



ENVIRONMENTAL STATEMENT REPORT

YEAR 2015-2016



JSW CEMENT LIMITED
P.O Vidyanagar, Toranagallu
Dist.Bellary-583275

FORM-V

See Rule-14

Environmental Statement Report for the financial year ending the March 31, 2016

PART- A

i	Name and address of the owner /Occupier of Industry operation or process	Anil Kumar Pillai Director & CEO JSW Cement Limited Toranagallu Dt.Bellary Karnataka-583275
I a	Authorized person for the occupier	Mr.Rajendra Prasad AVP (Operation) JSW Cement Limited Toranagallu Dt.Bellary Karnataka-583275
ii.	Industry Category Primary (STC CODE) Secondary (STC CODE)	Primary (STC category)
iii.	Production Capacity (Units)	0.82 MTPA Slag grinding unit
iv.	Year of establishment	December 2008
v.	Date of last environmental statement submitted	02.09.2015 Vide our letter No: JSWCL/VDNR/KSPCB/2015/02, Dated 02.09.2015

PART- B

Water and Raw material consumption

A. Water

(i) Water consumption m³/day

Process m³/day : 9.60 (Average during 2015-16)

Domestic m³/day : 26.87 (Average during 2015-16)

(ii) Consumption per unit of production

Name of product	Process water consumption per unit of product-output (KL/MT)	
	During the previous financial year (2014-2015)	During the current financial year (2015-2016)
1.GGBS	0.003	0.004
2.Cement (PSC)	0.015	0.020

B. Raw material consumption

Name of the raw material	Name of product	Consumption of raw material per unit product output (MT of Cement)	
		During the previous financial year (2014-15)	During the current financial year (2015-2016)
Clinker	PSC	0.562	0.531
Gypsum	PSC	0.045	0.033
GBS	PSC	0.456	0.436
GBS	GGBS	1.138	1.075

PSC Production: 24326.25 MT/Year

Clinker consumption: 12932.610 MT/Year

Gypsum consumption: 812.73. MT/Year

GBS Consumption: 10624.29 MT/Year

PART –C

**Pollutant discharge to environment/unit of output
(Parameter as specified in the consent issued)**

S.N	Pollutants	Quantity of pollutants discharged (Mass/day) (tone/day)	Concentrations of pollutants in discharged (mass/volume) (kg/m ³)	Percentage of variation from prescribed standard with reason
a	Water	No waste water is generated from process. Water is used for cooling purpose and it is recycled. Domestic waste water treated in soak pit.		
b	Air			
(a) Ambient air quality monitoring				
1	PM-10	7.876X10 ⁻⁸	5.47X10 ⁻⁸	-8.7%
2	PM-2.5	3.589X10 ⁻⁸	2.49X10 ⁻⁸	-37.65%
(B) Stack emission				
1	VRM Stack	0.064	2.98x10 ⁻⁵	-20.5%

PART-D

HAZARDOUS WASTES

(As specified under Hazardous wastes/management& handling rule, 1989)

Hazardous waste	Total Quantity (Kg)	
	During the previous financial year 2014-2015	During the current financial year 2015-2016
(a) From process	Used oil	Used oil
	Nil	Nil
(b) From pollution control facility	Nil	Nil

PART-E
SOLID WASTE

S.N	Solid Waste	Total Quantity (Kg.)	
		During the previous financial year (2014-15)	During the current financial year (2015-16)
a	From Process	No solid waste is generated from the Cement manufacturing process	No solid waste is generated from the Cement manufacturing process
b	From Pollution control facility	All the collected material is recycled in process	All the collected material recycled in process
c	(i)Quantity recycled or reused	All the collected swept solid waste is reused in process.	All the collected swept solid waste is reused in process.
	(ii) sold	Nil	Nil
	(iii) Disposed	Nil	Nil

PART -F

Please specify the characterizations (in terms of composition quantity and Quantum) of hazardous as well as solid waste and indicates disposal practice adopted for both these categories of wastes.

Hazardous waste, used oil: Nil

Solid waste: Nil

PART –G

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

Following measures have been adopted for abatement of pollution conservation of natural resource:-

- 1. CONSERVATION OF LIME STONE (Clinker):** Utilization of Slag. We are using blast furnace slag, which is waste material of steel plant for the manufacturing of PSC cement. The slag is consumed for making the PSC & GGBS almost 796290 MT for the year of 2015-16.
- 2. CONSERVATION OF MINERAL GYPSUM:** Utilization of chemical gypsum. We have used fertilizer industry by product which is waste in nature and its chemical properties are as good as gypsum. The chemical gypsum is used for cement manufacturing process almost 720 MT of Chemical gypsum has been consumed in cement manufacturing process during the year of 2015-2016.
- 3. WATER CONSERVATION :**
Company is adopting best possible approaches to conserve water, which can be witnessed as:
 - i Dry Cement manufacturing process.
 - ii. The process water is used for machinery cooling and it is recycled to Maintain Zero Waste Water Discharge.
 - iii Rain water harvesting is being done in plant area for ground water Recharge.
- 4. AIR POLLUTION CONTROL MEASURES:**

Following measures have been taken to control of air pollution

A. Bag House, Bag filters Installed in the plant for the control of air pollution.

Photographs of Bag filter & List of Bag filters with their details given below:





Covered belt conveyer, silo with bag filter for the storage of cement & GGBS



Bag House provided in cement mill for the control of air pollution

List of Pollution Control Equipment

Pollution control (fusitive dust control) equipment installed at JSW Cement Ltd.Vijayanagar Works									
S.N	Location	Bag filter capacity (in m ³ /hr)	Fan Capacity (in m ³ /hr)	No of Bags	Inlet Dust Load	Out let Dust Emission	Type of Bags	Location Tag. No	MAKE
1	Dump hopper	13700	15000	110	15Gms/m ³	25mg/Nm ³	POLYSTER NON WOVEN PE 550 PE SILICON TERATMEN T	011BF-141	RECO
2	Groung hopper	12000	13500	110	15Gms/m ³	25mg/Nm ³		010BF142	RECO
3	Transfer tower	15000	16500	110	15Gms/m ³	25mg/Nm ³		010 BF143	RECO
4	Feed hopper - 1	15000	16500	132	15Gms/m ³	25mg/Nm ³		011BF145	RECO
5	Feed hopper -2	18000	20000	156	15Gms/m ³	25mg/Nm ³		011BF133	RECO
6	Reject building	15000	16500	110	15Gms/m ³	25mg/Nm ³		011BF136	RECO
7	Bag house	3750000	400000	2772	290Gm/Am ³	25mg/Nm ³		011BF137	THERMAX
8	Airslide 138,139,140 & BE 150	12000	13500	110	15Gms/m ³	25mg/Nm ³		011BF146	RECO
9	Silo-1 inside	5000	13500	36	15Gms/m ³	25mg/Nm ³		012BF 3	ENEXCO
10	Silo-1 Top	12000	13500	110	15Gms/m ³	25mg/Nm ³		012BF159	RECO
11	Silo-2 inside	5000	13500	36	15Gms/m ³	25mg/Nm ³		012 BF4	ENEXCO
12	Silo-2 Top	12000	13500	110	15Gms/m ³	25mg/Nm ³		012BF158	RECO
13	Bulkloading GGBS side (STATIONARY PACKER)	12000	13500	110	15Gms/m ³	25mg/Nm ³		013BF1	RECO
14	Bulkloading PSC side (STATIONARY PACKER)	12000	13500	110	15Gms/m ³	25mg/Nm ³		013 BF2	RECO
15	Roto packer top	25000	29000	192	<10Gms/m ³	50-60mg/Nm ³		641 BF1	INTENSIV FILTER
16	Roto packer	7500	8650	56	<10Gms/m ³	50-60mg/Nm ³		641BF2	INTENSIV FILTER
17	Silo-3 inside	4000	4600	30	<10Gms/m ³	50-60mg/Nm ³		K91BF3	INTENSIV FILTER
18	Silo-3 Top	7500	8650	56	<10Gms/m ³	50-60mg/Nm ³		K91BF1	INTENSIV FILTER
19	Paddle mixer building elevator - 1 (TOP)	5000	5750	36	<10Gms/m ³	50-60mg/Nm ³		611BF1	INTENSIV FILTER
20	Paddle mixer building elevator - 2 (TOP)	5000	5750	36	<10Gms/m ³	50-60mg/Nm ³		611BF4	INTENSIV FILTER
21	Paddle mixer building elevator - 1 (BOTTOM)	5000	5750	36	<10Gms/m ³	50-60mg/Nm ³		611BF2	INTENSIV FILTER
22	Paddle mixer building elevator - 2 (BOTTOM)	5000	5750	36	<10Gms/m ³	50-60mg/Nm ³		611BF5	INTENSIV FILTER
23	Paddle mixer building solid flow feeder - 1	7500	8650	56	<10Gms/m ³	50-60mg/Nm ³		611BF3	INTENSIV FILTER
24	Paddle mixer airslide discharge to silo-3 BE fan	5000	5750	36	<10Gms/m ³	50-60mg/Nm ³		611 BF6	INTENSIV FILTER
25	Silo-3 BIN Discharge air slide to roto packer BE	4000	4600	30	<10Gms/m ³	50-60mg/Nm ³		K91 BF2	INTENSIV FILTER

Schedule maintenance and monitoring of pollution control device: All the pollution control devices have been maintained as per scheduled maintenance by dedicated environment management team and monitoring of all these are done regularly as per KSPCB Norms

Regular Stack emission & AAQM monitoring is being done to check the emission levels. The results show that the emissions like PM-10, PM-2.5, SO₂, and NO₂ are well within limits



Emission data displayed at factory main gate



CEMS Installed at Cement mill stack

5. GREEN BELT DEVELOPMENT:

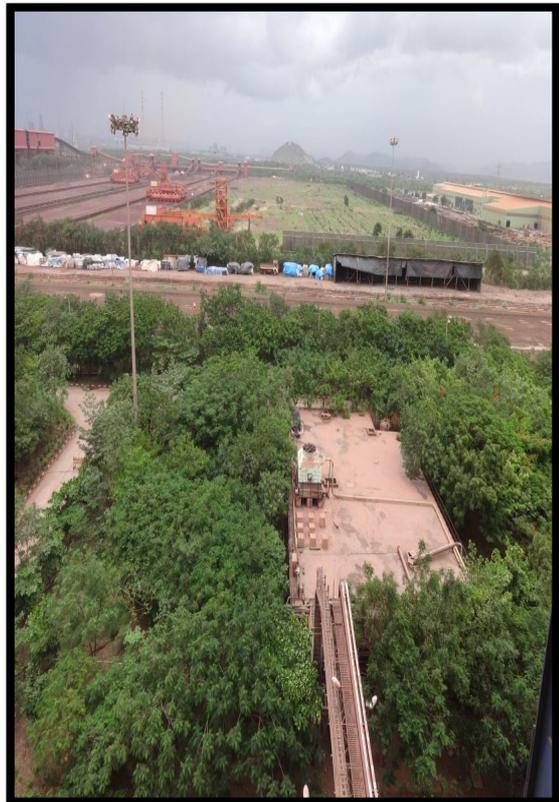
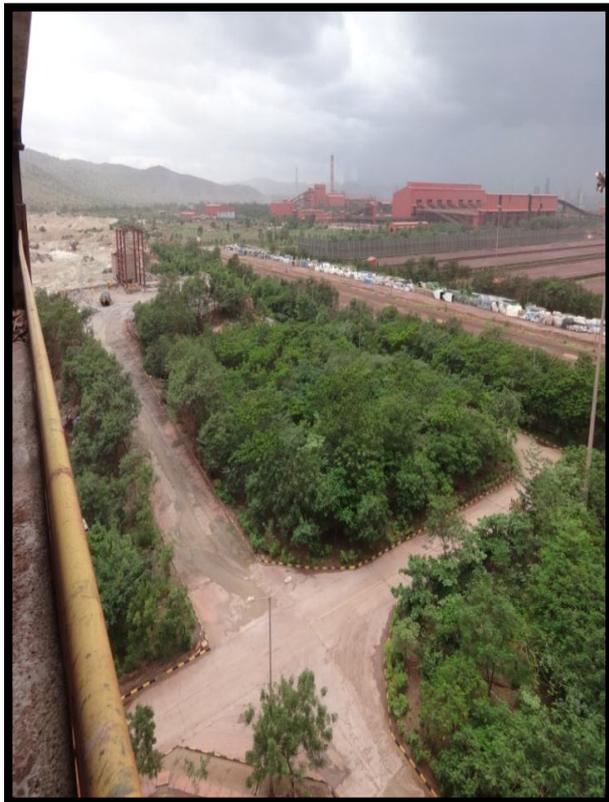
Plantation is being developed in following manner:

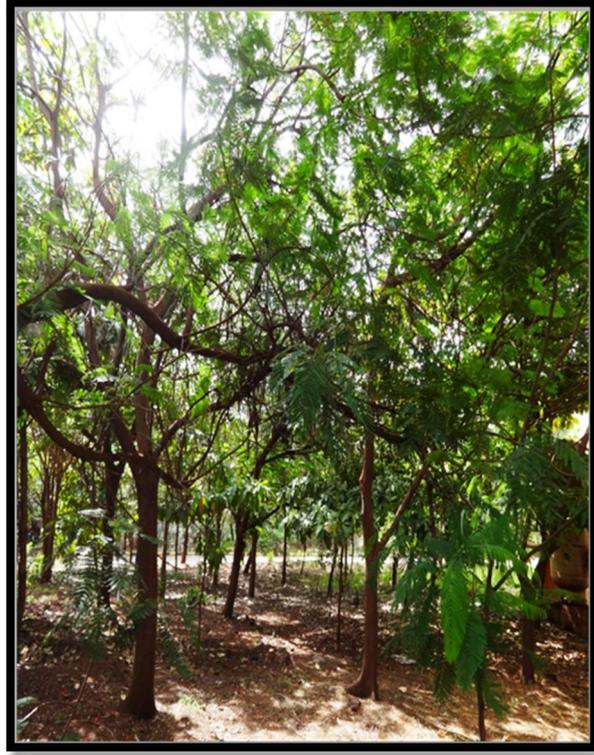
S.No.	Form of Plantation	Description
i	Shelter Belt plantation	All around the cement plant tree plantation is being done, Preference is being given to fast growing species including locally dominant species such as Neem, Pongamia, Alstronia etc
ii	Avenue plantation	Both side of internal roads
iii	Block plantation	Vacant land around facilities being developed

Greenbelt development will serve following purposes:

- i. Increase in fresh Oxygen supply
- ii. Acting as carbon sink thereby combating global warming through reduction in CO₂ emissions.
- iii. Improving microclimate, contributing to cooling effect and improve green cover in the Surrounding areas improving QOL (Quality of Life) with Increase in lung space and promoting healthy lifestyle.
- iv. Noise pollution control
- v. Aesthetics
- vi. optimum use of waste land

Green belt development





Green belt development in SCW Cement Limited ,Vijaynagar

6. SOLID WASTE MANAGEMENT

Following strategy is being implemented to handle solid waste of all kinds.

- a. Practicing principle of 2Rs i.e. Reduces & Reuse
- b. All the waste will be segregated on the basis on degradability/recyclability, than Accordingly they will be disposed. Bio degradable waste from Canteen & toilets composted and the Manure will be used for horticulture Purpose.
- c. All the hazarded waste will be disposed through the authorized recyclers.

7. GOOD HOUSE KEEPING

Following measures have been taken for good housekeeping at plant

- a. Regular roads sweeping is being carried out
- b. All the roads of plant have been concreted as well as flowers and plantation has been done side by the roads for the beautification
- c. Development of plantation and greenery.

8. SOCIO-ECONOMIC BENEFIT

- a. Indirect employment to entrepreneurs
- b. Direct employment to local residents
- c. Growth of local market and development of nearby villages in terms of CSR

M/s JSW Cement Limited is being operated on dry process technology, which is cost effective and environmentally clean technology. The advantage of dry process is also fuel economy and less water consumption. Additionally, the company has undertake various energy

efficiency improvement measures & process optimization 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. The stack emission from the plant controlled by equipment like Bag house and bag filter installed at various material transfer points to clean the process and arrest the fugitive emission. The particulate matter collected in the pollution control equipment is recycled in process and neutralizing the cost of operation of pollution control equipments and hence no cost impact on the production cost.

PART –H

Additional Measures /investments proposed for environmental protection including abatement of pollution, prevention of pollution.

1. Installation of Bio-Gas plant to convert domestic waste into useful energy resource



Bio- Gas Plant

2. 1000 Nos trees plantation done in 2015-2016
3. Usage of 100% GBF Slag replacing sand in cement plastering in construction to avoid Usage
4. Silos are under construction for the storage of cement & clinker.

PART -I

Any other particulars for improving the quality of environment

1. Environment Management System improvement

- (i) External certification of Management Systems conforming to ISO 50001: 2011 (Energy Management System) by M/s IRQS Mumbai
- (ii) Periodic review of EMS including compliance of environmental laws through periodic Management Review & Internal & external audits.
- (iii) Awareness program through various environment workshop Tree Plantation etc on world environment day.

2. Significant energy saving & other measures implemented during 2015-16

- (i) Replacement of conventional lights with LED to save energy
- (ii) Installation of LED Lamps in street light fitting by replacing with CFL lamps.
- (iii) Top soils conservation during excavation and utilized the soil for nursery development and tree plantation.
- (iv) Regular maintenance of vehicles to control of vehicles emission & noise.
- (v) Acoustic enclosures are provided at noise generating area to control of noise pollution
- (vi) Use of personal protective Equipment: All employees are provided with personal protective Equipments(PPEs), as per the requirement, such as workers working in plant area are provided with dust masks and in noise pollution areas with Ear plugs/Ear muff ,safety boots gloves welding goggles, Goggles and safety helmet are also being provided as per the requirement.

JSW CEMENT LIMITED.

Vijayangara Works
Vidyanagara ,Sandur Taluk
Bellary District. Karnataka

Ambient air quality monitoring report 2015-2016

	Near main gate		Behind Store		Near web bridge	
	PM-10 $\mu\text{g}/\text{m}^3$	PM-2.5 $\mu\text{g}/\text{m}^3$	PM-10 $\mu\text{g}/\text{m}^3$	PM-2.5 $\mu\text{g}/\text{m}^3$	PM-10 $\mu\text{g}/\text{m}^3$	PM-2.5 $\mu\text{g}/\text{m}^3$
MINIMUM	48.60	23.40	47.36	19.64	51.62	17.36
MAXIMUM	61.69	34.64	58.3	26.40	63.40	26.70
AVERAGE	54.54	28.11	52.72	24.05	56.94	22.64

JSW CEMENT LIMITED.

Vijayangara Works
Vidyanagara ,Sandur Taluk
Bellary District. Karnataka

Stack emission monitoring report for the year 2015-16

Manual Stack monitoring Report (Stack monitoring Kit VSS1)

S.N	Name of Stack	Stack Emission mg/Nm³		Standard KSPCB mg/Nm³
1	VRM Bag House Stack	Minimum	17.61	30.0
		Maximum	28.30	
		Average	23.85	

JSW CEMENT LIMITED.

Vijayangara Works
Vidyanagara ,Sandur Taluk
Bellary District. Karnataka

NOISE LEVEL REPORT 2015-2016

S.N	Location	Unit	Results		Standard	
			Day Time	Night Time	Day Time	Night Time
1	Main Gate	dB(A)	66.5	64.1	75 dB(A)	70 dB(A)
2	Back side gate	dB(A)	65.9	64.8		
3	Railway siding	dB(A)	64.5	63.9		
4	Slag yard	dB(A)	63.8	62.1		
5	Store	dB(A)	67.9	64.8		
6	Mill area	dB(A)	73.4	68.1		
7	Packing area	dB(A)	68.4	67.8		
8	Near JSSL	dB(A)	66.8	63.6		