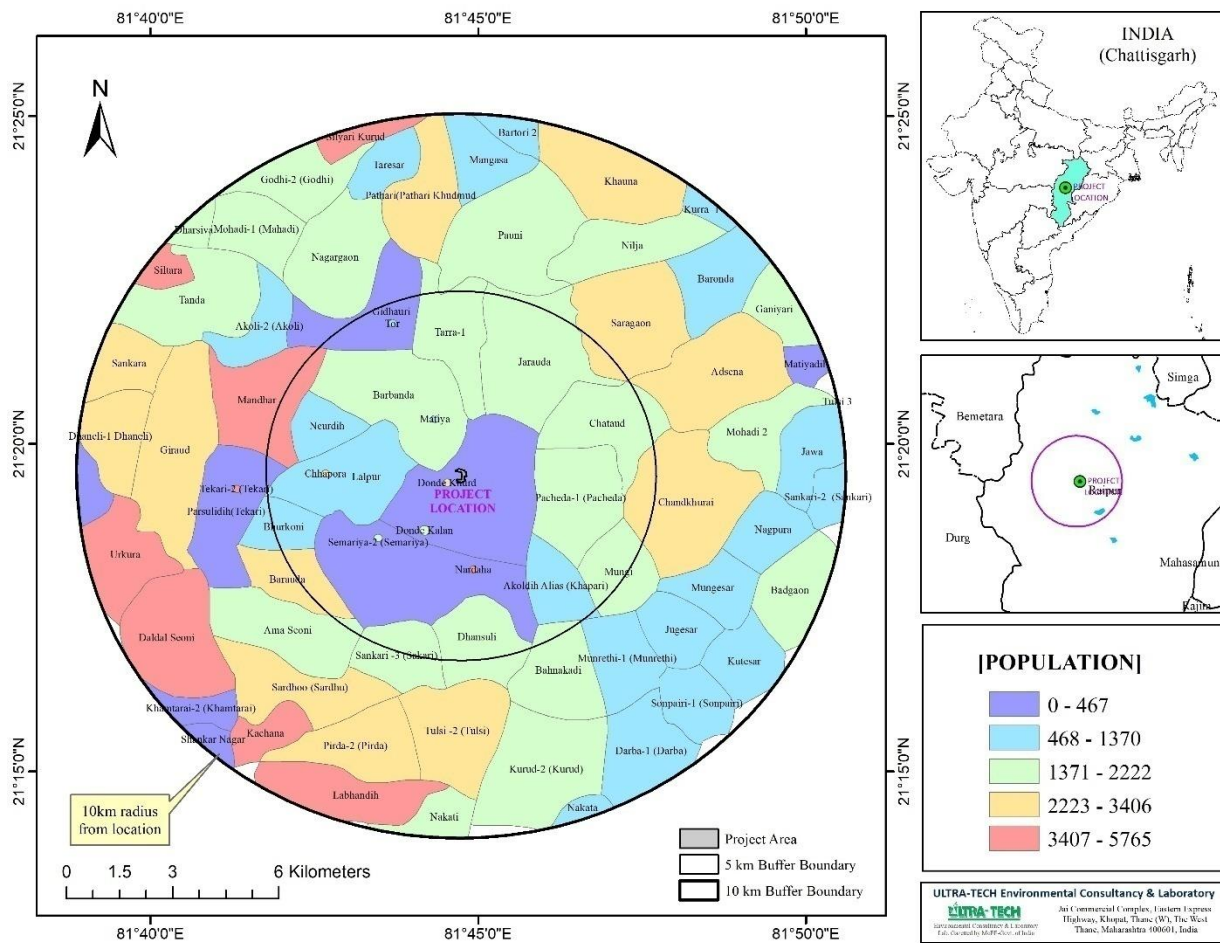
Identified vegetation patches through GIS map and physically surveyed representative sites

- Different types of animals, including avifauna, available in this area, have been recorded,
- Secondary data, pertaining to flora and fauna within 10 Km boundary from the project site have been collected from literature, forest department, and discussions with local people & NGOs.
- Probable impact, if any, of project activity on biota and mitigation measures have been delineated.

### **3.8 Socio Economics**

Although the study area (10 km radius from the project location) is divided based on secondary data (Population Census 2011), the total population of the study area is 175422. There are 35962 households on a surface area of 539 square kilometres.

In the study area, the total male population is 89561, somewhat higher than the female population of 85861. Figure 1.3 depicts the village-wise population concentration in the study region defined by a 10-kilometer radius from the project location. According to the 2011 Population Census, the village of Mandilpur has a total of 274 families. According to Census 2011 data, Lalpur has a total population of 3,648 people, with a male population of 1,826 and a female population of 1,822. Lalpur village has a literacy rate of 58.28 percent, with 65.83 percent of men and 50.71 percent of females being literate. Lalpur settlement has around 775 homes. Urkura, DandalSoni, Kachuna, and Labandih, along the southwestern edges of the area surrounding the project location.



**Figure E-3: Population Concentration map of the study area SC and ST Population**

#### 4.0 Anticipated Environment Impacts and Environment Management Plan

##### *Land/Soil Environment Impact Mitigation*

- Before the mining activity the top soil will be scrapped and stored in the lease area, which will be utilized for plantation purpose.
- The Limestone excavated from the lease area will be completely sellable resulting no dump within the lease area
- At the end of conceptual period the excavated quarry will converted into water reservoir to supply water for local use like irrigation and pisciculture besides improving the ground water potential.
- Due to control mining operation emission from the Limestone stone mines is very less. There will be least impact on the surrounding soil quality and cropping pattern of the area.

- The proposed project falls under the seismic zone –II (Low Hazard Risk Zone). Since this project will not have physical infrastructure to be constructed, no impact of seismicity is envisaged in this project. Further, this project will not change/alter the seismic behaviour of the area.

### ***Air Impact Mitigation***

The mitigation measures undertaken in the mine for control of air pollution are :-

- Checking of vehicles and machinery to ensure compliance to Indian Emission Standards. Transportation vehicles and machinery to be properly and timely maintained and serviced regularly to control the emission of air pollutants in order to maintain the emissions of NO<sub>x</sub> and SO<sub>x</sub> within the limits established by CPCB.
- Total 12.70 KLD water required for two mines towards dust suppression purpose for which 1 no. of water tanker with 2000 liter capacity will be hired and used for water sprinkling twice in a day in haul roads, dumping site, loading and unloading site of each lease within the cluster and this will be regularly monitored by the cluster management. Water sprinkling on transport road side, stock yard (if any) etc. will be done by tractor mounted water sprinkler.
- Regular Compaction and grading of haul roads will be done to clear the accumulation of loose material
- All the mines workers will be provided with the dust masks.
- Trees can act as efficient biological filters. As this is a small lease, the area available for plantation is very less. However a well planned plantation programme has been proposed for the mining area to arrest the dust pollution within the lease boundary. There is the proposal for continuous plantation along the cluster boundary and both side of the road connecting the cluster.
- Vehicles with valid PUC shall be used for transporting the minerals to avoid the exhaust emission.
- A greenbelt development plan is prepared with local species. The greenbelt on the periphery will reduce the dust level
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce generation of dust.
- Fugitive emission by stone crusher plant will be suppressed by adopting following measures as per norms:
  - ✓ Construction of tin walls around the crusher plant and equipment.
  - ✓ Regular cleaning and wetting of the ground within the premises.



- ✓ Better maintenance of crusher plant and equipment will help to reduce such emissions.
- ✓ water spray at dust generating points on crusher plant.
- Regular monitoring of the air quality as per the monitoring plan detailed in Chapter 6 of this EIA report, shall be adopted during the operation phase, to ensure that, the air quality is within the desired limits prescribed by CPCB.

### ***Noise Impact Mitigation***

- No noise polluting work shall be carried out in the night hours
- Provision of PPE's for the workers
- Vehicles to be serviced regularly and maintained properly to avoid any unwanted generation of noise or vibration from them
- Green belt plantation and garden trees will help in reducing the noise, traffic related pollution and heat island effects.
- Proper lubrication, muffling and modernization of equipment shall be used to reduce the noise during operation phase.
- Vibration and noise due to blasting will be reduced by adopting controlled blasting technique.
- Blasting will be avoided under unfavourable conditions.
- Rock breakers is being/ will be used instead of secondary blasting.
- Regular monitoring of the noise levels as per the monitoring plan detailed in Chapter 6 of this EIA report, shall be adopted during the operation phase, to ensure that, the noise levels are within the limits prescribed by CPCB.

### ***Water Impact Mitigation***

- Provision of temporary toilets for laborers
- Domestic waste water will be treated into septic tank followed by soak pit outside of the proposed cluster project with a safe distance and no wastewater will be allowed to be get discharged into the water body
- All stacking and loading areas should be provided with proper garland drains
- Check dams should be provided to prevent solids from wash off.
- Construction of garland drains around freshly excavated and dumped areas so that flow of water with loose material is prevented.
- The mine water should be passed through specially constructed catch pits to arrest any loose material being carried away with water.

- Any areas with loose debris within the leasehold should be planted.
- Garland drains should be constructed surrounding the waste dumps and should be connected to the surface water reservoir to avoid the run-off mixing directly to natural water channels before settling.
- Ground water table will not be intersected during the mining activity

### ***Ecology and Biodiversity Impact Mitigation***

#### **Flora**

- As it is a mining project of limestone activities will be confined to core zone only. The project area is surrounded by agricultural land. There is no forest land involved in mine lease area. Thus no direct impact is foreseen on the flora of the forest area because of mining operation. The , activities related to mining as transportation of material and passage of workers to and from mining area may have an adverse impact on the road side flora, if adequate control control measures will not be taken into consideration.
- Significant reduction in total chlorophyll content at road side plant species may affects the plant species by affecting the plant metabolism. The reduction in chlorophyll concentration corresponds directly to the reduction in plant growth.

#### **Fauna**

The mining, specifically, will have no adverse impact on fauna whereas the operational activities such as human activity, transportation and noise generation may have an adverse impact on fauna.

- No wild life sanctuary is present within 10 km radius of study area. No major wildlife observed within mine lease area during the survey period. Considering size of mine and management practice by scientific method of mining with proper Environmental Management Plan including pollution control measures especially for air and noise, which will not cause any adverse impact on the surrounding animals.
- Fencing around the entire mine lease area is recommended in order to restrict the entry of stray animals into the mining area.
- Green belt development will be carried out which will help in arresting dust and minimizing sound level arising from the mining operation.
- Some fauna will move from the area of the road side as a result of habitat loss and physical disturbance.

### ***Socio-Economic Environment Impact Mitigation***

- For the mining work, an average of 37 workers will be required in the project sites, which will be met from skilled and unskilled labourers from the local population as far as possible. Thus, the project can provide employment to local workers during the operation of mines.
- The area is considered as industrially backward. The population in general does not have opportunities of earning from employment. The only employment to depend on is agriculture, which is seasonal
- There is no human settlement in or around the mining block areas, hence no clearance of human settlement is required for the mining operation.
- The proposed mining project activity does not involve any resettlement and rehabilitation process as the project is freshly designed at representative site where none of the settlement is present.
- The mining activity could lead to increased nuisance level from air emissions and noise due to transportation of material and equipment as well as laborers.

### **5.0 Analysis of Alternatives**

The proposed Lalpur Cluster Limestone Quarry, which includes the Limestone Quarry of Leases, is owned by two lessees and will be operated within the lease grant area.

So, no alternate sites have been assessed. The mining technology is semi mechanized open cast method.

This project is being granted to the respective project proponents by the Mineral Resource Department, Govt. of Chhattishgarh, in the approved mineralized zone. This project is far distance from habitation & on maximum non productive land hence this is best suitable for mining activity. Procedure used for recovery of mineral is the traditional method and as labour intensive, this is adopted for the site proved as the best practice

### **6.0 Environmental Monitoring Program**

Environmental monitoring shall be carried out at the locations to assess the environmental health in the post period. A post study monitoring programmed is important as it provides useful information on the following aspects.

- It helps to verify the predictions on environmental impacts presented in this study.
- It helps to indicate warnings of the development of any alarming environmental situations, and thus, provides opportunities for adopting appropriate control measures in advance.

Detailed EMP plan during construction and operation phase is given chapter 6 of EIA/EMP report.

## **7.0 Risk Assessment**

The hazards and its risk assessed during the operation phase of the proposed Limestone mining project are low, medium & high. The project proponents are proposed to implement all the mitigation measures to prevent the impact or consequences of the risk expected to be happened in both the project sites. The level of impact after implementing the mitigation measures will be low/medium in all the hazards identified.

## **8.0 Emergency Response and Disaster Management Plan**

Impact of disaster can be significantly reduced through attempts at preparedness, mitigation, and post-event rehabilitation work. Based on hazard identification in the proposed project, an emergency plan has been prepared and the same plan will be implemented by the project implementing agency with the coordination of District Authorities to minimize the damage. The risk assessment and disaster management plan is detailed in Chapter 7 of the EIA report.

## **9.0 Capital Investment and Project Schedule**

The proposed Limestone mining project is estimated to cost Rs 124.69 Lacs.

Once the statutory clearance being obtained, the mine will start operating.

## **10.0 Project Benefits**

Mining is back bone of infra-structure development of country. Proposed project has following benefits as given below:

- Employment for local people
- Revenue for the State Government in form of excise duties, GST, taxes, levies etc.
- Generate business opportunity for the people
- Need based funds will be used for welfare of people in villages
- EMP funds will improve environmental quality.

The operation of the Limestone mining would help to improve socio-economic condition of people in villages through separate fund allocated for Need Based Activity.

## **11.0 Need Based Activity**

The proposed mining project is aware of the obligations towards the society and to fulfill the social obligations unit will employ semi-skilled and unskilled labor from the nearby villages for the proposed project as far as possible. Unit will also try to generate maximum indirect employment in the nearby villages by appointing local contractors during construction phase as well as during operation phase. The Project Proponents will contribute reasonably as part of social development as a part of EMP and will carry out various activities in nearby villages.

## 12.0 Environment Management Plan (EMP)

The detailed Environment Management Plan has been prepared based on the mining activities and the impacts imparting on land/soil, air, noise, water by the activities. The EMP and the cost for the environment protection measures are detailed in Chapter 10 of EIA report.

### Expenditure Proposed for Environmental Protection Activities :

S.No.	Particulars	Akhilesh Kumar Singh		Harshit Sharma	
		Capital Cost in Rs	Recurring Cost in Rs	Capital Cost	Recurring Cost in Rs
1	Air Pollution Control	-	72,000	-	72,000
2	Green Belt Development	1,58,000	2,01,000	58,000	1,61,000
3	Maintenance of Road	-	40,000		40,000
4	Facilities for Mine workers	50,000	1,03,500	50,000	63,000
	<b>Total ::</b>	<b>2,08,000</b>	<b>4,16,500</b>	<b>1,08,000</b>	<b>3,36,000</b>
<b>Total Capital Cost in Rs</b>		<b>3,16,000</b>			
<b>Total Recurring Cost in Rs</b>		<b>7,52,500</b>			
<b>Total Cost of EMP in Rs</b>		<b>10,68,500</b>			

## 13.0 Conclusions

As discussed, it is safe to say that the collection of minor mineral from the proposed lease area is not likely to cause any significant impact on the ecology of the area as the mineral is and waste generated is non-toxic and does not harm the surrounding environment.

Adequate measures will be taken to control the fugitive emissions to be generating during mining operation. Green belt development in the statutory boundary, approach roads, Govt. buildings, Schools also proposed with the help of local , Govt. department and local people as social forestry in the area for betterment of environment.