

EXECUTIVE SUMMARY OF DRAFT EIA REPORT

FOR

PROPOSED DOLOMITE MINING PROJECT (Minor mineral)

Proposed applied mines area is 11.266 ha

Total cluster area 20.964 ha

At

**Village :- Chhitapandariya, Tehsil - Jaijaipur, District - Janjir champa,
State - Chhattisgarh**

APPLICANT

Shree Manmohan Sharma & Shree Mukesh Bansal

**CITY/POST- CHHITAPANDARIYA & TEHSIL — JAIJAIPUR ,
DISTRICT- JANJIR CHAMPA (CHHATTISGARH), PIN – 495668**

ENVIRONMENTAL CONSULTANT



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

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

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December 2021

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EXECUTIVE SUMMARY

1.0 Introduction

The proposed Dolomite mining mineral project of area 11.266 Hectare situated in Khasra no. 5/2, 5/20, 30/5(P), 30/5(P) & 30/4 of Village – Chhitapandariya , Tehsil – Jaijaipur, District – Jangir Champa. The project is issued in favor of M/s Gurushree Minerals Pvt Limited director Shree Manmohan Sharma & Shree Mukesh Bansal, by the Government of Chhattisgarh, ministry of Mineral Resources Mahanadi Bhawan, Naya Raipur, Atal Nagar Raipur under Chhattisgarh Minor Mineral Rule 2015.

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, Chhattisgarh. 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. 5/2, 5/20, 30/5(P), 30/5(P) & 30/4 of Village –Chhitapandariya , Tehsil – Jaijaipur, District – Jangir Champa. Dolomite mines of Lessee Shree Manmohan Sharma & Shree Mukesh Bansal featured in the Survey of India Toposheet No. 64 K/13, 64J/16.

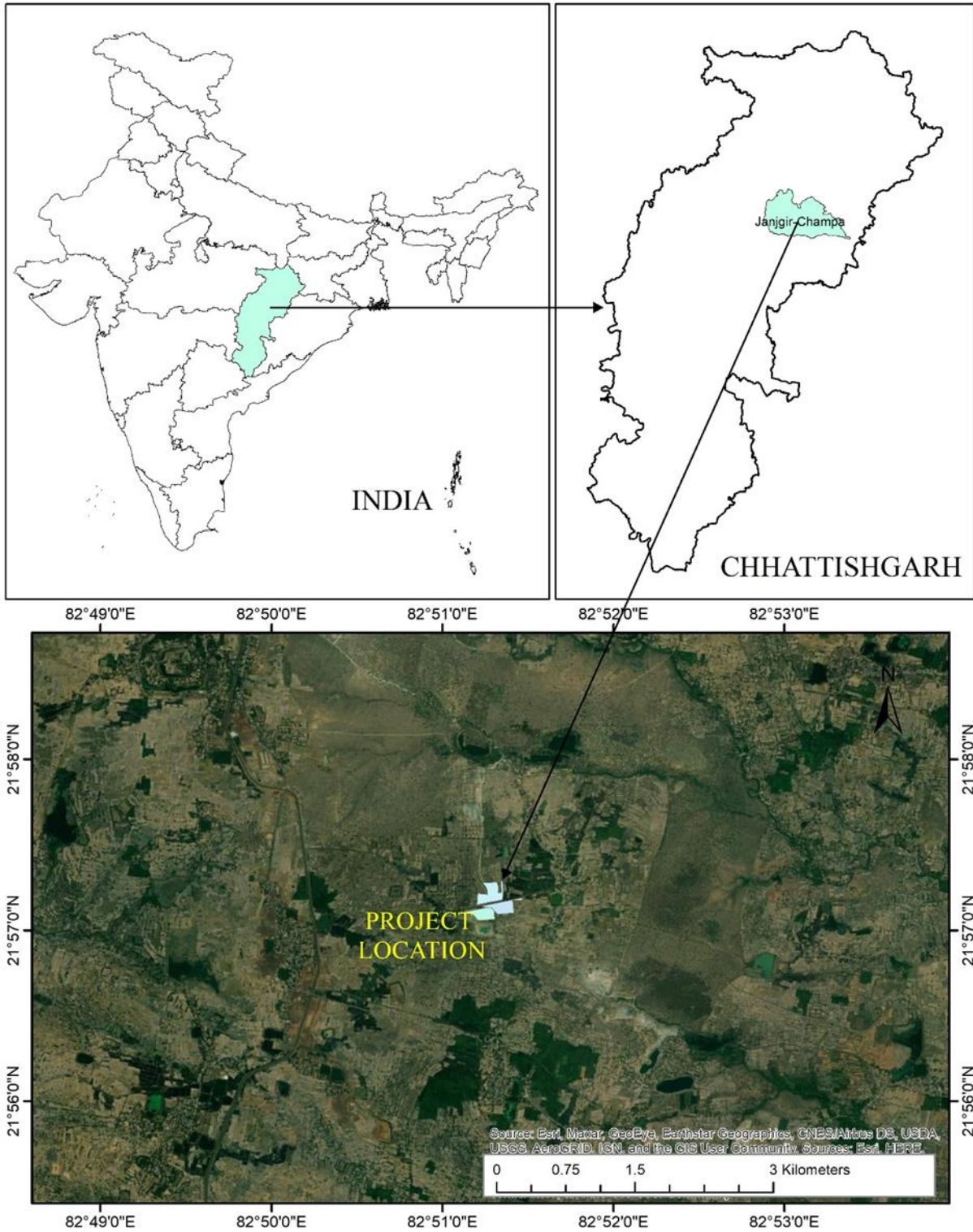


Figure E-1: Location map of the Project Site

The details of environmental setting are given below.

Table E.1: Environmental Setting around Project Site

Particulars	Details		
Name of the Project	Chhitpandriya Dolomite Quarry mine		
Location of the Project	village Chhitpandariya, Tehsil - Jaijaipur, District-Janjgir Champa State- Chhattisgarh		
Geographical Coordinates:	M/s Gurushree Mineral Pvt Limited – Area 3.036 hect		
	Point ID	Longitude (E)	Latitude (N)
	A	82°51' 06.69"E	21°57' 06.27"N
	B	82°51' 10.55"E	21°57' 05.64"N
	C	82°51' 12.30"E	21°57' 03.69"N
	D	82°51' 12.85"E	21°57' 03.44"N
	E	82°51' 18.36"E	21°57' 03.93"N
	F	82°51' 18.21"E	21°57' 08.38"N
	G	82°51' 21.58"E	21°57' 08.51"N
	H	82°51' 21.22"E	21°57' 08.97"N
	I	82°51' 20.63"E	21°57' 09.04"N
	M/s Gurushree Mineral Pvt Limited -Area 4.068 hect		
	Point ID	Longitude (E)	Latitude (N)
	A	82°51' 12.52"E	21°57' 13.03"N
	B	82°51' 15.79"E	21°57' 12.64"N
	C	82°51' 14.14"E	21°57' 16.65"N
	D	82°51' 19.06"E	21°57' 17.02"N
	E	82°51' 19.46"E	21°57' 13.24"N
	F	82°51' 20.65"E	21°57' 13.26"N
	G	82°51' 20.56"E	21°57' 17.23"N
	H	82°51' 21.05"E	21°57' 17.32"N
	I	82°51' 20.93"E	21°57' 10.79"N
	J	82°51' 11.95"E	21°57' 08.97"N
	M/s Gurushree Mineral Pvt Limited -Area 4.162 hect		
	Point ID	Longitude (E)	Latitude (N)
	A	82°51'5.70"E	21°57'37.62"N

Particulars	Details		
	B	82°51'14.62"E	21°57'37.52"N
	C	82°51'15.01"E	21°57'33.03"N
	D	82°51'8.34"E	21°57'32.10"N
	E	82°51'5.49"E	21°57'32.68"N
Maximum Temperature	46.6° C		
Minimum Temperature	10° C		
Annual rainfall	1276 mm		
Size of the Project	11.266 ha		
Nearest Highway	7.50 km		
Nearest railway station	Baradwar Railway Station, 7.50 kilometers from the lease area on Mumbai Howrah Main Line.		
Nearest Airport	Swami Vivekanda International Airport, Raipur –15.50 km, S		
Nearest town/City	Raipur – 14 km, SW		
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. Khulidabari PF: 3.6 Km, NE 2. Mohrenga PF :3.11 Km, N 3. Bilari Ghughua RF :19.85 Km, NW 4. Bilari R.F : 19.27 Km NW 5. Mixed Jungle : 6.36 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).		

Particulars	Details
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
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 project of Chhitapandriya Dolomite Quarry of 11.266 Ha is situated at Village- Chhitapandriya , Tehsil - Jaijaipur, District -Jangir champa, State-Chattishgarh. The life span of proposed mine block is 50 years. The proposed method of mining is open cast mechanized mining.

Table E.2: Salient Features of Proposed Project

INFORMATION	DETAILS
Name of the project	Chhitapandriya Dolomite Quarry
Village	Chhitapandriya
Tahsil	Jaijaipur
District	Jangir champa

State	Chhattisgarh		
Toposheet No	64K/13,64J/16		
Name of Leaseholder	M/s Gurushree Minerals Pvt. Ltd Director - Mukesh Bansal Director – Manmohan Sharma		
Address and Contact details of Lease Holder	Director Shri Manmohan Sharma Reg. Address: Shop no.- 39 & 42 Krishna Crown, Chaitnya Nagar, Dhimrapur Road, Raigarh (C.G.) 496001 & Director Shri Mukesh Bansal Reg. Address: Shop no.- 39 & 42 Krishna Crown, Chaitnya Nagar, Dhimrapur Road, Raigarh (C.G.) 496001		
Name of the Mineral to be mined	Dolomite		
Type of land	Private Land. There is no Forest land. No human settlement.		
Status of Operation (New Project or Existing Project operating since)	New Project		
Mine Area	3.036 ha, 4.068 ha and 4.162 ha		
Ultimate depth of mining	30.00 m (3.036 ha) 30.00 m (4.068 ha) 30.00 m (4.162 ha)		
Minable Reserve	M/s Gurushree Mineral pvt Limited <ul style="list-style-type: none"> • Area 3.036-8,56,460.00 MT • Area 4.068- 10,30,434.00 MT • Area 4.162- 14,43,524 MT 		
Production Capacity	M/s Gurushree Mineral pvt Limited <ul style="list-style-type: none"> • Area 3.036 hect – 8,13,637.00 MT • Area 4.068 hect – 9,78,912.00 MT Area 4.162 hect – 13,71,348.00MT 		
Life of Mine	As per Lease period - 50 years		
Quantity of topsoil and Overburden estimated to be removed	Area (ha)	Top soil	Lateritic soil
	3.036	0.25m	2.50 m
	4.068	0.25 m	2.50m
	4.162	2.70m	-
Depth of Ground Water Table	More than 55 meter of below from the normal surface level.		
Method of Mining	Opencast Mechanized		
No.of working days	300 Days		
SeismicZone	Seismic Zone II		

Mining methodology

The mode of working will be Mechanized open pit 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 according to the required specification and stacked on the mine surface.

It is a small pit and average daily production is 627.24 MT/day for 3.036 hectare, 1044.50 MT/day for 4.162 hectare, 627.80 MT/day for 4.068 hectare.

Power Requirement

No power is required for mining purpose other than for labor, 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 and 3.70 KLD for M/s Gurushree Mineral Pvt. Ltd(3.036 ha),4.40 KLD for M/s Gurushree Mineral Pvt. Ltd (4.068 ha) for ,3.90 KLD for M/s Gurushree Mineral Pvt. Ltd (4.162 ha) for domestic, green belt and sprinkling purpose, which will be which will be abstracted from ground after taking permission of CGWA. Water may also be arranged from local body through tankers from nearby village. Detail of water requirement is given below.

Table E. 3.1 Water Requirement Details (3.036)

Sr. No.	Usage	Water Requirement	
1.	Greenbelt Development@ 2.5 L/tree	540 Trees X 2.5 Lit/day = 1350 Lit/day	1.35 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	2.00 KLD
3.	Domestic Purpose @25 lpd/worker	14 workers x 25 lit per day = 350 Lit/Day	0.35 KLD
Total ::			3.70 KLD

Table E. 3.2 Water Requirement Details (4.068 hect)

Sr. No.	Usage	Water Requirement
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1.	Greenbelt Development@ 2.5 L/tree	826 Trees X 2.5Lit/day = 2065 Lit/day	2.06 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	2.00 KLD
3.	Domestic Purpose @25 lpd/worker	14 workers x 25 lit per day = 525 Lit/Day	0.35 KLD
Total ::			4.40 KLD

Table E. 3.3 Water Requirement Details (4.162 hect)

Sr. No.	Usage	Water Requirement	
1.	Greenbelt Development@ 2.5 L/tree	534 Trees X 2.5 Lit/day = 1335.00 Lit/day	1.34 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	21 workers x 25 lit per day = 525 Lit/Day	0.53 KLD
Total ::			3.90 KLD

Manpower

The mining project will generate direct & indirect employment. About 14 per day people for 4.068 ha & 3.036 ha and 21 for 4.162 ha 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: -

Table E. 4.1 Manpower Details of M/s Gurushree Mineral Pvt Limited 3.036

S. No	Particulars	
1	Mine Manager	1 No.
2	Mine Foreman	2No.
3	Blaster	3 Nos.
4	Workers	8 Nos.
Total		14 Nos.

Table E. 4.2 Manpower Details of M/s Gurushree Mineral Pvt Limited 4.162 ha & 4.068 ha

S. No	Particulars	
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1	Mine Manager	1 No.
2	Mine Foreman	2 No.
3	Blaster	3 Nos.
4	Workers	15 Nos.
Total		21 Nos.

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 **December 2021 to March 2022** (Winter Season).

3.1 Meteorology

The secondary meteorological data of the study period collected from www.imdpune.gov.in/. The month wise meteorological data is given in Table E5.1.

Table E 5.1: Summary of the Meteorological (Janjgir - Champa)

Period	Wind Speed (m/s)		Temp (°C)		Relative Humidity (%)		Rainfall (mm)
	Max	Min	Max	Min	Max	Min	
Dec-21	5.32	0.03	25.79	4.76	100	30.75	9.69
Jan-22	4.64	0.15	25.05	5.57	100	31.06	2.67
Feb-22	6.32	0.13	31.9	7.4	100	16.81	2.19
March - 22	4.44	0.14	33.07	14.87	87	21.5	0.07

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

Air Environment

The observations for Winter season- (December 2021– March 2022) are summarized below :-

Particulate Matter (PM₁₀) :

A maximum concentration of PM₁₀ is 66 µg/m³ was observed at the AAQM-2 and minimum value of 48 µg/m³ was observed at AAQM – 4.

Respirable Particulate Matter (PM_{2.5}) :

A maximum concentration of PM_{2.5} is recorded to be 26 µg/m³ at AAQM-2 and minimum value of 10 µg/m³ was observed at AAQM-7 &8

Sulphur Dioxide (SO₂) :

Maximum concentration of SO₂ is observed to be 17µg/m³ at AAQM -11 and minimum value of 5 µg/m³ observed at AAQM- 1 to 10 & 12.

Oxides of Nitrogen (NO_x) :

Maximum concentration of NO_x is observed to be 17 µg/m³ at AAQM - 11 & minimum value of 9 µg/m³ observed at AAQM – 1 to 6, 9,10 & 12

Carbon Monoxide (CO) :

Maximum concentrations in the region are observed to be 0.9 mg/m³ at AAQM-2,3,5 - 8 & 12 and minimum value of 0.2 mg/m³ observed at AAQM-1

Silica

Silica in the ambient air of the 10 Km radius of the study area of the project site has been analysed from the PM₁₀ filter paper of the Ambient Air quality monitoring stations (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 0.01µg/m³ to 0.04µg/m³.

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 eleven locations including project within the study area. The noise levels ranged between 47.3 to 53 (A) during day time and noise levels ranged between 38.3 to 43.1 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

In order to establish the baseline water quality, 6 ground water and 6 surface water samples were collected and analyzed in the study area. The quality of surface water samples was compared with surface water specification IS 2296:1982 and the surface water quality comes under Class D (Propagation of wildlife and fisheries). The ground water samples were compared with drinking water specification IS 10500:2012 standards.

3.5 Soil Quality

A total of 11 samples in and around the project site are collected and analysed. It has been observed that the pH of the soil quality ranged from 7.1 (S5 & S7) to 7.5 (S4) indicating that the soil is slightly alkaline in nature

3.6 Land Use/Land Cover of the Study Area

The project site is at Chhitapandriya village, which is in the Jaijaipur tehsil of the Janjgir Champa district of Chhattisgarh, India. It is 14 kilometers from the sub-district headquarters in Jaijaipur (tehsildar office) and 27 kilometers from the district headquarters in Janjgir. According to 2009 census data, Aadil is the gram panchayat of Chhitapandriya village. The

village's entire geographical area is 256.15 hectares, with the project location occupying 327.98 square kilometers. Chhitapandriya has a total population of 937 people, 496 of whom are male and 441 of whom are female. Chhitapandriya village has a literacy rate of 65.64%, with 72.98% of men and 57.37% of females being literate. Chhitapandriya village has roughly 250 homes. Chhitapandriya village's zip code is 493222.

The village of Chhitapandriya is run by a sarpanch, who is chosen to serve as the community's representative through local elections. According to 2019 statistics, the village of Chhitapandriya is part of the Chandpur assembly district and the Janjgir Champa parliamentary district. For all important commercial operations, Baradwar is the closest town to Chhitapandriya, which is located around 7 kilometers distant. Figure 4 shows those Survey of India topo sheets 64K/13 and 64 J/16 cover the village area (SOI).

The land use and land cover maps for the 10-kilometer research region are shown in Figure E-3, The analysis is separated into 10 area classes, as shown in Figure E-3 LULC map, which includes the following: water body, canal, river crop land, settlement, vegetation, sand, fallow land, forest, and shrub land.

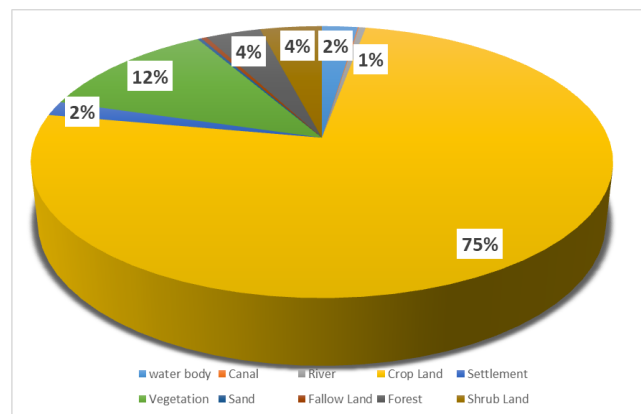


Figure E-3: LULC Classification (10 km radius of the Proposed Project Area)

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

According to secondary statistics (Population Census 2011, the study region has 142446 persons) (10 km radius from the project location). households spread throughout 327.98 square kilometres of area. The female population in the study area is 71429, which is somewhat higher than the male population of 71017. The population concentration in communities within a 10-kilometer radius of the project area is depicted in Figure E-4. The concentration of people within a 10 km radius of the study area was used to construct a map of the research region—the village of Choriya has the most population (6199) The project is located in Chhitapandariya, which has a population of only 1159 people. Figure E-4 depicts the five demographic categories, which reveal that Choria and Sakreli have high populations. The settlements that remain in the villages adjacent to the project area are moderate to sparsely inhabited

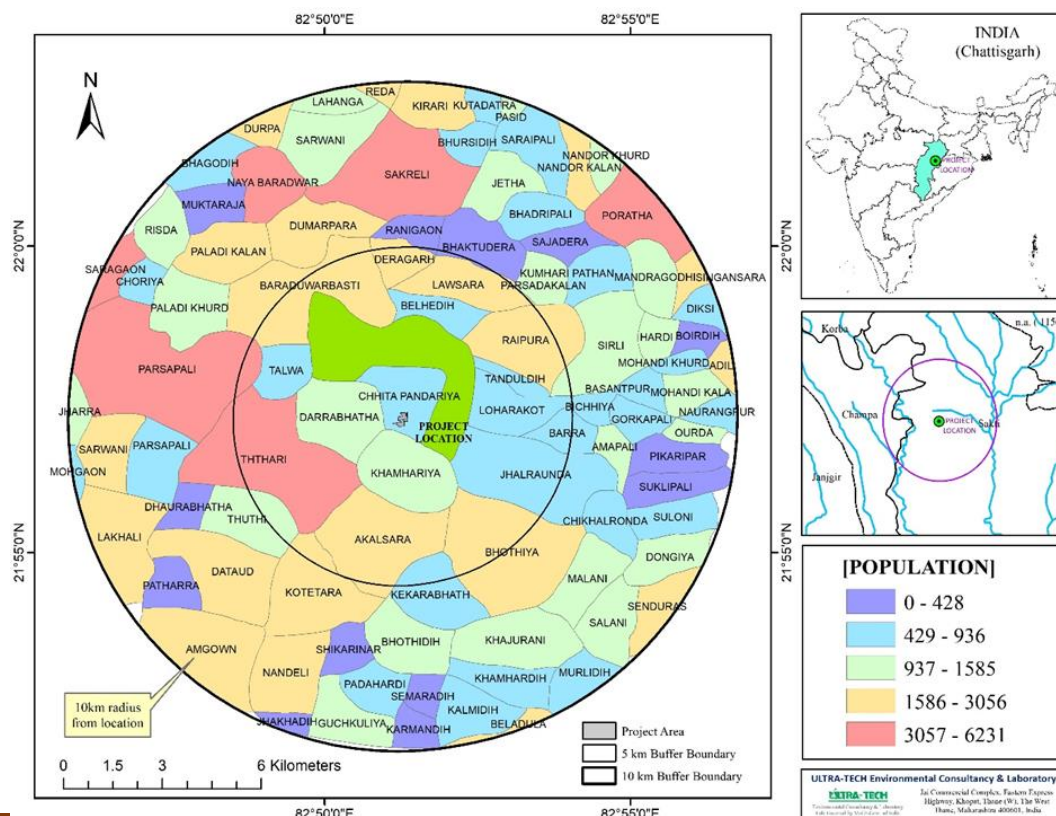


Figure E-4: Population Concentration map of the study area SC and ST Population

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 Dolomite 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.
- The propose 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_x and SO_x within the limits established by CPCB.
- Total 6 KLD water required for three mines towards dust suppression purpose for which 1 no. of water tanker with 6000 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 programmer 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 sits
- 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 unfavorable 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 dolomite 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 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 56 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 M/s. Gurushree Mineral Pvt.Ltd , which includes the Dolomite 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 mechanized open cast method in single shift mining without any change in technology.

This project is being granted to the respective project proponents by the Mineral Resource Department, Govt. of Chhatisgarh, in the approved mineralized zone. This project is far

distance from habitation & on maximum nonproductive 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 dolomite 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 total estimated cost of the project is 238.71 lacs . 4.86 lac will be allocated for CER work for Need based activity for causes of village for drinking water, sanitation, education, health.

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 Dolomite 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.

The total estimated cost of the project is 238.71 lacs . 4.86 lac will be allocated for CER work for Need based activity for causes of village for drinking water, sanitation, education, health.

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.

Table E 5.1: Expenditure Proposed for Environmental Protection Activities:

S.No.	Particulars	Gurushree Minerals Area - 3.036 Ha.		Gurushree Minerals Area - 4.068 Ha.		Gurushree Minerals Area - 4.162 Ha.	
		Capital Cost in Rs	Recurring Cost in Rs	Capital Cost	Recurring Cost in Rs	Capital Cost	Recurring Cost in Rs
1	Air Pollution Control	-	90,000	-	90,000	-	90,000
2	Green Belt Development	1,01,000	1,55,000	82,000	1,62,000	1,54,000	1,54,000
3	Maintenance of Road	-	40,000		40,000		40,000
4	Facilities for Mine workers	1,00,000	63,000	1,00,000	63,000	1,00,000	87,500
	Total ::	2,01,000	3,48,000	1,82,000	3,55,000	2,54,000	3,71,500
Total Capital Cost in Rs		6,37,000					
Total Recurring Cost in Rs		10,74,500					
Total Cost of EMP in Rs		17,11,500					

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.