EIA SUMMARY

FOR

NEW CLINKERISATION LINE OF

8000 TPD CAPACITY

FOR

M/S AMBUJA CEMENT EASTERN LTD.

RAWAN BHATAPARA (C.G.)

1. PROJECT DESCRIPTION:

Ambuja Cement Eastern Limited's (ACEL) plant at Bhatapara is around 80 km from Raipur (originally set up by the Modi Cement Ltd, and later on acquired by Ambuja Group in 1997) was commissioned in early 1986. The plant has an inline Calciner kiln, 4.4 m dia. X 65 m long with a single string 4 stage preheater. The plant is presently producing about 3950 TPD clinker.

Looking to the overall general growth in the demand for Cement in the country and Eastern India in particular, Ambuja Cement Eastern Ltd felt that in order to not only keep pace with the demand, but for increasing it's market share, it proposes a second line of clinkerization at its existing plant at Bhatapara. The clinker production capacity of the proposed new Line is 2.72 million tpa (8000tpd).

The proposed new cement line-2 will be installed in the existing lands of the company. The new line will be installed parallel to the existing line.
The general terrain is plain with an altitude of 258 metres above mean sea level. There are no major river in the 10km radius of the Plant area.

The most modern state-of-art technology, deploying dry process kiln equipped with suspension preheater and pre-calciner, will be adopted for the Expansion Plant.

In order to abate pollution levels from the proposed new line Glass Bag House will be provided in the Raw mill/ Kiln section .Sophisticated Pulse jet Bag Filters will also be provided in various process systems, such as Limestone Hopper, Coal Crusher, Raw Meal Hopper, Cement Transport, Cement Silos, Cement Packer, etc. Provision of above equipments will ensure that the SPM emissions will be within prescribed standards, as per statutes.

The main raw material Limestone will be procured from company's own mines, less than 1.5km away. Coal will be used as fuel in the kiln.

Water requirement to the tune of about 977 m^3 /day for Cement line-2, for cooling and process will be sourced from artificial reservoir (of about 5 to 7 lac m3) which has been made in the Mines. In the existing Plant there are 4 numbers of bore wells through which water can be drawn as and when required.

The average power demand of the line 2 is estimated at 26 MW with a peak power requirement of 29 MW. The average power demand of the line 1 is estimated at 20 MW with a peak power requirement of 23 MW. The total peak load of Line 1 and proposed Line 2 will be 52 MW . The total power required will be taken from the Plant's existing CPP of 15 MW capacity and proposed CPP of 1x15 MW and 1x33 MW capacity plant. The existing and proposed CPP is based on coal taken from South Eastern collieries Ltd.

2. ENVIRONMENT DESCRIPTION:

The climate is generally dry with extreme summers and pleasant winters. The ambient temperature ranges to about 50 degree celsius in Summer to a minimum of about 9 degrees in winter.

The existing plant of 3950 TPD occupies 238.97 Hectares area in the village Rawan. This area is already been acquired by the company. The new cement kiln line-2 will be installed parallel to the existing line-1.Where the land is already available. Hence there is no new procurement of land. The core zone area does not contain any forest area.

The demographic profile of the Buffer zone situated within 10 kms from the centre of the core zone contains 61 number of villages (including one urban Ariyalur Taluk) with a total population of 199715 comprising 49.79% of male

and 50.21% of female. The Scheduled Caste population is of 19.09%, while that of scheduled tribe is 13.96%. The total literacy in the area is 53.46 constituting 61.60% for male and 38.403% for female.

The environmental quality of the core and Buffer zone have been studied in respect of Ambient air quality, Micro-meteorology, Stack emission from existing 3950 TPD plant, Dust Levels, water quality, noise levels, soil quality, flora and fauna status etc.

The existing ambient air quality study shows this following range for various parameters. These values are within permissible standards prescribed.

	98th PERCENTILE VALUES IN mcg/m^3	
CORE ZONE	(ACELA1)	(ACELA2)
SPM	182	137
RSPM	115	83
SO_2	12	9
NOx	17	19
CO	BDL	BDL

BUFFER ZONE	(ACELA3)	(ACELA4)	(ACELA5)	(ACELA6)
SPM	110	108	109	110
RSPM	76	74	80	82
SO_2	11	11	11	12
NOx	16	17	18	16
CO	BDL	BDL	BDL	BDL

NOTE :

DCA - Sampling location code

BDL - Below Detectable Limit

The physico-chemical parameters of water quality are found to be within prescribed limits.

The noise levels in the area range at present between 35 to 60 dB (A).

The physico-chemical characteristics of the soil sample shows that they are essentially loamy soils suitable for green belt development.

3. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES:

IMPACT: Impact on economic, employment and socio-cultural fronts will be positive due to additional income generation, better employment prospects and due to communal amity resulting from the expanded project. About 100 persons will be employed in the project on a direct basis and about 150 persons will get indirect employment opportunity due to the project.

As there are no forest lands in the Core zone, there will be no direct impact on forest lands. However, as the predicted pollution levels from the proposed plant together with the background levels will be well within environmentally sustainable and prescribed standard limits, there will be practically no impact on these forest areas in the Buffer zone due to the plant operations.

Floral and faunistic composition of the area will be improved by increase in bio-diversity due to the elaborate green belt development proposed in the Core zone. The soil quality will improve due to this especially because there will be no process effluent discharge on land.

Even though the proposed expanded plant will slightly affect the existing environmental status due to increases in levels of air pollutants, noise levels, etc., the changes will be within environmentally sustainable prescribed limits due to installation of control equipments like Glass Bag House and Bag Filters at all

dust-prone process systems and also elaborate green belt development in the peripheral area of Core zone. Besides, development of green belt around the Core zone will help abate these levels apart from improving the aesthetic and visual status of the area.

The predicted increase in average 8 hourly SPM levels due to the expanded plant will be only 23.60 $\mu g/m^3$ at a distance of 707.10 m from the Core zone, with the addition of maximum background levels in the Buffer zone, the maximum SPM value will be only 117 $\mu g / m^3$, which will be within prescribed limits.

As there will be no process effluent from the plant, the impact on water quality in the area will be minimal. The sewage from the production plant and staff housing estate shall be mechanically and biologically treated to a quality allowing for its reuse for gardening purposes.

For the plant anaerobic digestion pits has been constructed, and for housing colony a sewage treatment plant has been constructed. Treated sewage water is used for gardening purpose.

With adoption of various control measures for noise reduction, impact on noise levels is not envisaged to be adverse.

MITIGATION: For air pollution control, control devices such as Glass Bag House and pulse bag filters will be installed at all dust prone process systems in the plant. Besides, massive green belt development will be undertaken along periphery of the company premises to arrest propagations of particulate and gaseous discharges.

Water quality in the area will not be affected, as there will be no process effluents. The canteen waste and toilet wash will be treated in aeration tanks and settling ponds before being used for gardening purposes.

With adoption of control measures such as well scheduled preventive maintenance programmes, noise barriers in the form of elaborate green belt development, noise proof acoustic designs of operator control cabins, provision of ear muffs to workers and staff at noise prone areas, etc. noise levels will be kept within prescribed limits even after expansion.

As there will be no process effluent discharge on land, the soil quality will not be affected. The proposed green belt development in the Core zone area will improve the bio-diversity in the area and improve the soil quality further.

4. ENVIRONMENT MONITORING PROGRAMME:

A well equipped Environment cell will look after the monitoring job. The parameters will be analysed/ monitored as per the norms.

Air Monitoring: A network for Ambient Air monitoring will be developed for the proposed plant and Respirable dust sampler will be used to monitor the levels.

For particulate monitoring, stack monitoring will be done as per the norms.

Automatic weather monitoring equipment with facility to monitor parameters like wind speed, wind direction, ambient temperature, relative humidity.

Water Quality Monitoring: Water quality monitoring at various influent and effluent outlet in the plant will be done regularly to find out the quality of water as prescribed by DOE and Chattisgarh State Pollution Control Board.

Noise Monitoring: Noise monitoring would be undertaken to assess the efficiency of various noise control measures followed to reduce noise levels.

Total outlay for environmental control and pollution abatement will be Rs 11.35 crores as capital cost towards various pollution abating control equipments.

Towards annual recurring cost for environmental control about 20% of the capital outlay, will be provided, which will be about Rs. 227 lakhs per annum.

5. ADDITIONAL STUDIES:

During the preparation of EIA considerable socio economic data were collected from different Government and Non-Governmental agencies. The socio economic data like, demographic profile, economic scenario, literacy level, occupational structure, land use pattern etc, were collected from the core and buffer zone by public consultation. The social impact of this project is positive and some of the impact are as follows:

- During construction period about 100 employees will be benefited directly.
- The possible interaction of different socio-cultural segments of population will improve further community development in the area.

Resettlement and Rehabilitation programme is not applicable in our case.

6. PROJECT BENEFITS:

- About 100 persons will be employed in the project on a direct basis and about 150 persons will get indirect employment opportunity due to the project.
- Floral and faunistic composition of the area will be improved by increase in bio-diversity due to the elaborate green belt development proposed in the Core zone.
- Aesthetic and visual status of the area will improve.
- Due to the increased expansion facilities, large income will accrue to the State and Central Ex-chequers by way of Sales tax, Central Sales tax, Central Excise, Income tax etc.

7. ENVIRONMENT MANAGEMENT PLAN:

The Impact Assessments for various impacts arising out of the Expansion Programme, has brought out that there will not be any adverse impact in most of the cases, on account of various pollution control measures, energy efficient technology and sophisticated processes etc, being adopted for the proposed process. However, to reduce the impacts further, it is imperative to device proper control systems in this direction.

SOCIO-ECONOMIC FACTORS: Job opportunity will increase, Financial receipts to the state and central exchequers will also improve, Inter communal harmony will improve in the area.

AMBIENT AIR QUALITY: ESP and Bag filters will be installed to trap the emission and green belt will be developed to control fugitive emission if any.

WATER QUALITY: As there will be no process effluent discharge from the expansion plant, the prevailing water quality in the area will not be affected.

NOISE LEVELS: The present noise levels in the area are within limits prescribed. As the expanded plant will be very sophisticated and having automatic process control instrumentation system etc, there will be no adverse impact on noise levels in the area.

Ear muffs or plugs would be provided.

Noise barriers will be provided in the form of trees in green belt area.

Control cabins, would be made sound proof.

SOLID WASTE :

There is no solid waste generated from cement plant.

WATER CONSUMPTION:

Water consumption (M^3/Day) in the existing set up:

Domestic	325.0
Process	1534.0
Dust Suppression	20.0

Canteen	15.0
Sanitation	10.0
Plantation	16.0

Water consumption (M^3/Day): Proposed Line -2

DM water consumption	37.0
Raw water consumption	
1. GCT	-
2. Raw Mill	190.0
3. Cement Mill 1	30.0
4. Cement Mill 2	72.0
Miscellaneous	
Coal Mill	144.0
Compressor House	240.0
Air Conditioning	144.0
Packing plant	120.0
Total	977.0

The domestic effluent generated is treated in Sewage Treatment Plant and the treated effluent is totally used in horticulture purpose. The sludge generated from sewage treatment plant is used as manure in horticulture purpose.