

**FORM – V**  
(See rule 14)

**Environmental statement for the financial year ending the 31<sup>st</sup> March 2012**

**PART – A**

1.	Name and address of the Owner/Occupier of the Industry, operation of the process.	:	<b>BINANI CEMENT LIMITED, THERMAL POWER PLANT (NEW – 25 MW) P. O. - BINANIGRAM, TEHSIL - PINDWARA, DIST. SIROHI, RAJASTHAN, PIN – 307 031</b>
2.	Industry category	:	<b>RED, LARGE</b>
3.	Production Capacity	:	<b>25 MW</b>
4.	Year of establishment	:	<b>31<sup>ST</sup> MARCH 2008</b>
5.	Date of the last environmental statement submitted	:	<b>14.07.2011</b>

**PART – B**

**Water and Raw Material Consumption**

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

Process	:	<b>Nil</b>
Cooling	:	<b>86.5</b>
Domestic	:	<b>2.80</b>

Name of products	Process Water consumption* per unit of product output	
	During the previous financial year	During the current financial year
	(1)	(2)
Electric Power	<b>0.1969 KL/MWH</b>	<b>0.2228 KL/MWH</b>

**\*Reported quantity includes water consumed in cooling as well.**

**(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.	Coal & Lignite as fuel	Electric Power	<b>0.5427 MT/MWH</b>	<b>0.4592 MT/MWH</b>

**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.		
a.	Water (Industrial)	<b>Cooling Tower Blow Down</b> (Average Values for the year 2011-12)	No variation. All parameters are within the prescribed limits stipulated by concerned regulatory authorities.		
		<b>Parameter</b>		<b>Prescribed Std.</b> (mg/Ltr.)	<b>Observed Value</b> (mg/Ltr.)
		Free available Chlorine		0.5	BDL
		Zinc		1.0	0.05
		Chromium (Total)		0.2	0.03
		Phosphate		5.0	0.43
		<b>Boiler Blow Down</b> (Average Values for the year 2011-12)			
		<b>Parameter</b>		<b>Prescribed Std.</b> (mg/Ltr.)	<b>Observed Value</b> (mg/Ltr.)
		Suspended Solids		100	18.18
		Oil & Grease		20	2.33
	Copper as Cu	1.0	0.01		
	Iron as Fe	1.0	0.04		
	Water (Domestic)	<b>Domestic sewage treatment plant in colony</b> (Common for Cement Plant, CPP & Mines) (Average Values for the year 2011-12)	No variation. All parameters are within the prescribed limits stipulated by concerned regulatory authorities.		
		<b>Parameter</b>			<b>Prescribed Std.</b> (mg/Ltr.)
pH		5.5 – 9.0			7.45
TSS		100			25.92
BOD		30			9.92
COD		250			29.31
Oil & Grease		10			5.04
b.	Air (Stack emission) Particulate matter	<b>SPM emission from Boiler Stack</b> (Average Value for the year 2010-11)	No variation. All parameters are within the prescribed limits stipulated by concerned regulatory authorities.		
		<b>Stack</b>		<b>Prescribed Standard</b> (mg/Nm3.)	<b>Observed Value</b> (mg/Nm3.)
		Boiler ( 25 MW )		100	26.88

## 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		
	Used Oil & Grease (Kg)	24808*	56280*
b.	From pollution control facility	No any	No any

\* Total quantity generated from all the components (Cement Plant, CPPs & Mines)

## PART – E

### Solid Waste

Sl. No.	Solid Waste	Total quantity	
		During the previous financial year	During the current financial year
a.	From Process (Bottom Ash)	1538.28 MT	1513.58 MT
b.	From pollution control facility (Fly Ash)	12800.33 MT	17213.98 MT
c.	Quantity recycled or reutilized (Fly Ash including Bottom Ash)	14338.61 MT	18727.55 MT

Note: Entire fly ash (incl. bottom ash) generated in CPP, was utilized in cement manufacturing process.

## 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.

(i) Hazardous Waste (generated from the entire premises):

Description of Haz. waste	Qty. of waste generated during the year (Ltr.)	Discharged from	Disposal Method	Equipment / Facility Used
Used/ Spent Oil & Grease	56280* (Ltr.)	56280* (Ltr.)	Sold to authorized recyclers	Not Applicable

\* Total quantity generated from all the components (Cement Plant, CPPs & Mines)

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

Description of waste	Qty. of waste generated during the year (MT)	Disposed (MT)	Disposal Method	Equipment / Facility Used
Screen Reject (Mines)	467924	467924	*	Earmarked dump yards
Fly Ash (purchased)	223060.7	223060.7	Used in PPC production	Fly Ash feeding system & Cement Mill
Fly Ash (from CPP)	41230.14	41230.14	Used in PPC production	Fly Ash feeding system & Cement Mill
Bottom Ash (from CPP)	3057.83	3057.83		
STP Sludge	13	13	Composting	Used in plantation
Household (Kitchen) waste	193	193	Dumped in pits for Composting	Dumpsite maintained by local municipality
Metal Scrap	804.29	804.29	Sold to recyclers	-
Rubber Scrap	32.56	32.56	Sold to recyclers	-
Torn PP Bags & other misc. lastic Waste	78.42	78.42	Sold to Mfr./ authorized recyclers	-
Refractory Waste	1205.99	1205.99	Sold to authorized recyclers	-
E-waste (Old computers, printers, circuit boards etc.)	508 (No.)	508 (No.)	Buy Back system	-
Spent Batteries	240 (No.)	240 (No.)	Buy Back system	-
Filter bags scrap	1782 (No.)	1782 (No.)	Sold thru tender (for recycling)	-
Wooden Scrap	58.38	58.38	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 ESP & Jet Pulse Filters designed to control the emission (SPM) level below 50 mg/Nm<sup>3</sup> through the stack attached to the boiler.

In addition, we are successfully managing the ambient SPM level 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.

#### Cement Plant

1. Installation of **energy efficient burner** in Kiln 1.
2. Installation of **Slip Power Recovery System (SPRS)** in both the Preheater fans in Kiln-2.
3. Installation of **automatic clinker loading and coal unloading system.**
4. Provision of energy saving **LED lights** and **energy saver starters**
5. Installation of **Continuous Emission Monitoring Station (CEMS)** in both the kiln stacks
6. Refurbishment of Cooler-1 ESP for efficiency improvement.
7. Implementation of ISO 50001 (Energy Management System)

#### Thermal Power Plant

1. Installation of **Over Bed firing system** at AFBC boiler for efficient utilization of Alternative Fuel.
2. Installation of **Sonic Soot Blower** at super heater in CPP 2&3 for energy efficiency improvement.

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

### Details of steps taken for improvement of environment during 2011-12

#### Environment Management System improvement

1. Periodical review of EMS including compliance of environmental laws through periodic audits and Management Reviews.
2. Quarterly EHS inspection of all the sections including the Contractors' Premises throughout the plant premises.
3. Awareness promotion through various environmental competitions, workshops, presentations etc. on world environment day, Earth Day, Bio-diversity Day, Ozone Day etc.

#### (i) AIR

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

1. **Concrete paving/ road repairing in 14000 M<sup>2</sup>** area in plant/ colony resulting in effective control on air born fugitive dust due to vehicular movement.
2. Replacement of **1782 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

1. Installation of 25 Nos. of digital DP indicators in major Bag Filters (JPFs).
2. Modification in CM-1 & CM-2 Sepax Bag Filter ducting for efficiency improvement.

#### (ii) WATER

##### (a) Reduction in specific water consumption (M<sup>3</sup>/t cement)

Specific Water consumption (both cement plants) for last 3 years:

Consumption	2009-10	2010-11	2011-12
Water (M <sup>3</sup> per ton of cement)	0.096	0.091	0.088

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

During 2011-12, the company augmented the groundwater resources by adding 2 more water harvesting bodies in Amla Mine (southern part towards Malap) to further strengthen our water conservation programme: With the construction of these structures, the groundwater recharge potential has now increased from 2.0 MCM to 2.10 @ 706 mm of average rainfall.

##### (iii) Green Belt development

**10513 saplings** (8158 trees and 2355 shrubs) were planted in Plant, Colony & mines during 2011-12 covering an area of around 16.88 hectares.

Total number of saplings planted so far = **148296 Nos.**

**Total area covered under greenbelt = 210.54 Hectare**

**(iv) Increase in industrial waste utilization**

• **Raw material & fuel**

1. Replaced **5.26%** 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 conserve Silica Sand and Iron Ore.
3. **41230 tons of Fly Ash and 3058 tons of bed material** generated from the CPPs suitably used in cement manufacturing process.

• **Other measures**

Installation of **continuous online Sox & NOx monitoring device** in CPP stack.

**Significant Energy & Environment saving measures implemented in 2011-12:**

#	Title of Energy Saving project implemented	Annual Electrical Savings Achieved (kWh)
1	VFD installed in RM2 Sec. Crusher	108000
2	VFD installed at 644 FN1 (Packer No.4 JPF)	65700
3	Cement mill-3 Compressed air line disconnected from Rall Mill/ Kiln Compressors and connected to Cement mill-4 compressor	219000
4	Cement mill-1 &2 compressed air line disconnected from packing plant and connected to cement mill-4 compressors	657000
5	Optimization of Cement mill-4 vent bag house by DP based cleaning system	33333
6	GRR with Vapromatic LRS installed in cement mill-4 O-sepa Fan	160000
7	Replacement of 2 nos fine coal blower motor with low rating motors	164771
8	LED based Street Lights in Colony in place of 70 W HPSV.	16863
9	Modified water spray of cooler hydraulic room P&V system in kiln-2	41616
10	Replacement of LS Crusher Apron conveyor DC motor with AC Motor	17335
11	Replaced ACC fan blades with aerodynamic high efficiency blades (4 Nos) in CPP-2 to reduce auxiliary power consumption.	489600
12	Installed common cooling water pump for CPP2 & CPP3 by replacing two separate pumps.	261120
	<b>Total Energy savings</b>	<b>2234338</b>