EXECUTIVE SUMMARY

For

0.6 MTPA LIMESTONE PRODUCTION
(Captive Limestone Mine)
(Category: A)

Of

KOLIMIGUNDLA LIMESTONE MINE
MINING LEASE AREA: 255.0 Ha
(NON-FOREST LAND)
At

Kolimigundla, Itikyala & Kalvatala Villages Kolimigundla Mandal, Kurnool District, Andhra Pradesh.

Of

THE RAMCO CEMENTS LIMITED
(FORMERLY KNOWN AS MADRAS CEMENTS LTD)
(An ISO 9001:2008, ISO 14001:2004 and IS 18001:2007 Company)

Executive Summary

1.0 INTRODUCTION

THE RAMCO CEMENTS LIMITED (RCL) now proposes to setup a green field Integrated Cement Plant in an area of 186.56 Ha with State-Of-The-Art technology at Kalvatala Village of Kolimigundla Mandal, Kurnool District, Andhra Pradesh. The production capacity of the proposed plant will be as follows:

- 3.15 MTPA of Clinker (2 x 1.575 MTPA)
- 2.0 MTPA of Cement
- 50 MW (2 X 25 MW) Coal Based Captive Power Plant

The major raw material for manufacture of Cement is Limestone and is sourced from the Captive Limestone Mine.

2.0 PRESENT PROPOSAL

RCL now proposes 0.6 MTPA of limestone production from Kolimigundla Limestone Mine. The Mining lease area is spread over an area of 255.0 Ha and is located at Kolimigundla, Itikyala & Kalvatala Villages, Kolimigundla Mandal, Kurnool District, Andhra Pradesh.

The mining lease area consists of Pvt. Agricultural Un irrigated land of 238.2 Ha. Owned by RCL and 16.8 Ha. of Govt. land. Survey Numbers of Kolimigundla Limestone Mine are: **Survey Numbers of Kolimigundla village** 397/1, 397/2, 397/3, 398/1, 398/2, 400/1, 400/2, 400, 406/A, 406/B, 406/C, 407, 408/A, 408/B, 409/A, 409/B, 410/A, 410/B, 411, 412/1, 412/2, 412/3A, 412/3B, 412/3C, 413/1, 413/2, 414/A, 414/1B1, 414/B2A, 414/B2B, 415, 416/1, 416/2, 417, 418/1, 418/2, 419/1, 419/2, 420, 421, 422, 423, 424/1, 424/2, 436, 437/A1, 437/A2, 437/A3, 437/A4, 437/A4B, 437/B, 438/1, 438/2, 438/3, 438/4, 438/5, 439/A, and Survey numbers of **Itikyala village**- 1/1, 1/2, 1/3, 1/4A, 1/4B, 1/4C1, 1/4C2, 1/4D, 1/4E, 1/4F, 2, 3, 4, 5, 6/1, 6/2, 7, 8, 9, 11, 13, 14, 15/1, 15/2A, 15/2B, 27, 28, 29, 35, 36, 37, 38, 39/1, 39/2, 40, 41, 42, 43/1, 43/2, 43/3, 43/4A, 43/4B, 44/1, 44/2, and Survey numbers of **Kalvatala village**- 2/A, 2/B1, 2/B2, 3/A, 3/B, 4/A, 4/B1, 4/B2, 5/1,

5/2, 6, 7/A, 7/B, 8, 9, 10, 11, 14, 15, 16/1, 16/2, 17, 18, 65, 66, 67, 68, 70, 85, 86, 87, 88, 89, 90/2, 90/3, 91, 92, 93/1, 93/2, 94, 95, 98, 99, 100/1, 100/2, 100/3, 101, 102, 103, 111, 112, 113, 114, 115, 116, 117/1, 117/2A, 117/2B, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127.

3.0 DESCRIPTION OF ENVIRONMENT

As part of Environmental Impact Assessment study, baseline environmental monitoring was carried out for Post Monsoon Season, 2017 covering the months of October 17 to December'17.

METEOROLOGY

The predominant wind directions during this period were from ENE-E-ESE-SE sector accounting to about 49.64% of the total time and about 13.0% of the time the winds were under calm condition.

AIR ENVIRONMENT

Ambient air quality of the study area has been assessed through a network of eight ambient air quality locations.

The Ambient Air Quality monitored in the study area was found to be well within the limits of NAAQ standards prescribed for Industrial, Residential, Rural and Other Areas (24 Hrly).

Air Quality in the study area (*All the values are in* µg/m³)

Code No	Location Name	98th Percentile values			
		PM_{10}	$PM_{2.5}$	SO_2	NO2
A1	Mine Site	53.1	27.5	12.1	13.8
A2	Kalvatala Village	53.5	24.2	11.9	13.5
A3	Kotapadu village	49.8	22.6	11.5	13.2
A4	Nandipadu village	57.4	28.0	12.8	14.4
A5	Itikyala village	50.2	21.7	11.6	13.8
A6	Chintalayapalli village	54.5	27.8	12.1	13.3
A7	Kolimigundla village	51.0	23.5	12.4	13.7
A8	Mirjapuram village	55.6	25.4	10.7	12.9
NAAQ Standards for Industrial, Residential, Rural and Other Areas (24 Hrly)		**100**	**60**	**80**	**80**

Note: CO values are observed less than 1 ppm during study period.
Free silica was found to be nil in Particulate Matter (PM_{10})

NOISE ENVIRONMENT

Eight monitoring locations were selected to assess the noise levels in the study area. Noise levels recorded were found to be in the range of 50.6 – 54.7 dB (A) during daytime and in the range of 41.8 – 44.7 dB (A) during night time.

WATER ENVIRONMENT

Eight ground water and one surface water samples each were collected from the study area. The parameters thus analysed were compared with IS –10500. All the samples were found to be well within the limits.

SOIL ENVIRONMENT

Seven soil samples were collected within 10 km radial distance of the study area and were analyzed to study the soil quality.

BIOLOGICAL ENVIRONMENT

Based on the information obtained from the Forest Department, Black Buck which is Schedule – I specy is reported in the study area. During the ecological studies, Peafowl, Schedule – I specy is observed. To protect these Schedule – I Fauna, a conservation plan has been formulated with total fund of Rs 10 Lakhs.

4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 AIR ENVIRONMENT

The air borne particulate matter is the main air pollutant contributed by opencast mining.

The impact of the following operating industry mines are already reflecting in the baseline data collected during Post Monsoon, 2017.

- Ultratech Cement Plant and Mine
- Penna Cement Plant and Talaricheruvu mine & Korumanipalli mine

Hence for estimation of cumulative impact, the following capacities of proposed cement plant, power plant and other proposed four mines of RCL (including the subject mine) are considered in the cumulative study.

Proposed Cement Plant of RCL

- 3.15 MTPA of Clinker (2 x 1.575 MTPA)
- 2.0 MTPA of Cement
- 50 MW (2 X 25 MW) Coal Based Captive Power Plant

Proposed mines of RCL (TOR granted by MoEFCC)

- 0.6 MTPA Limestone production from Kolimigundla Limestone Mine
- 4.0 MTPA Limestone production from Chintalayapalle Limestone Mine
- 0.1 MTPA Limestone production from Kanakadripalle Limestone Mine
- 0.1 MTPA Limestone production from Nayanapalle Limestone Mine

Resultant ground level concentrations for the prevailing meteorological conditions using EPA Approved AERMOD mathematical model were estimated.

The overall Scenario with predicted ground level concentrations (with pollution control measures) over the baseline is shown below:

PREDICTED GROUND LEVEL CONCENTRATIONS AND OVERALL SCENARIO, $\mu g/m^3$

24-Hourly Concentrations	**Particulate Matter - 10 (PM_{10})**	**Particulate Matter - 2.5 ($PM_{2.5}$)**	**Sulphur Dioxide (SO_2)**	**Oxides Of Nitrogen (NOx)**
Baseline concentration, max	58.9	28.0	12.8	14.4
Predicted Groundlevel Concentration (Max)	11.64	1.35	2.36	14.26
Overall Scenario	**70.54 {100}**	**29.35 {60}**	**15.16{80}**	**28.66 {80}**

Note: Values in parenthesis are National Ambient Air Quality (NAAQ) standard limits specified for Industrial, Residential, Rural and other areas.

The environmental control measures to control the fugitive dust released are given below:

- Wet drilling to suppress the dust emission from the drill machine at its source by inbuilt water injection system.
- Regular water sprinkling on haulage road through fixed water sprinkler.
- Regular water sprinkling on blasted heaps with water tankers.
- 60 m^3/day of water will be used for dust suppression operations at mine.
- Use of sharp drill bits for drilling holes and arrangements for bit regrinding. Charging the holes by using optimum charge and using time delay detonator.
- Avoiding blasting during high windy periods, night times and temperature inversion periods.
- Regular grading of haul roads and service roads to clear accumulation of loose material.
- Avoiding overfilling of Dumpers and consequent spillage on the roads.
- The vehicles and machinery will be kept in well-maintained condition so that emissions are minimized.
- Afforestation for control of dust. To arrest the amount of airborne dust, plantation will be carried out within the mines.
- Operator cabins in all major HEMM equipment will be air conditioned to minimize dust exposure of the operators.

4.2 NOISE ENVIRONMENT

Noise produced at the mine will be due to movement of machinery, drilling, blasting, excavation, crushing & screening and transportation. The noise generated by the mining activity will be dissipated within a small zone around the mines. There will be no major impact of the mining activity on the vicinity. However, pronounced effect of above noise levels will be felt only near the active working area.

The impact of noise on the villages will be negligible. RCL will provide a greenbelt of 7.5 m barrier zone. Hence the impact on the mine vicinity due to noise levels will be minimal.

NOISE POLLUTION CONTROL MEASURES

RCL will develop greenbelt in an area of 13.0 ha within the mine. The following noise abatement measurements are proposed for control of noise:

- Proper and regular maintenance of vehicles, machinery and other equipment.
- Carrying out blasting only during day time and not on cloudy days.
- Limiting time exposure of workers to excessive noise.
- The noise generated by the machinery will be reduced by proper lubrication of the machinery and equipment.
- The workers employed are provided with protection equipment, earmuffs and ear-plugs, as a protection from the high noise level generated at the mine site wherever required.
- Noise levels are controlled by using optimum explosive charge, proper delay detonators and proper stemming to prevent blow out of holes.
- Speed of tippers in the mines area will be limited to moderate speed of 25 kmph to prevent undue noise from empty tippers.

4.3 WATER ENVIRONMENT

There are no perennial streams existing within the ML area, nor there are any springs in the lease. Seasonal nallas which are originating from the upstream of the mine are left beyond the active mine area and remain undisturbed and the mine working does not interfere with the flow pattern of the nalla.

During monsoon through direct precipitation rain water will be collected in the working pit which is used for plantation and dust suppression programmes. No water is being discharged in to any natural drainage systems surrounding the Lease boundary. All precautions will be taken for the surface run off into working pits. A garland drain will be constructed along the boundaries of pit as the mine progresses.

Ground water table occurs at a depth of 50m below ground level i.e. 230 m RL as observed and as per the gathered information in the nearby villages in summer is 45 m i.e. 221 m RL during the rainy season.

The workings are expected to reach 242 m RL as ultimate depth of mining, which is above the water table in the area. Hence there will

not be any impact on ground water regime of the lease area and its surroundings.

Total water requirement in the mining lease will be 90 m^3/day. This requirement will be initially met from Ground water and will be used for the purpose of domestic, dust suppression and afforestation in mines.

No wastewater is generated from the mining operations. The waste water generation is only from domestic usage. This waste water of 4.0 m^3/day is treated in Septic tank followed by soak pit.

RCL, as part of rainwater harvesting, collects the storm water for storage in the mine pit for use during lean season.

At the conceptual stage, 143.05 ha mined out area will be converted into water reservoir.

4.4 LAND ENVIRONMENT

No overburden waste will be generated from the mine. It is estimated that about 62,850 cu. m of top soil will be generated during the life of mine. The soil generated will be utilized for afforestation along Road safety zone. Of the total 255.0 Ha, about 143.05 Ha will be broken for production of limestone. Greenbelt will be developed in a barrier zone of 7.5 m width all along the mining lease boundary covering an area of 13.0 Ha. Infrastructure area 6.239Ha and Road area will be 0.361Ha.

Mined out area will be converted to water reservoir. Greenbelt will be developed in 13.0 Ha covering barrier zone of 7.5 m width all along the mining lease boundary.

4.5 CONTROL OF GROUND VIBRATIONS

During blasting, a small quantity of dust will be produced due to shattering and disintegration of strata. Due to shallow depth opencast working gases generated due to blasting are normally swept away by wind quite quickly.

All safety precautions specified by DGMS will be followed during blasting. Care will be taken to evacuate the mining area completely at the time of blasting operations. The blasting team will be equipped

with all personal safety and precautionary measures. The following safety measures will be taken while conducting the blasting operations.

- A blasting SIREN will be used at the time of blasting for audio signal.
- Before blasting and after blasting, red and green flags will be displayed as visual signals.
- Warning notice boards indicating the time of blasting and NOT TO TRESSPASS will be displayed prominently.

4.6 AFFORESTATION

Total area under greenbelt for the life of the mine will be 13.0 Ha. The area proposed to be covered in this plan period) is 2.0 hectares covering 3000 saplings. The afforestation would be done around 7.5 barrier zone.

4.7 SOCIO ECONOMIC ENVIRONMENT

The proposed mining lease area of 255.0 ha, out of which 238.19 Ha patta lands and 16.81 Ha of Govt. land.

Habitation has developed over the area along with some structures and public buildings. Adequate safe zone was provided as per the norms. At present mining operations will not disturb/relocate any village or need resettlement. No. adverse impact is anticipated. Thus no rehabilitation is involved.

Ramco Cements has allowed the previous land owners to carryout agricultural activities till the lands are put to use as a goodwill gesture and they have agreed to vacate the lands as and when the factory comes up.

Balance land will be acquired based on mutual agreement with land owners.

No public buildings, places, monuments etc., exist within the lease area or in the vicinity. The mining operations do not disturb / relocate any village or need resettlement. No adverse impact is anticipated.

5.0 ENVIRONMENTAL MONITORING PROGRAMME

RCL will monitor the environmental parameters as per the guidelines of CPCB, State Pollution Control Board, MoEFCC, IBM and DGMS.

6.0 BUDGETS FOR IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT PLAN

RCL has budgeted an amount of Rs. 11.0 lakhs for implementation of Environmental Monitoring Program with Recurring Cost of about Rs. 18.0 lakhs per annum.

7.0 PROJECT BENEFITS

7.1 EMPLOYMENT POTENTIAL

Total Manpower of 12 persons will be deployed for the production of 0.6 million TPA of limestone.

About 100 persons get benefited by indirect employment in the form of contractual jobs, business opportunities, service facilities etc. This will enhance the economic status.

Apart from the jobs, the company provided medical and educational facilities to the employees which can also be availed by the people around the mine. Adequate recreational facilities for the staff of the company and the local people are being created.

7.2 SOCIAL WELFARE MEASURES

CORPORATE ENVIRONMENTAL RESPONSIBILITY (CER)

The capital cost of proposed project is Rs. 6.73 Crores. RCL has earmarked an amount of Rs. 13.50 Lakhs towards the Corporate Environment Responsibility (CER) in accordance to the **MoEFCC's office Memorandum # F.No. 22-65/2017-IA.III dated 01.05.2018**.

BUDGET TOWARDS CER ALONG WITH ACTIVITIES

S.No	DESCRIPTION	Budget in Rs. Lakhs
1	Swachh Bharath	2.0
2	Education & Sports	1.0
3	Women Welfare	1.5
4	Roads and other infrastructures	2.5
5	Drinking water	1.0
6	Skill development	2.0
7	Health Care	2.0
8	Veterinary	1.0
9	Other	0.5
	Total	**13.50**

CONCLUSION

RCL will implement the environment management plan and will take up various socio economic development activities to have the positive impact on the surroundings.