

# **EXECUTIVE SUMMARY**

**OF  
ENVIRONMENTAL IMPACT  
ASSESSMENT REPORT AND  
ENVIRONMENTAL MANAGEMENT PLAN  
FOR  
PUBLIC HEARING  
OF**

**Expansion of Shree Limestone Mine  
from 8.6 Million TPA to 11.06 Million TPA Limestone  
(ROM Basis: 14.48 Million TPA which includes 11.06 Million TPA  
Limestone Production and 3.42 Million TPA  
Inter-burden, Over-burden excluding Top Soil)  
(ML No. 38/2007, ML. Area: 531.126 ha)  
and Crushers  
(Primary: 2 x 1200 TPH & Secondary: 2 x 450 TPH)**

**At**

**Villages: Bharuwadih & Semaradih, Tehsil- Balodabazar in  
District Balodabazar-Bhatapara (Chhattisgarh)**

**APPLICANT**



**M/s. Shree Cement Limited**

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## EXECUTIVE SUMMARY

### 1.0 PROJECT DESCRIPTION

#### 1.1 INTRODUCTION

Shree M/s. Shree Cement Limited (SCL) is a Public Limited Company and environment friendly business organization incorporated under the Companies Act, 1956 (no. 1 of 1956) on 25th October 1979. The Company is engaged in the business of cement manufacturing, mining of mineral for Cement manufacturing and generation of electrical power for captive use & sell.

##### **Cement manufacturing facilities**

Presently, our cement production capacity stands at 34.9 Million TPA. The Company's Cement and Clinker manufacturing facilities are located at Beawar & Ras in Rajasthan and Raipur in Chhattisgarh. It has split grinding units at seven locations viz. Khushkhera, Suratgarh, Jobner in Rajasthan, Roorkee in Uttarakhand, Aurangabad in Bihar, Bulandshahr in Uttar Pradesh and Panipat in Haryana.

##### **Power Generation Facilities**

Total Thermal Power Plants Capacity of the Company is 616 MW (including 111 MW Waste Heat Recovery Green Power Capacity which is the largest capacity of Green Power in the entire world cement industry excluding China). The power generated from these plants is primarily utilized for consumption in its own cement plants as well as to sell to the outside parties.

##### **Products**

The Company pursues with multi-brand portfolio strategy consisting of three brands viz ;Shree Jang Rodhak Cement, Bangur Cement and Rockstrong Cement. The Company currently has the highest market share in Rajasthan, Delhi and Haryana and possess distinguished top position in states of Punjab, West Uttar Pradesh and Uttarakhand.

#### 1.2 TYPE OF PROJECT

This is Expansion of Shree Limestone Mine from 8.6 Million TPA to 11.06 Million TPA Limestone (ROM Basis: 14.48 Million TPA which includes 11.06 Million TPA Limestone Production and 3.42 Million TPA Inter-burden & Over-burden excluding Top Soil) (ML No. 38/2007, ML. Area: 531.126 ha) and crushers (Primary: 2 x 1200 TPH & Secondary: 2 x 450 TPH) at Villages: Bharuwadih & Semaradih, Tehsil- Balodabazar in District Balodabazar-Bhatapara (Chhattisgarh).

Mining Plan & Progressive Mine Closure Plan has been approved by Indian Bureau of Mines (IBM) vide letter no. vide letter no. Baloda bazar/ Chup/MP-1125/2017 –Raipur dated November, 30<sup>th</sup> .2017.

As per EIA Notification dated 14<sup>th</sup> September, 2006 and amended as on date; the project falls under S. No.'1' (Mining of Minerals), Project or Activity -1(a)-(3) , Category "A" and therefore requires Environmental Clearance from MoEFCC, New Delhi.

### 1.3 NEED FOR THE PROJECT

Shree Cement Ltd. has proposed expansion of existing Integrated Cement Plant - Clinker (2 x 2.6 to 3 x 4.5 Million TPA), Cement (2 x 3.0 to 3 x 5.5 Million TPA), Waste Heat Recovery Power Plant (30 to 100 MW) and Captive Thermal Power Plant (25 to 125 MW) near Village Khapradih, Tehsil Simga, District Balodabazar - Bhatapara (Chhattisgarh). The project has been considered in EAC Meeting (Industry-I) held during 10– 12 July 2017 and the project has been recommended for ToR.

ToR Letter for the Integrated Cement Plant has been issued by MOEFCC, New Delhi vide letter no 11011/235/2008- IA-II (I) dated 06th Nov., 2017.

The Limestone requirement of the above mentioned integrated cement Plant will be fulfilled by the following Mine sites:

- ✎ Expansion of Shree Limestone Mine from 8.6 Million TPA to 11.06 Million TPA Limestone (ROM Basis: 14.48 Million TPA which includes 11.06 Million TPA Limestone Production and 3.42 Million TPA Inter-burden & Over-burden excluding Top Soil) (ML No. 38/2007, ML. Area: 531.126 ha) and crushers (Primary: 2 x 1200 TPH & Secondary: 2 x 450 TPH) at Villages: Bharuwadih & Semaradih, Tehsil- Balodabazar in District Balodabazar-Bhatapara (Chhattisgarh).
- ✎ Proposed Captive Limestone Mine (Karhi Chandi Limestone Deposit) Area - 242.127 ha with production capacity of 1.95 Million TPA (ROM) (1.5 Million TPA Limestone and 0.45 Million TPA Inter - burden) Near Villages: Karhi, Chandi & Khapradih, Tehsil- Simga, District Balodabazar-Bhatapara (Chhattisgarh). Proposed Karhi Chandi Limestone Mines with area of 242.127 Ha at 11.06 Million TPA.

### 1.4 BRIEF DESCRIPTION OF THE PROJECT

**Table – 1**  
**Brief Description of the Project**

S. No.	Particulars	Details
A.	Nature of project	Expansion in Limestone Production Capacity
B.	Size of project	
1.	Area	531.126 ha
2.	Expansion in Limestone Production Capacity	From 8.6 Million TPA to 11.06 Million TPA Limestone (ROM Basis: 14.48 Million TPA which includes 11.06 Million TPA limestone production and 3.42 Million TPA Inter-burden & Over-burden excluding Top Soil)
C	Project Location (Location Map showing general and specific location of Mine site has been given as Figure- 1)	
1.	Villages	Semaradih & Bharuwadih
2.	Tehsil	Balodabazar

Expansion of Shree Limestone Mine from 8.6 Million TPA to 11.06 Million TPA Limestone (ROM Basis: 14.48 Million TPA which includes 11.06 Million TPA Limestone Production and 3.42 Million TPA Inter-burden & Over-burden excluding Top Soil) (ML No. 38/2007, ML. Area: 531.126 ha) and crushers (Primary: 2 x 1200 TPH & Secondary: 2 x 450 TPH) At Villages: Bharuwadih & Semaradih, Tehsil- Balodabazar in District Balodabazar-Bhatapara (Chhattisgarh)		
Executive Summary of Draft EIA / EMP Report		

S. No.	Particulars	Details
3.	District	Balodabazar – Bhatapara
4.	State	Chhattisgarh
5.	Coordinates	Latitude: 21°34'36"N to 21°37'06"N
		Longitude: 82°03'12"E to 82°06'12"E
6.	SOI Toposheet No.	Core Zone: F44Q2 Buffer Zone: F44Q2 & F44P14
D	<b>Environmental Setting Details (with approx. aerial distance and direction from the mining lease boundary)</b>	
1.	Nearest State / National Highway	SH-10 (~6.5 Km in NE direction) NH- 200 (~30 Km in WNW direction)
2.	Nearest Railway Station	Bhatapara (~18 Km in NW direction)
3.	Nearest Airport	Swami Vivekanand Airport Raipur (~55 km in SSW direction)
4.	National Park, Wild Life Sanctuary, Biosphere Reserves, Wildlife corridors, Tiger/Elephant Reserves, etc. within 10 km radius of the project site	None
5.	Reserve / Protected Forest within 10 km radius of Project Site	Dhabadih RF (~ 0.25 Km in the North direction)
6.	Water body within 10 km radius study area	➤ Mahanadi Canal (Adjacent to Lease Boundary) ➤ Chitawar Nala (~1.2 km in South direction) ➤ Khorsi Nala (~2.5 km in ESE direction) ➤ Kukurdih Talav (~3.5 km in NNE direction) ➤ Banjari Nala (~4.5 km in NW direction) ➤ Tengna nala (~5.0 km in ESE direction) ➤ Jhorki Nala (~5.0 km in South direction) ➤ Kauwa Nala (~6.0 km in ESE direction)
7.	Seismic Zone	Zone – II as per IS: 1893 (Part-I) : 2002
E	<b>Cost Details</b>	
1.	Project Cost	Rs. 67.68 Crores /-
2.	Cost of EMP	Capital Cost: Rs.0.25 Crores /- Recurring Cost: Rs. 0.10 Crores /-

**Source:** Site Visit & Pre-feasibility Report

Expansion of Shree Limestone Mine from 8.6 Million TPA to 11.06 Million TPA Limestone (ROM Basis: 14.48 Million TPA which includes 11.06 Million TPA Limestone Production and 3.42 Million TPA Inter-burden & Over-burden excluding Top Soil) (ML No. 38/2007, ML. Area: 531.126 ha) and crushers (Primary: 2 x 1200 TPH & Secondary: 2 x 450 TPH)

At Villages: Bharuwadih & Semaradih, Tehsil- Balodabazar in District Balodabazar-Bhatapara (Chhattisgarh)

Executive Summary of Draft EIA / EMP Report

## 1.5 Location Map

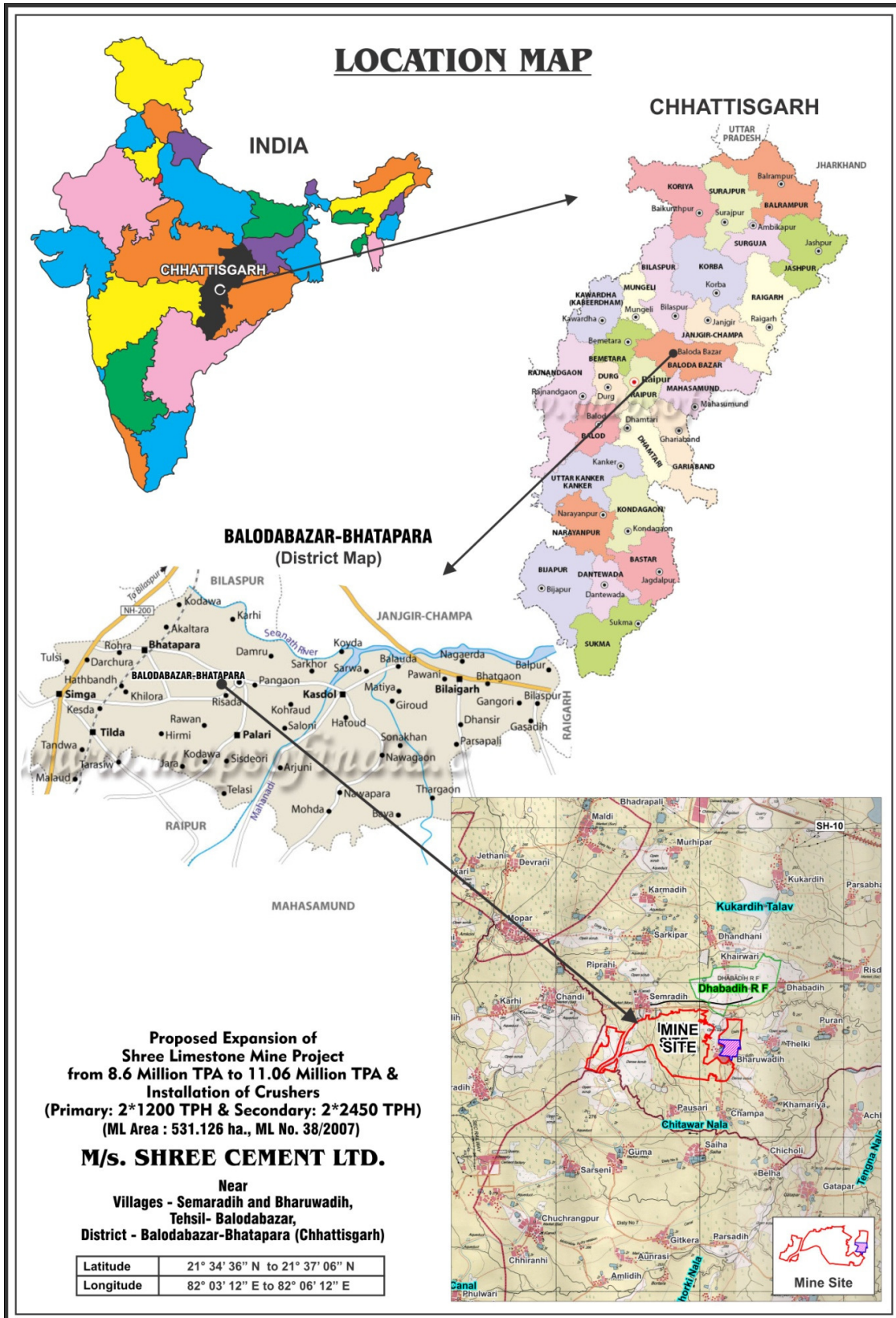


Figure 1- Location Map

## 1.6 MINE DESCRIPTION

### 1.6.1 Mining Lease Status

- The mining lease over an area of 531.126 ha was granted in favor of Shree Cement Limited vide the Government order no. F-2/32/2003/12 (3) dated 12.07.2010.
- Mining Lease was executed on 11.01.2011 for a period of thirty years i.e., up to 10.01.2041.
- Govt of India has amended the Mines and Minerals (Development and Regulation) Act, 1957 and has promulgated an ordinance on 12.01.2015 (MMDR Amendment Ordinance, 2015) according to which the period of grant of mining lease extended up to 10.01.2061 as per section 8A. amendment agreement to extend the period of mining lease was made on 14.07.2016.

### 1.6.2 Mining Details

**Table – 2**  
**Mining Details**

S. No.	Particulars	Details
1.	Method of mining	Open Cast Mechanized Mining
2.	Total Geological Reserves	237.9 Million Tonne
3.	Mineable reserves	208.9 Million Tonne
4.	Life of the Mine	20 Years
5.	Bench Height and Width	Bench Height – 12 meter Bench Width –30 meter
6.	Elevation Range	261m AMSL to 277 m AMSL
7.	General Ground Level	272 m AMSL
8.	Water table	Pre Monsoon: 256 to 265 m AMSL (16 to 7 mbgl) Post Monsoon: 264 to 268 m AMSL (8 to 4 mbgl)
9.	Ultimate Working Depth	192 m AMSL (80 mbgl)
10.	Stripping Ratio (Ore: Inter Burden) (mio t : mio t)	1:0.4
11.	Overall Pit Slope	45°
12.	Number of working days	340 days
13.	Number of shifts per day	3 shifts

**Source:** Approved Modified Mining Plan & Progressive Mine Closure Plan

### 1.6.3 Method of Mining

- ⌘ Mining operations is being/ will be carried out by mechanized opencast method conventional mining method i.e. by combination of shovel and dumper with Drilling and blasting.
- ⌘ Bench height and bench width is being/ will be maintained at 10 m and 30 m respectively.

- Drilling is being/ will be carried out by crawler mounted DTH hammer Drill machine.
- Controlled blasting is being/ will be done using ANFO and high explosives with use of stock tube detonator.
- Loading is being/ will be done by Hydraulic Excavators and transport of limestone and waste will be done by dumper to crusher (located in mining lease area).
- The crushed limestone is being/ will be transported from the mine site to cement plant by covered Conveyor belt.

#### 1.6.4 Extent of Mechanization

**Table – 3**  
**Machinery & Equipments**

S. No.	Machinery	Total no.	Capacity
1.	Drill Machines	4	62400 MT
2.	Hydraulic Excavator	7	63000 MT
3.	Dumper	21	63000 MT
4.	Water Tanker	3	12 KL
5.	Explosive Van	2	9 MT
6.	Maintenance Van	2	-
7.	Diesel Tanker	3	12 KL
8.	Rock Breaker	4	-
9.	Soil Compactor	2	15 MT
10.	Motor Grader	2	-
11.	ANFO Pump Truck	2	10 MT
12.	Jeep	3	-
13.	Crusher	2 + 2	1200 TPH (Primary Crusher) + 450 TPH (Secondary Crusher)

**Source:** Approved Modified Mining Plan & Progressive Mine Closure Plan

## 2 DESCRIPTION OF THE ENVIRONMENT

### 2.1. Presentation of Results (Air, Noise, Water & Soil)

Baseline study of the study area was conducted during Post Monsoon Season, October - December, 2017.

The concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> for all the 15 AAQM stations were found between 59.7 to 84.2 µg/m<sup>3</sup> and 24.3 to 43.2 µg/m<sup>3</sup> respectively. The concentrations of SO<sub>2</sub> and NO<sub>2</sub> were found to be in range of 5.9 to 13.5 µg/m<sup>3</sup> and 12.5 to 28.5 µg/m<sup>3</sup>, respectively.

Ambient noise levels were measured at 15 locations around the Mine site. Noise levels varies from 49.5 to 65.5 Leq dB (A) during day time and from 38.2 to 58.5 Leq dB(A) during night time.



The Surface water analysis for all the 5 sampling stations shows that pH varies from 7.86 to 8.15, total hardness varies from 68.30 mg/l to 212.84 mg/l & total dissolved solids varies from 96 mg/l to 299 mg/l.

The ground water analysis for all the 10 sampling stations shows that pH varies from 7.36 to 8.02, total hardness varies from 216.46 mg/l to 552.29 mg/l & total dissolved solids varies from 234.0 mg/l to 801.0 mg/l.

Samples collected from identified locations indicate pH value ranging from 7.7.60 to 8.05. Organic Matter ranges from 0.87% to 1.13% in the soil samples. Nitrogen is found to be in moderate amount as it ranges from 215.45 kg/ha to 306.54 kg/ha and Phosphorous in less amount i.e. from 30.22 kg/ha to 55.60 kg/ha, whereas the Potassium is found to be ranging from 215.90 kg/ha to 492.07 kg/ha.

## 2.2. Biological Environment

**Flora:** Species which are most commonly found in the study area are *Azadirachta indica* (Neem), *Pongamia pinnata* (Karanj), *Acacia nilotica* (Babool), *Phyllanthus emblica* (Amla), *Zizphus nummularia* (Ber), *Syzygium cumini* (Jamun), *Artocarpus heterophyllus* (Jackfruit) and *Psidium guajava* (Amrud) etc.

**Fauna:** Commonly found fauna in the study area are *Funambulus pennanti* (Palm squirrel), *Hyaena hyaena* (Stripped hyaena), *Vulpus bengalensis* (Indian fox), *Herpestes edwardsii* (Mongoose), *Saara hardwickii* (Spiny tailed lizard), *Felis chaus* (Jungle cat) and *Pteropus giganteus* (Indian Flying fox) etc.

## 2.3. Socio-Economic Environment

The population as per 2011 Census records is 109651 (in 10 km radius Study Area). Scheduled Caste population of the study area (10 km) is 26275 (24 %) and Scheduled Tribe is 12907 (12 %). Total no. of household in the area is 21928 and percentage of literacy is 72.90 %.

## 3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

⇒ **Impact on Air Environment** - The key air emissions from the mining activities (drilling, blasting, loading, haulage and transportation) are Particulate Matter, Oxides of Nitrogen (NO<sub>2</sub>) and Sulphur dioxide (SO<sub>2</sub>). Gaseous emissions is being/ will be generated from HEMM, crusher & transportation of vehicles. Use of proper mitigation measures are being/ will be taken like water sprinkling during transport activities & development of green area along the road sides to control fugitive emissions. Better maintenance of equipments also help to reduce such emissions.

**Impact on Water Environment** - Mahanadi canal (Baloda Branch Canal) is passing adjacent to the ML area. One Minor canal is passing through the northern part of Block 1 and one

minor canal is passing through the southern part of Block 3 which will be diverted outside the mining lease later on for mineral conservation point of view.

Except this, Water bodies like Banjari Nala, Chitawar Nala, Kukurdih Talav, Tengna Nalla and Khorsi Nala also exists in the study area. The proposed working will not affect any of the streamlets. Adequate protection measures are being/ will be taken to protect the water bodies from mining operation.

No waste water is being/ will be generated during mining operations. Wastewater generated from office toilets is being/ will be disposed off in soak pit via septic tank. Waste water generated from workshop is being/ will be treated with Oil/ grease/ Water separator. Therefore there is no significant impact on the water environment due to the mining operations in limestone Mining Lease area.

General Ground level of the mining lease area is 272 m AMSL. According to groundwater monitoring Water level in core zone varies from 256 to 265 m AMSL (16 to 7 mbgl) in Pre Monsoon and 264 to 268 m AMSL (8 to 4 mbgl) in Post Monsoon season and Ultimate working depth of the mining operation will be 192 m AMSL (80 mbgl). As per the mining details Water table will be intersected due to mining activities. Permission for the same has been obtained from CGWA vide letter no. 21-4(36)/NCCR/CGWA/2008-569 dated: 08.04.2015 & amended vide letter no. 21-4 (36)/ NCCR/CGWA/2008-1270 dated 06.08.2015. Renewal application for the same has been submitted to CGWA vide letter no.SCL/SRCP/LS Mine, Plant & Colony/Renewal-NOC/CGWA/2018 dated 21.03.2018.

Moreover, the mineral limestone and associated rocks do not contain any toxic substance. Therefore, there is no significant impact of mining activities on any source of water.

80 **Impact of Noise & Vibration** - Major noise generating sources of the mining activity are drilling, blasting, crushing and HEMM movement used for transportation of limestone. The plantation and the green belt around the mining lease boundary help in reducing noise level and proper mitigation measures are being/ will be carried out. Controlled blasting techniques through proper blast design and explosive selection reduce the vibrations to a greater extent.

80 **Impact on Land Environment** – The land use of the lease area will be altered from waste land as well as agricultural land to mining area including pits, temporary dumps, greenbelt, water reservoir etc but will not have any significant effect on the surface features of the surrounding areas.

At the conceptual stage total excavated area will be 389.2 ha out of which 319.2 ha area will be converted into water reservoir and 70 ha area will be backfilled. About 21 ha area will be covered under waste dump and total greenbelt/Plantation will be done on 176 ha.

#### 4.0 POST PROJECT ENVIRONMENTAL MONITORING PROGRAMME

**Table 4**  
**Post Project Monitoring**

S. No.	DESCRIPTION	FREQUENCY OF MONITORING
1.	Ambient Air Quality	Twice a Week
2.	Water Quality & Level	Quarterly
3.	Noise Level Monitoring	Quarterly
4.	Vibration Monitoring	On every blast
5.	Stack Monitoring	Regular

#### 5.0 ADDITIONAL STUDIES

Additional Studies i.e. Hydro –Geological Study and Risk Assessment & Disaster Management Plan are covered in Draft EIA/EMP Report as per the Terms of References issued vide letter no. J-11015/07/2018-IA.II (M) dated 6.02.2018.

#### 6.0 PROJECT BENEFITS

The expansion project will help in meeting the growing demand of cement & hence help in the economic growth of the country. It is/ will be helpful in the development of basic needs of the local area like education, Health & family welfare, women empowerment, Natural resource management, water conservation, roads etc. It results/ will result in growth of the surrounding areas by increasing direct and indirect employment opportunities in the region including ancillary development and supporting infrastructure.

#### 7.0 ENVIRONMENT MANAGEMENT PLAN

##### 7.1 Air Quality Management

- Wet drilling/ dry drilling with de dusting arrangements are being/will be used.
- Controlled blasting by latest blasting technique using shock tube detonator (Down line detonator in combination with noise less trunk line detonators).
- Use of Rock breaker in place of secondary blasting to reduce generation of fly rocks and ground vibration. The system is ECO friendly.
- Regular water spraying is being/will be done to prevent generation of dust from vehicular movement.
- Waste dumping sites will be vegetated by suitable plantation to prevent air pollution during stormy winds.
- Gaseous emissions generated from HEMM and blasting are being/ will be kept within limits by proper maintenance of all machineries and controlled blasting with suitable explosives.

- In order to reduce air pollution in the surrounding, Green Belt has been/ will be developed around mine office, approach roads, pit peripheries and waste dump yards and along the boundary.
- Periodic air quality survey is being/will be carried and the records is being/ will be maintained properly.
- 33% of total colony area will be developed as greenbelt in phased manner.

## **7.2 Water Quality Management**

- No waste water is being / will be generated from the mining activities.
- Septic tanks and soak pit is being / will be provided for the disposal of domestic waste water generated from mine office.
- Waste water generated from washing of HEMM is being / will be used in crusher for dust suppression after oil and grease separation.
- Garland drains along with Retaining walls having water holes at the toe of temporary dumps are being / will be constructed to avoid the soil wash out & around the mine pit to prevent surface run off entering into the mine pit.
- Domestic waste water from colony will be treated in already proposed STP of capacity 500KLD and treated water will be used in plantation.
- Periodical Ground water level & quality monitoring is being / will be carried out.

## **7.3 Noise Quality Management**

- Sharp drill bits with wet drilling arrangements.
- Controlled blasting by latest blasting technique using shock tube detonator (Downline detonator in combination with noise less trunk line detonators.)
- Use of Rock breaker in place of secondary blasting.
- HEMMs equipped with acoustic cabins will be provided for the operators.
- Proper maintenance (preventive as well as scheduled maintenance), oiling and greasing of HEMMs to minimize generation of noise.
- Periodical monitoring of noise.
- Development of Green Belt/ Plantation around the mining activity area and along haul roads.

## **7.4 Top soil and Solid Waste Generation & Management**

### **Top Soil**

- At end of the Modified mining plan period, total 1.58 Million cubic meter (2.53 million tonne) Top soil will be generated.
- At the end of life of mine, no top soil will be generated.
- Top Soil excavated during Mining plan period will be used for plantation purpose within and outside Mining Lease Area.

### Top Soil and Solid Waste

- At end of the 5<sup>th</sup> year of modified mining plan, total 4.72 Million cubic meter total waste (4.06 Million cubic meter overburden and 0.67 Million cubic meter interburden) will be generated.
- At the end of life of mine, total 79.29 Million tones waste will be generated.
- During Modified mining Plan period, Waste will be sent for stacking separately in proposed dump which will be utilized for backfilling after attaining the pit to its ultimate position.
- At the end of life of mine, maximum amount of waste will be backfilled in the excavated area and plantation will be done over it after spreading top soil over it and remaining waste will be dumped which will be stabilized by plantation later.

### 7.5 Land use pattern

- At the conceptual stage total excavated area will be 389.2 ha out of which 319.2 ha area will be converted into water body and 70 ha area will be backfilled.
- About 21 ha area will be covered under waste dump. Total greenbelt/Plantation will be done on 176 ha. Total 21.26 ha will remain undisturbed.

### 7.6 Greenbelt Development and Plantation Program

- At the end of life of mine Total greenbelt/Plantation will be done on 176 ha (70 ha on backfilled area and 21 ha area on waste dump, 7.2 ha in colony area, 9.3 ha on 7.5 m barrier zone & 68.5 ha on virgin area).
- Density of plantation would be 2500 trees / ha.
- Survival will be maintained more than 90%.
- Species proposed for plantation on backfilled area are – Sesbania grandiflora (Humming bird tree/Agati), Grevillea robusta (Silver Oak- Usage in mining benches), Peltophorum pterocarpum (Yellow Gulmohar), Tectona grandis (Teak/ Sagwan), Bombax ceiba (Semal), Morus alba (Shahtut), Phyllanthu semblica (Amla Plantation), Annona Squamosa (Sitaphal Plantation), Psidiumguajava (Guava Plantation), Manilkarazapota (Chiku Plantation), Acacia senegal (Gum arabic tree), Moringa oleifera (Senjana), Acacia nilotica (Babool), Acacia catechu (Khair), Cassia fistula (Amaltas), Delonix regia (Gulmohar), Capparis decidua (Kair), Ziziphus mauritiana (Mota Ber), Cynodondactylon (Doob grass).
- Species proposed for plantation on the un worked area are - Azadirachta indica (Neem), Sesbania grandiflora (Humming bird tree/Agati), Grevillea robusta (Silver Oak- Usage in mining benches), Peltophorum pterocarpum (Yellow Gulmohar), Tectona grandis (Teak/ Sagwan), Artocarpus heterophyllus (Jackfruit), Morus alba (Shahtut), Phyllanthus emblica (Amla Plantation), Annona Squamosa (Sitaphal Plantation), Psidium guajava (Guava Plantation), Manilkarazapota (Chiku Plantation), Acacia senegal (Gum arabic tree), Moringa oleifera (Senjana), Tecomastans (Yellow bells), Cassia fistula (Amaltas), Delonix regia (Gulmohar), Nerium indicum (Kaner).

- Species proposed for plantation on the waste dump area are – *Sesbania grandiflora* (Humming bird tree/Agati), *Grevillea robusta* (Silver Oak- Usage in mining benches), *Peltophorum pterocarpum* (Yellow Gulmohar), *Tectona grandis* (Teak/ Sagwan), *Artocarpus heterophyllus* (Jackfruit), *Bombax ceiba* (Semal), *Morus alba* (Shahtut), *Phyllanthus emblica* (Amla Plantation), *Annona Squamosa* (Sitaphal Plantation), *Psidiumguajava* (Guava Plantation), *Manilkarazapota* (Chiku Plantation), *Acacia senegal* (Gum arabic tree), *Moringa oleifera* (Senjana), *Acacia nilotica* (Babool), *Acacia catechu* (Khair), *Cassia fistula* (Amaltas), *Delonix regia* (Gulmohar), *Capparis decidua* (Kair), *Ziziphus mauritiana* (MotaBer), *Cynodon dactylon* (Doob grass).
- This is being/ will be done in consultation with local forest department.

## 7.7

### Socio-Economic Environment

Better education facilities, proper health care, road infrastructure and drinking water facilities are basic social amenities for better living standard of any human being. SCL has provided/ will provide such facilities to the nearby villagers and has improved/ will further improve the facilities in the area, which helps/ will help in uplifting the living standards of local communities.

