

## EXECUTIVE SUMMARY

### 1.0 PROJECT DESCRIPTION

#### 1.1 INTRODUCTION

M/s Gangotri Limes Pvt. Ltd. is a private organization engaged in lime making and Shri Gangaram Sharma (MD) having sufficient experience in mining and associated activities.

The proposal was discussed in the 22<sup>nd</sup> meeting of SEAC, Chhattisgarh held on 31.01.2009. As per decision, project proponent made presentation in the 26<sup>th</sup> meeting of SEAC, Chhattisgarh on 13.03.2009. After the submission of the requisite information on 04.05.2009 the proposal was considered in the 30<sup>th</sup> meeting of SEAC, Chhattisgarh held on 08.05.2009. The committee suggested various additional Terms of References (ToR) for the preparation of the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) Report through its letter no. 95/SEIAA CG/EC/Mining/RYP/93/09 dated 10th June, 2009, which are incorporated in the EIA/EMP report at their respective places.

#### 1.2 DETAILS OF THE PROJECT

TABLE – 1.2  
PROJECT SITE DETAILS

S. NO.	PARTICULARS	DETAILS
1.	<b>Nature &amp; Size of the Project</b>	Limestone Production 22,501 TPA (Mine Area 12.137 Ha.)
2.	<b>Location</b>	
	Village	Matia
	Tehsil & District	Raipur
	State	Chhattisgarh
	Latitude	21°19'30" N
	Longitude	81°44'40" E
	Toposheet No.	64 G/11 & 64 G/15
3.	<b>Proposed project area</b>	
	Mine Area	12.137 ha

4.	Cost of the project	Rs. 10 Lakhs
5.	Cost for EMP	Rs 3,60,000 (Capital Cost) Rs 1,20,000 (Recurring Cost)
6.	Water Requirement (KLPD)	2.5 KLPD <b>Source:</b> Domestic water will be sourced from nearby villages and for process and green belt water source from rain water collected in old mining pit.
7.	Manpower Requirement	17 - 22 persons
8.	<b>Project Location Details</b>	
	General Ground Level	281 MSL
	Ground Water Table	20m – 25m
	Nearest Village	Donde-khurd (1.5 km), Matia (2.0 km)
	Nearest City/Town	Raipur – 17 km
	Nearest Railway Station	Mandhar (5 km NW)
	Nearest Railway Head	Raipur - 17 km
	National Highway	Vishakhapatnam to Raipur NH - 6 (10 km in South direction) NH 200 at a distance of 10 km in NW direction
10.	<b>Environmental Setting</b>	
	Reserved Forest within 10 km. radius of the study area	None
	Nearest River / Water Body	Kharun River (10 km in the NNW direction) Kulhan Nallah (4 km in N direction) and Seonath River (30 km in ESE direction)
	National Park/ Biosphere Reserve/ Wildlife Sanctuary/ Migratory Routes for birds	None with the 10 km radius of the study area
	Seismic Zone	Zone II

**Source: Field visit; Mining plan; Mining scheme**

### 1.3 Mining Lease Status

The mining lease area was earlier granted to M/s Cement Corporation of India, Mandhar and subsequently the area was thrown open. The Mining lease was then granted to M/s. Gangotri Limes Pvt. Ltd. from the State Government on 27<sup>th</sup> April 1999 for 20 years period i.e up to 26<sup>th</sup> April, 2019. The Mining Plan was approved vide letter no. RAP/LST/MPLN - 598/NGP dated 14<sup>th</sup> October, 1997 under Rule 22 of Mineral Concession Rule 1960 from Indian Bureau of Mines.

The mining plan was approved for the period of 5 years, and the date of expiry of plan period was 1<sup>st</sup> Nov., 2008. However mining operation was not regular during this period because of lack of demand and financial problems. But now the position is better and mine owner is getting supply order. The current proposal is for a production of 22501 TPA. The mining scheme for the same has been approved by the Indian Bureau of Mines vide letter no. RAP/LSTMPLN - 598/NGP dated 12<sup>th</sup> December, 2008. Along with the scheme, a progressive closure plan) too was submitted and got approved. Both the scheme and the closure plan have been prepared as per the rule 12(3) & 23 B (2) of MCDR 1988.

### 1.4 MINING DETAILS

Table – 1.4  
DETAILS ABOUT THE MINING LEASE AREA

S. No.	DETAILS	
1.	Mining lease area	12.137 Ha
2.	Mining Method	Manual Opencast method of Mining
3.	Mineable reserves	10,96,215 Tonnes
4.	Proposed Production	22,501 TPA
5.	Life of mine	49years
6.	General Ground Level	281 MSL
7.	Ground water level	20-25 m bgl
8.	Working Depth	Ultimate : 277 MSL
9.	Bench Height (H)	3.0 Mainkar

10.	Ultimate Pit Slope	45 <sup>0</sup>
11.	Total waste generation	10,003 Tonnes

#### 1.4.1 METHOD OF MINING

Proposed method of mining is Manual opencast mining and it is in small scale. Very light drilling and blasting carried out for the production of limestone carried out for production of limestone. The height of bench will be 3m.

#### 1.4.2 EXTENT OF MECHANIZATION

List of mine machinery is given as under:

**TABLE-1.4.2**

S. No.	Type of machine	Numbers
1.	Jack Hammer	1
2.	Air Compressor	1
3.	JCB Loader	1
4.	Tractor / Trolley	2

*Source: Scheme of Mining*

#### 1.4.3 WATER REQUIREMENT

Total water requirement for the proposed project will be 2.5 KLPD.

**TABLE – 1.4.3**

#### **WATER REQUIREMENT**

S.No.	Details	Water Required
1.	Water Sprinkling	500 Liters during dry season
2.	Plantation	500 Liters
3.	Domestic & Drinking	1000 liters
4.	Mining	500 Liters
<b>Total</b>		<b>2500 Liters</b>

**Source:** Rainwater collected in Old Mining pits will be used for the water sprinkling and other mining activities including greenbelt development. For domestic purpose water will be sourced from nearby villages.

#### 1.4.4 MAN POWER REQUIREMENT

For safe and systematic mining, technical & supervisory staff will be provided at the mine site, detailed below in the table. Employment opportunities will be given to locals.

**TABLE – 1.4.4  
MAN POWER REQUIREMENT**

S.No.	Category	Requirement
1.	Mine Manager	1
2.	Part Time Mining Engineer	1
3.	Mining Mate	1
4.	Supervisor	1
5.	Skilled Workers	3
6.	Unskilled Workers	10 - 15
	<b>Total</b>	<b>17 – 22</b>

## 2.0 DESCRIPTION OF THE ENVIRONMENT

### 2.1 CLIMATIC CONDITION

Raipur has a sub-tropical climate; temperatures remain moderate for most of the year, apart from the summer from March to June, which can be extremely hot. Winters last from November to January and are mild, although lows can fall to 5 °C (42 °F). The annual rainfall of the area is around 1385 mm. The rainfall generally increases from the north-west to the south-east. About 94 percent of the annual rainfall is received during the period June to October, July and August being the rainiest months. The variation in annual rainfall from year to year is very large. On an average there are 60 - 80 rainy days in a year.

### 2.2 OTHER BASELINE DETAILS

During the study period, ambient air quality and noise level monitoring was done at 10 locations whereas water sampling and soil sampling was done at 8 locations.

**TABLE – 2.2**  
**ENVIRONMENTAL BASELINE DATA**  
**STUDY PERIOD – OCTOBER TO DECEMBER, 2009**

S. No.	Particulars	Details
<b>A.</b>	<b>Ambient air quality</b>	
	SPM	98.3 to 186.7 $\mu\text{g}/\text{m}^3$
	RSPM	33.16 to 61.61 $\mu\text{g}/\text{m}^3$
	SO <sub>2</sub>	5.5 to 12.3 $\mu\text{g}/\text{m}^3$
	NO <sub>x</sub>	6.2 to 15.4 $\mu\text{g}/\text{m}^3$
<b>B.</b>	<b>Noise level</b>	
	Day time	45 to 52 Leq. dB (A)
	Night time	39 to 47 Leq. dB (A).
<b>C.</b>	<b>Water quality</b>	
	Ph	7.42 to 7.88
	TDS	280.00mg/l to 395.00mg/l
	Total Hardness	195.18mg/l to 246.23mg/l
<b>D.</b>	<b>Soil quality</b>	
	Texture	Loamy Sand
	pH	7.00 to 7.80
	Organic matter	0.78% to 0.99%

### 2.3 BIOLOGICAL ENVIRONMENT

**Flora:** Tree species which are most commonly found in the area are *Acacia arabica* (Babool), *Acacia catechu* (Khair), *Emblica officinalis* (Amla), *Dalbergia sissoo* (Shishum), *Ficus bengalensis* (Bargad), *Terminalia arjuna* (Arjun) etc.

**Fauna:** Commonly found animal in the study area are Hare (*Lepus nigricollis*), Rat (*R.rattus*), Sparrow (*Passer domesticus*), Indian Myna (*Acridotheres tristis*), House crow (*Corvus splendens*), Pigeon (*Columba livia*) etc.

### 2.4 SOCIO-ECONOMIC ENVIRONMENT

The population as per 2001 Census records is 106662 (for 10 km radius study area). Scheduled Caste fraction of the population of the study area (10 km) is 19466 and Scheduled Tribe 3763. Literacy rate is 66.56%. Whereas Out of the total Working population of 40811, Main Workers are 29172.

### 3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

- **Impact on air** – No any kind of air pollution pointed out. The method of mining is manual in nature and the operation is very small. 3 to 4 times water sprayed manually in road and dusty area during the dry season mine road. Drill hole will be flushed with water
- **Impact on water environment** – There is no surface water bodies available in the lease area. There is some local nallah which is more than 1000 mtrs away from the mining lease area which is only active in the rainy season. There will be no beneficiation process is envisaged, so no question is arise of any toxic discharge or dump which contaminate the water.
- **Impact of noise** – As there is no any noise level pointed out which crossing the limit. Drilling will be done with the help of Jack Hammer which will be done on small scale and water used for flushing.
- **Impact on land environment** – As this is an existing mine thus no constructional activities will be involved whereas Backfilling will be done after attaining the optimum thickness of limestone and it will take more than 20 years.

### 4.0 POST PROJECT MONITORING PROGRAMME

Table – 4.0

#### POST PROJECT MONITORING PROGRAMME

S. No.	DESCRIPTION	FREQUENCY OF MONITORING
1.	Meteorological Data	Daily
2.	Ambient Air Quality at Mine site	Quarterly/ Half Yearly
3.	Water Quality	Quarterly/ Half Yearly
4.	Noise Level Monitoring	Quarterly/ Half Yearly
5.	Soil Quality	Half Yearly/yearly
6.	Monitoring of Agricultural crops	Yearly
7.	Socio – economic status of nearby area	Yearly

## 5.0 ADDITIONAL STUDIES

The Additional Studies are conducted as per the additional Terms of References which are issued vide State Level Expert Appraisal Committee vide letter no.: 95/SEIAA CG/EC/Mining/RYP/93/09 dated 10th June, 2008.

## 6.0 PROJECT BENEFITS

Better education facilities, proper health care, road infrastructure and drinking water facilities are basic social amenities for better living standard of any human being. **M/s. Gangotri Limes Pvt. Ltd.** will initiate the above amenities either by providing the facility or by improving the facilities in the area, which will help in uplifting the living standards of local communities.

## 7.0 ENVIRONMENT MANAGEMENT PLAN

### 7.1 LAND USE MANAGEMENT

The mining lease is having very thin soil and there was no requirement of any additional development prior to the mining operation. Due to old mining operation there is no top soil or overburden. During the last five years no soil/overburden was generated because limited mining operation was done due to lack of demand.

The reclamation activity will be done only after attaining the optimum thickness of limestone, which is economically viable, has been extracted. The soil generated will be stacked along the lease boundary so that it can be used for the reclamation purpose, or it will be used for the Afforestation. The thickness of alluvial soil is very less in the area. For this reason it may not be possible to reclaim the area fully by soil and it can be done partially.

**TABLE: 7.1**

### Environmental Management

#### Post-mining (conceptual) land use of core zone with environment management

S. No.	Description	Plantation	Water Body	Public Use	Undisturbed	Total
1.	Top Soil Dump	0.107	-	-	-	0.107
2.	External Waste	0.280	-	-	-	0.280

	Dump					
3.	Excavation (voids)	-	8.487	-	-	8.487
4.	Road	-	-	0.300	-	0.300
5.	Built up area	-	-	0.039	-	0.039
6.	Afforestation	0.362	-	-	-	0.362
7.	Mineral storage	-	-	-	-	-
8.	Prospecting area	-	-	-	-	-
9.	Undisturbed Area	-	-	-	2.562	2.562
	<b>Total</b>	<b>0.749</b>	<b>8.487</b>	<b>0.339</b>	<b>2.562</b>	<b>12.137</b>

*Source: Pre Feasibility Report*

## **7.2 AIR MANAGEMENT**

- All the haul roads will be kept properly graded with sufficient width and regular water spraying will be done on the haul roads.
- Drilling machines will be equipped with wet drilling arrangements
- Personal Protective Equipments like dust mask will be provided to all employees working in the likely dusty areas.
- Development of green belt/plantation periphery of the mining lease area to arrest dust.

## **7.3 WATER MANAGEMENT**

- Garland drains will be constructed on all sides of quarry. The collected water in the pit will be used for plantation and spraying on haul roads.
- No wastewater will be generated from the mining activities.
- Septic tanks and soak pits will be provided for the disposal of domestic effluent generated from mine office.

## **7.4 SOLID WASTE MANAGEMENT**

Limestone of this mine not covered with alluvial soil which can be called as waste. However, if some quantity of topsoil is generated then it will be stacked along the lease boundary. Some quantity of small chips generated

during the sizing of limestone not recoverable can be called as waste which is very small in quantity say not more than 10003 tonnes.

## 7.5 NOISE MANAGEMENT

- Plantation will be taken up all around the lease area. The plantation minimizes propagation of noise.
- Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise.
- The drilling will be carried out with the help of sharp drill bits which will help in reducing noise vibration.

## 7.6 SOCIO-ECONOMIC ENVIRONMENT

Mine management will be recruit the semi skilled & unskilled workers from the nearby villages thus increasing the social status of the villagers.

## 7.7 GREENBELT DEVELOPMENT AND PLANTATION PROGRAMME

At the end of life of mine, it is proposed to develop green belt on about 0.749 ha of the mine area.

**TABLE: 7.7**

**Ecology: Stage wise Cumulative Plantation**

Year	Unworked Area Greenbelt		Waste Dump at lease boundary		Inside Dumps (Reclaimed Area)		Top Soil Dumps		Total	
	Area (Ha)	Trees	Area (Ha)	Tree s	Area (Ha)	Trees	Area (Ha)	Trees	Area (Ha)	No. of Trees
Existing	-	-	0.030	30	-	-	-	-	0.03	30
I	-	-	0.022	22	-	-	-	-	0.022	22
II	-	-	0.022	22	-	-	-	-	0.022	22
III	-	-	0.022	22	-	-	-	-	0.022	22
IV	-	-	0.022	22	-	-	-	-	0.022	22
V	-	-	0.022	22	-	-	-	-	0.022	22
VI th year onward	-	-	1.997	1997	-	-	-	-	1.997	1997

<b>Total</b>	-	-	2.137	2137	-	-	-	-	<b>2.137</b>	<b>2137</b>
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Preference will be given to the following species under Green cover Cassia fistula, Delbergia sisso, Mangifera indica, Accacia species, Acacia nilotica, Ficus religiosa, Polyalthia longifolia, Tectona grandis, Shorea robust, Azadirachta indica, Albizzia lebbek, Terminalia arjuna etc. Plantation shall be carried out as per CPCB guidelines.

## **8.0 CONCLUSION**

As discussed, it is safe to say that the project is not likely to cause any significant impact on the ecology of the area, as adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Green Belt Area development around the mining lease would also be taken up as an effective pollution mitigative technique, as well as to control the pollutants released from the mining lease of **M/s Gangotri Limes Pvt. Ltd.**

