

**FORM – V**  
**(See rule 14)**

**Environmental statement for the financial year ending the 31<sup>st</sup> March 2009**

**PART – A**

1.	Name and address of the Owner/Occupier of the Industry, operation of the process.	:	<b>BINANI CEMENT LIMITED, (NEW CEMENT PLANT) BINANIGRAM, PINDWARA, DIST. SIROHI, RAJASTHAN, PIN – 307 025</b>
2.	Industry category	:	<b>RED, LARGE</b>
3.	Production Capacity	:	<b>2.0 Mio.TPA (CLINKER MANUFACTURING CAPACITY)</b>
4.	Year of establishment	:	<b>2007</b>
5.	Date of the last environmental statement submitted	:	<b>31.07.2008</b>

**PART – B**

**Water and Raw Material Consumption**

**(I) Water consumption in m3/day.**

Process	:	<b>Nil</b>
Cooling	:	<b>643.2 (Run Days considered as 341)</b>
Domestic	:	<b>46.97 (Run Days considered as 365)</b>

Name of products	Process Water consumption per unit of product output	
	During the previous financial year	During the current financial year
	(1)	(2)
Portland Cement (OPC + PPC)	0.17375 KL/ Ton of cement	0.09449 KL/ Ton of cement

**(II) Raw Material consumption**

S. No.	Name of raw material	Name of products	Consumption of raw material per unit output (Per Tonne)	
			During the previous financial year	During the current financial year
1.	Lime Stone	Cement (OPC/PPC)	1.4274 MT/MT of cement	1.4006 MT/MT of cement
2.	Coal		0.1128 MT/MT of cement	0.1216 MT/MT of cement
3.	Gypsum		0.05876 MT/MT of cement	0.06395 MT/MT of cement
4.	Silica sand		0.00293 MT/MT of Cement	0.00190 MT/MT of cement
6.	Iron Ore		0.00036 MT/MT of cement	0.00095 MT/MT of cement

## PART – C

**Pollution discharged to environment/unit of output generated (Parameter as specified in the consent issued)**

S. No	Pollutants	Concentration of Pollutants in discharge			Percentage of variation from prescribed standards with reason.
		Parameter	Prescribed Std. (mg/Ltr.)	Observed Value (mg/Ltr.)	
a.	Water (Industrial)	Not applicable since no waste water is generated from the process			N. A.
	Water (Domestic)	<b>Domestic sewage treatment plant in colony</b> (Common for Cement Plant, CPP & Mines) (Avg. values for the year 08-09)			No variation. All parameters are within the prescribed limits stipulated by concerned regulatory authorities.
		Parameter	Prescribed Std. (mg/Ltr.)	Observed Value (mg/Ltr.)	
		pH	5.5 – 9.0	7.61	
		TSS	100	59.41	
		BOD	30	17.14	
		COD	250	95.41	
Oil & Grease	10	4.93			
b.	Air (Stack emission) Particulate matter	Parameter	Prescribed Std. (mg/Nm3.)	Observed Value (mg/Nm3.)	No variation. All parameters are within the prescribed limits stipulated by concerned regulatory authorities.
		Kiln/Raw Mill	50	24.48	
		Coal Mill	50	29.33	
		Cooler ESP	50	24.99	
		Cement Mill # 3	50	25.22	

## PART - D

### Hazardous Wastes

(As specified under Hazardous Wastes (Management and Handling) Rules, 2003) & recently amended as Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2008

S. No.	Hazardous Waste	Total quantity (Kg.)	
		During the previous financial year	During the current financial year
a.	From Process		
(i)	Used Oil & Grease (Kg)	Nil	9817
(ii)	CETP Sludge procured from Pali (MT)	Nil	Nil
b.	From pollution control facility	No any	No any

## PART – E

### Solid Waste

Sl. No.	Solid Waste	Total quantity (Kg.)	
		During the previous financial year	During the current financial year
a.	From Process	Nil	Nil
b.	From pollution control facility	Nil	Nil
c.	Quantity recycled or reutilized	Nil	Nil

**PART – F**

Please specify the characterization (in terms of composition & quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Description of Haz. waste	Qty. of waste generated during the year (Ltr.)	Discharged from	Accumulated quantity (as on 01.01.2009)	Disposal Method	Equipment / Facility Used
<b>Used/ Spent Oil &amp; Grease</b>	21095* (Ltr.)	19717* (Ltr.)	5067 (Ltr.)	Burnt in cement Kiln	Mixed with coal & fired in Kiln
<b>CETP Sludge</b> (procured from Pali)	-	-	-	-	-

\* includes the quantity of waste generated from the old cement plant, CPP & Mines

**(i) Other Solid Waste** (generated from the entire premises):

Description of waste	Qty. of waste generated during the year (MT)	Disposed (MT)	Accumulated quantity (as on 01.04.09)	Disposal Method	Equipment / Facility Used
<b>Screen Reject (Mines)</b>	413619	413619**	0	*	Earmarked dump yards
<b>Fly Ash (purchased)</b>	323973	333223	0	Used in PPC production	Fly Ash feeding system & Cement Mill
<b>Fly Ash (from CPP)</b>	33125.78	33125.78	0	Used in PPC production	Fly Ash feeding system & Cement Mill
<b>Bottom Ash (from CPP)</b>	2780.04	2780.04	0		
<b>STP Sludge</b>	10.0	10.0	0	Composting	Used in plantation
<b>Household (Kitchen) waste</b>	182.50	182.50	0	Dumped in pits for Composting	Dumpsite maintained by local municipality
<b>Paper Waste</b>	10.0	10.0	0	Used in Kiln as fuel	Kiln
<b>Metal Scrap</b>	1121.02	1121.02	0	Sold to recyclers	-
<b>Rubber Scrap</b>	16.04	16.04	0	Sold to recyclers	-
<b>Torn PP Bags &amp; other misc. Plastic Waste</b>	57.43	57.43	0	Sold to Mfr./ authorized recyclers	-
<b>Refractory Waste</b>	871.90	871.90	0	Sold to authorized recyclers	-
<b>E-waste (Old computers, printers, circuit boards etc.)</b>	25 (Nos)	25 (Nos)	0	Buy Back system	-
<b>Spent Batteries</b>	95 (Nos.)	95 (Nos.)	0	Buy Back system	-
<b>Filter bags scrap</b>	1400 (Nos)	1400 (Nos)	0	Sold thru tender (for recycling)	-
<b>Cotton waste</b>	6.38	6.38	0	Used in Kiln as fuel	Kiln
<b>Wooden Scrap</b>	69.68	69.68	0	Sold thru Tender (for recycling /reuse)	-

\*\*Screen reject is scientifically stacked in benches (in Mines) & plantation is done to prevent erosion.

## PART – G

### Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

The plant is equipped with state-of-the-art Air Pollution Control devices such as Reverse Air Bag House, ESP, Jet Pulse Filters etc designed to control the emission (SPM) level below 50 mg/Nm<sup>3</sup> from any of the stacks installed at our plant.

In addition, we are successfully managing the ambient SPM level to below the prescribed levels by way of putting up Jet Pulse Filters at each of the transfer points, fully mechanized system for Fly Ash handling, covered belt conveyors, water sprinklers of raw material & coal conveyors and mostly paved surfaces for vehicular movement inside the plant premises.

All these systems have proved to be very effective in arresting and putting back the recovered material into the production line thus preventing the precious raw material, fuel, intermediate & finished products from getting lost in the atmosphere.

Additionally, over the years, the company has undertaken various energy efficiency improvement measures & process modifications which helped to significantly reduce the overall energy consumption to enable us to achieve our ultimate goal of GHG emission reduction and positive contribution towards reversing the effects of Climate Change.

Thus, the pollution abatement & other energy conservation practices adopted by us save precious raw material/ product and greatly help in conserving valuable natural resources.

## PART – H

### Additional measures/ investment proposal for environmental protection including abatement of pollution / prevention of pollution.

- (a) Use of 5% of the alternative fuel in both the kilns by replacing fossil fuels (coal/ lignite)
- (b) Modification and performance improvement of colony STP
- (c) Plantation of 5000 nos. of tree saplings in 09-10.
- (d) Complete refurbishing of the first field of Cooler -1 ESP to further improve its efficiency / performance.
- (e) Construction of 2 more water harvesting structures in 09-10.
- (f) Replacement of cooling water pumps with energy efficient pumps.
- (g) Replacement of 70W street lights with CFL to reduce energy consumption and increase the illumination level.
- (h) Installation of Power Boss in the motors with variable load in belt conveyors of raw material feeding for conservation of energy.
- (i) Installation of power saving schemes in street lights in colony after midnight.
- (j) Installation of High Tension capacitors in the main incomer and load centre for improving the power factor.
- (k) Installation of vacuum cleaning system at packing plant.

## PART – I

### Any other particulars for improving the quality of the environment.

Details of steps taken for improvement of environment during 08-09

#### **Environment Management System improvement**

1. Recent review of Management policy to exert greater emphasis on conservation of natural resources in particular water and non renewable energy sources.
2. Periodical review of EMS including compliance of environmental laws through periodic Management Review & Quality forums
3. Quarterly EHS inspection of all the sections including the Contractors' Premises throughout the plant premises.
4. Awareness promotion through various environmental competitions, workshops, presentations etc. on world environment day, Earth Day, Bio-diversity Day, Ozone Layer Conservation Day etc.

#### **(i) AIR**

##### **(A) Improvement in Ambient Air Quality through effective control on fugitive dust emission**

- (a) **Concrete paving in 2000 M2** plant area in Unit-I & Unit-II resulting in effective control on air born fugitive dust due to vehicular movement.
- (b) Replacement of **2388 Nos. of filter bags** in bag filters (JPF) to effectively control the dust emission during material transport to improve the air quality inside the plant premises.

##### **(B) Reduction in point source emission**

- (a) Installation of state-of-the-art Dry Fly Ash feeding system to facilitate direct unloading of open fly ash trucks as well as closed tankers, thus remarkably minimizing fugitive emission caused during fly ash handling.
- (b) Replacement of existing hemi-centric valves with improved dome valves to **avoid ESP tripping** due to high hopper level resulting in reduction in stack emission from CPP-1 Boiler stack.

#### **(ii) WATER**

##### **(a) Reduction in water consumption /tonne of cement**

Specific Water consumption for last 3 years:

<b>Consumption</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
<b>Water (M3 per ton of cement)</b>	<b>0.13</b>	<b>0.19</b>	<b>0.12</b>

##### **(b) Augmenting the groundwater resources**

Constructed 6 more water harvesting structures (Check dams) in Amlu Mines during the year 08-09 thus increasing the water harvesting potential to 1.61 MCM @ an annual average rainfall of 705 mm.

##### **(c) Sewage Treatment Plant**

Modification/ renovation of colony STP to further improve its performance and efficiency.

### **(iii) Green Belt development**

**5010 tree saplings** were planted in Plant, Colony & mines during **08-09** covering an area of around 5 hectares. Thus the total nos. of surviving plants at the end of 08-09 is **116726**.

In addition to above, 3 new **garden development** projects were also undertaken at the following sites:

1. Near old project office
2. Near shopping centre & new club building in colony
3. Complete renovation of the Municipal Park at the tehsil H.Q.

Company has planned to plant 5000 tree saplings during the year 09-10.

### **(iv) Reduction in Noise Level**

Some of the major initiatives taken to reduce the noise level are as under:

1. Installation of **new generation turbine** with covered components in CPP-III. The average noise level of this turbine is 15 dB less than that of conventional turbines.
2. Fixing of **rubber pads** beneath CM-3 liners resulted in average 3 dB noise reduction.

### **(v) Increase in industrial waste utilization**

#### **▪ Raw material**

1. Continue to replace **5%** of mineral gypsum in cement grinding with industrial **byproduct POP** (Plaster of Paris) to add to conservation of mineral gypsum.
2. Optimum utilization of sub-grade limestone to further reduce the consumption of additives from **0.30% (07-08 level) to 0.20%** in raw mix preparation.
3. **8151 tons of bed material** generated from the CPPs was suitably used in cement manufacturing process.

#### **▪ Fuel**

1. In addition to the existing 5% usage of agro waste in old cement kiln, **additional 5%** consumption of **agro waste** has also been started in **Kiln-2** during the year 08-09.
2. About **16500 tons of high carbon fly ash** with **15% carbon** content generated from the old CPP was used in cement pyro-processing.
3. **1730 tons of CETP sludge** procured from Pali & **21474 Kgs. of spent oil/ grease** generated in-house were utilized (burnt) in cement kiln to recover their heat content.

#### **▪ Blending material**

In the year 2008-09, 144480 tons of extra PPC was produced by **utilizing 36120 tons (ADB) of Pond Ash** resulting into savings of **173376 kWh** electrical energy & **3566.34 tons of CO<sub>2</sub>** (GHG emission). A separate system was also installed for feeding Pond Ash.

### Other significant energy & environment saving measures in 08-09:

Project Description	Electricity (Lakhs (kWh))	Total savings in (Rs. Lakhs)	Investment incurred on the project (Rs. Lakhs)
Replacement of 700 Nos. of ordinary incandescent lamps with CFL	3.16	15.80	3.80
Installation of solar panels in Guest House & Canteen	0.438	1.74	1.60
Cement mill slide shoe lubrication pumps rewinded motors replaced with energy efficient motors	0.275	1.38	1.20
Optimized Bag House transport system with RA fan in both the units	0.351	1.76	Nil
Installed separate Alternate fuel conveying system to facilitate feeding of A/F in both the Kilns	-	127.80	80
Modification in wagon loading system	Rake loading time reduced by 3 hrs. causing proportionate reduction in sp. Power consumption of packers		83
Improved HP heater efficiency in CPP-II by replacing the 1" line with 3" line for full flow of HP heater condensate to deaerator	Heat cycle efficiency of TG improved		0.24
Provided charcoal feeding arrangement for CPP-II boiler light up	Reduction in diesel consumption from 11-12 KL to 7-8 KL per light up		0.012