JSW Cement Ltd

P.O. Vidyanagar, Tq : Sandur,
Dist. Ballari - 583275 Karnataka, India
Phone : 08395-241001
Fax : 08395-241003
Website : www.jsw.in

CIN - U26957MH2006PLC160839

To,
Regional Officer
Karnataka State Pollution Control Board,
Sy No. 597P, Ward No. 25,
4th Main Road, Near Dr. Vishnuvardhana Park,
Kuvempunagar, Bellary – 583104.

Date: 27/09/2023

Dear Sir,

Sub: - Submission of Environment Statement in Form-V for 4.0 MTPA cement grinding unit of JSW Cement Limited, reg.
Ref: - Combined Consent Order No AW-329792, dated 16.02.2022.
Environmental Clearance No: IA-J-11011/540/2017-IA-II(I) dated 01.02.2018

With reference to the above subject, please find enclosed here with the Environment Statement in Form-V for the financial year 2022-2023 for 4.0 MTPA cement grinding unit of **M/s JSW Cement Limited**.

Thanking You,

Yours Faithfully,
For JSW Cement Ltd

Rajkumar Dhempe
Plant Head

Copy to:
Member Secretary,
Karnataka State Pollution Control Board
#49, 4th & 5th floor
Parisara Bhavan, Church Street
BENGALURU-560001

ENVIRONMENT STATEMENT REPORT

(Form-V)

[Year 2022 - 2023]

REPORT BY

(JSW Cement Ltd, Vijayanagar Works)
Cement Grinding Unit
Vidyanagar (P.O) Toranagallu (V), Sandur (Tq)
Bellary - 583275

INTRODUCTION

Man is a part of nature, and not separate or independent; at the same time, man is unique in the influence he has over nature. Man derives all his food, clothing, shelter, and other amenities from nature. In that process, if he does not take care to protect and cherish nature, but decrease or destroys, he will find that his own life and that of his children is in jeopardy.

The environment, a word as it stands today is not simple; it is not a fashionable word, but has got established definitions incorporates limitless complexities, bear definite power to put everybody under a flood of worries and pushes us to plan for betterment with minimum problems. The environment is now catching for all, the industry, the government, the people. Hence, it is joint responsibility to protect, preserve the environment and avoid the perishing the natural treasures. At this critical junction of time and efforts, the Indian industry has fulfilled its commitment in maintaining the environmental integrity.

JSW Cement Limited considers itself responsible for Environment and Society. We are committed to emission reduction, climate protection, effective energy management, responsible use of resources and its conservation keeping in mind that "**Today's Need – Future of Our Children**".

The next few pages of this Environment Statement Report (ESR) of JSW Cement Limited is based on actual data and verified record, will present a picture of more optimism for environmental care than ever before.

JSW Cement Ltd: is the new diversification foray of JSW Group, a part of US $ 14 billion Group, has grown into various core economic sectors – Steel, Energy, Cement, Infrastructure, Paints and IT. The group has plants located in various parts of the world.

JSW group is fast adding capacity in steel and power manufacturing. As a result, large quantity of slag and fly ash is being generated, disposal of which caused serious problem. In order to use both these waste materials i.e. slag and fly ash, cement manufacturing is one of the best options. Slag can be used as much as 50 - 70% of clinker in cement manufacturing while fly ash is limited to be used maximum up to 35%, usually restricted to 30%.

JSW Cement's first plant was set up at Vijayanagar, District Bellary in Karnataka with a capacity of 0.60 million tonnes per annum in 2008, enhanced cement plant 3.60 MTPA in the year 2017 and again enhanced cement plant 4.0 MTPA in the year 2019. The plant uses the latest German Technology supplied by M/s KHD Humbolt Wedag. JSW Cement is a slag based blended cement, manufactured by using granulated blast furnace slag from the Group's steel plant and manufacturing Composite Cement by using fly ash from the Group's energy plant, saving valuable natural resources. This is a giant step by the company towards providing cement that is strong, durable and at the same time eco-friendly.

Besides producing Portland Slag Cement (PSC), the company also manufactures Ground Granulated Blast Furnace Slag (GGBS) and Composite Cement. GGBS is preferred by almost all concrete manufacturers across South India as an additive material for cement for better quality concrete. In order to achieve consistency in product quality, we have for the first time in the world adopted the technology of grinding both raw materials as well as cement by using Combi Flex Roller Press in finished mode with dynamic separator. This facility enables us to produce and supply much finer and uniform quality cement. The company has pioneered a modern plant for the first time in the world that uses Combi finish mode Roller Press Circuit for grinding and manufacturing both PSC and GGBS.

The slag cement and composite cement not only preserves the natural resources but also helps in improving the Durability of the Concrete Structures. Use of Slag Cement to produce Concrete can significantly improve durability of the concrete in several ways and consequently extend the life of concrete structures. During the life of the structure, the compressive strength of Slag Cement significantly increases well beyond the 28 days

specified strength more than the concrete made from OPC or PPC. Slag Cement has higher resistance to sulphate and chloride attack and also controls the expansion due to Alkali- Silica Reaction hence it is recommended for marine structures.

The dust emitted from various machines is controlled by state of art air pollution control equipments provided such as bag house and bag filters. The emission sources in the cement plant are mainly process dust emission and fugitive dust emissions.

Water Pollution is virtually absent in the cement plant as no liquid were generated from the manufacturing process. The water is used for cooling the machines/parts of the machines. A WTP – Cooling Water Tower is being maintained for the circulation of water for the entire plant. The major area of domestic water consumption inside the plant is for drinking, toilet, for canteen use. Domestic waste water is treated in STP and treated water is used in dust suppression & Green Belt Development.

The policy for the abatement of pollution by the government of India provides for submission of environment statement by all the industries. Environmental Statement is therefore an output of Environmental Audit.

So an effort has been made in this report to explain Environmental Statement for the financial year 2020-2021 ended 31st March 2020 as per Government of India notification GSR 329 (E), dated 13th March 1992 and amendment to Environmental (Protection) Rules 1986 and subsequent amendment there on.

ENVIRONMENTAL STATEMENT REPORT

[FORM-V]
(See rule 14)

PART-A

Name and address of the owner/ Occupier of the industry		:	Nilesh Narwekar Director & CEO JSW Cement Limited, Vijayanagar Works, Vidyanagar (P.O), Toranagallu (V), Bellary (District) Karnataka-583275
Operation process		:	Production of Cement
i. Industry category:	Primary- (STC code) Secondary- (STC code)	:	Red category
ii. Production category-units		:	4.0 MTPA (Cement Grinding Unit) (Portland Slag Cement, Ground Granulated Blast Furnace Slag and Composite Cement
iii. Year of establishment		:	2008
iv. Date of last environmental statement submitted		:	29.09.2022

PART-B

Water is from JSW Steel is the major source of water for this plant. Due to moderate rainfall in this region there is always drastic variation in the yield of water from these sources and almost this area is suffering from water shortage. In this view company is also operating a Sewage Treatment Plant to treat the entire domestic waste water of the factory and recycled and reused for dust suppression, and also for watering the tree plants and gardening for abatement of pollution in the area.

The water consumption for 2021-2022 is shown the table given below and the consumption of water is measured with the help of water meters which are installed at different points of sources.

The Raw material consumption and Cement production are tabulated as shown in the ***(Annexure – 1)***.

(i) Water Consumption (m^3/day):

Particulars	During Previous Financial Year (2021-2022)	During Current Financial Year (2022-2023)
Process Cooling	283.49	188.29
Domestic	41.64	44.9

Name of products	Process water consumption per unit of products output (m^3/ton)	
	During the previous financial year (2021-2022)	During the current financial year (2022-2023)
GGBS	0.022	0.013
OPC	0.020	0.029
CC	0.029	0.021

(ii) Raw material consumption: MT

Name of raw materials	Name of products	Consumption of raw material per unit of (Cement) output	
		During the previous financial year (2021-2022)	During the current financial year (2022-2023)
Clinker	GGBS/CC/OPC/PSC	0.158	0.152
Gypsum		0.010	0.011
Slag		0.869	0.852
Fly Ash		0.020	0.017

Name of raw materials	Name of products	During the previous financial year (2021-2022)	During the current financial year (2022-2023)
OPC	(PSC/C.HD/Power Pro) Blending	274803.8	221534.98
GGBS		373089.5	677572.93

PART-C

The impact of the cement plant pollution on the environment is limited to its immediate surrounding areas. In reality dust pollution is the only environmental problem in & around the plant. Although the dust produced while manufacturing of cement is nontoxic, nonflammable and non-corrosive. It does constitute a nuisance to a little extent. So the company has adopted several technological measures to completely avoid to the possible extent of the dust emissions at the source itself.

Water pollution is virtually absent as no liquid is generated during manufacturing process. The water here is used for cooling the machines/parts of the machine. A WTP – Cooling Tower is being maintained for the circulation of water for the entire plant. The major area of domestic water consumption inside the plant is for domestic (Drinking, Toilet, Colony and for Canteen use).

The company is monitoring the dust level concentration at all the emission sources by batch sampling technique. The quantity of pollutants discharged are calculated an average emission level taken from monthly stack monitoring reports.

Pollution discharged to environment/unit of output:

(Parameter as specified in the consent issued). *Annexure-2*

(i) Pollutants	Quantity of pollution discharged (mass/day)		Concentrations of pollutants in discharges (mass/volume)		Percentage of variation from prescribed standards with reasons
(a) Water	No Waste water is generated from the Cement Process				
(b) Air	kgs/day		mg/Nm³		
	VRM - PM	72.87	VRM - PM	25.1	No deviation
	RP1&2 - PM	137.73	RP1&2 - PM	26.8	
	RP3&4 - PM	132.58	RP3&4 - PM	25.5	

PART-D

Hazardous Wastes

[As specified under Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008]

Hazardous Wastes		Total Quantity	
		During the Previous Financial year (2021-2022)	**During the Current Financial year (2022-2023)**
(a) From Process	(a) Used Oil (Category 5.1)	Nil	Nil
	(b) Oil Soaked Cotton Waste (Category 5.2)	0.5 MT	Nil
	(c)Discarded Containers (Category 33.1)	Nil	0.5 MT
(b) From Pollution control Facilities	NA	Nil	Nil

The Waste oil generated at different sections in the plant is being collected in the hazardous waste oil platform especially made for the purpose. Waste oil so collected in the leak proof container (M.S. Barrels) is being sold to the authorized reprocessors/recyclers.

New Batteries purchased from the dealers/agency during the period April-2022 to March-2023 Form VIII has been submitted.

PART-E

Solid Wastes	Total Quantity (Cement Mill Bag house Dust)	
	During the previous financial year (2021-2022)	**During the current financial (2022-2023)**
(a) From process	No Solid Waste is generated from Process	No Solid Waste is generated from Process
(b) From pollution control facility	Collected materials in Baghouse and Bag filters have been recycled	Collected materials in Baghouse and Bag filters have been recycled
(c) Quantity recycled or re-utilized	100%	100%

PART-F

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

Hazardous waste:

- As per Hazardous and other wastes (management and transboundary movement) rules 2016, hazardous waste generated in the industry are of two types i.e.., is 5.1 Used oil and 5.2 Oil soaked cotton waste. All of these generated wastes are stored on the concrete platform in designated location and disposed to KSPCB/CPCB authorized vendors. *(Annexure-3)*

Solid waste:

- Solid waste in the industry is generated from the pollution control facilities and is been recycled.
- There is no solid waste generated during the process of cement manufacturing.
- Refractory bricks of hot air generation and Mild steel scrap generated is disposed to party for further use/ recycling.
- Sludge generated from the STP was utilized as manure after drying and composting along with garden waste.
- Energy Bin Sludge was utilized as manure and used in Green belt development

PART-G

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

- Cement Production is being operated on dry process technology, which is cost effective and environmentally clean technology. The advantage of dry process is also in fuel economy. The stack emissions from the plant are controlled by equipment like Bag Houses & Bag Filters are installed at various material transfer points and to arrest the fugitive emissions. The particulate matter collected in the pollution control equipment is recycled in process. *(Annexure-4)*
- Raw materials are being stored covered yard. *(Annexure-5)*
- The conveyor belts are fully covered and installed bag filters at transfer points for arresting the fugitive emissions. *(Annexure-6)*
- Clinker, Fly ash and cement is being stored in silos.
- Water sprinkling for dust suppression on the road, truck & bulker parking area and clinker unloading area in and around the plant is being done. *(Annexure-7)*
- STP treated water used for the plantation purpose and dust suppression. *(Annexure-8)*
- Rainwater harvesting Tank has been constructed at the plant area, for recharging ground reduce the consumption of surface water. *(Annexure-9)*
- Development of extensive green belt in and around the plant. *(Annexure-10)*

PART-H

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

- Continuous efforts are always being made to maintain the environment clean and dust free and we have upgraded pollution control systems and also adequate quantity of Pollution Control Equipment I.e. Bag House, Water Sprinkler, STP, Green Belt Development.
- Regularly we are monitoring ambient air quality, Noise level and stack monitoring & water analysis.
- Online Continuous Emission Monitoring system installed for 03 nos of Stacks and continuous ambient air quality monitoring system installed surrounding boundary zone by steel. ***(Annexure-11)***
- Construction of concrete in parking area inside the plant to reduce fugitive dust emission in Phase manner.
- Scheduled maintenance and monitoring of all Air Pollution Control Device's (APCD'S) like Bag Filters and Bag House are being regularly undertaken to ensure their efficient operations in order to keep emissions level within the prescribed limit.
- Rain Harvesting ponds of capacity 40000 litres are constructed for harvesting rain water during rainy season and utilized for green belt or ground water recharge.
- Green belt development and tree plantation is our on-going process. We are doing new plantation to increase the bio-diversity of the area.
- Total plant area is 150 acres out of which plantation will be done in 33% area which is 49.5 acres. Presently 19419 nos of plants and 39786 nos of shrubs in 22 acres have been planted inside the plant.
- Deployment of Sweeping Machine for cleaning the internal road for controlling fugitive emission.

PART- I

Any other particular in respect of environmental protection and abatement of pollution

- JSW Cement Limited has implemented of ISO 14001:2015 EMS and compliance monitored through periodic management review & internal and external audits. ***(Annexure-12)***
- Awareness programs like plantation activities, Slogan competition, drawing competition & Essay competition was organized for Employees & Families of Employees for awareness on environment protection on 5th June (World Environment Day). ***(Annexure-13)***
- Improvement in Ambient Air Quality through effective control on fugitive dust emission.
- Extensive green belt is being developing surround the boundary & inside plant premises.
- Distribution of saplings, tables through CSR activities in the schools of surrounding villages.

Annexure-1

Raw Material Consumption Financial Year 2022-2023

Raw Material Consumption	
Raw Material	**Quantity (MT)**
Clinker	546953
Slag	2934483
Gypsum	38526
Fly ash	61405

Production Report Financial Year 2022-2023

Production	
Product	**Quantity (MT)**
GGBS	2139796
PSC/C.HD/Power Pro	1067135
CC	368363

Power Consumption Plant for the Year 2022-2023.

Power Consumption	Units	114892050

Ambient Air Quality Report *(Annexure-2)*

Ambient Air Quality Report for the year 2022-2023															
Location	**Parameters**	**Limits**	**Apr-22**	**May-22**	**Jun-22**	**Jul-22**	**Aug-22**	**Sep-22**	**Oct-22**	**Nov-22**	**Dec-22**	**Jan-23**	**Feb-23**	**Mar-23**	**Avg**
Near Main Gate (A1)	**PM(10)**	**100 (µg/m³)**	63.6	66.9	66.8	67.7	63.2	65.4	66.9	62.6	64.5	67.24	63.6	62.1	**65.05**
	PM(2.5)	**60 (µg/m³)**	19.8	21.3	21.8	21.8	18.1	20.2	20.7	19.8	21.1	20.93	19.5	18.3	**20.28**
	SO2	**80 (µg/m³)**	10.5	9.8	12.1	10.1	8.8	12.2	13.6	9.9	11.3	10.38	13.8	12.8	**11.27**
	Nox	**80 (µg/m³)**	13	13	15.5	12	10.9	14.6	16.5	32.5	13.5	16.49	17.5	16.1	**15.97**
	CO	**4 (mg/m³)**	0.25	0.26	0.26	0.3	0.3	0.3	0.3	0.2	0.3	0.28	0.3	0.29	**0.28**
Near Back Gate (A2)	**PM(10)**	**100 (µg/m³)**	65.8	69.2	64.4	66	61.9	67.4	68.8	61.5	64.3	65.01	65.1	62.8	**65.18**
	PM(2.5)	**60 (µg/m³)**	20.1	22	19.1	19.9	19.4	20.6	21.1	18.5	21.4	21.63	18.1	16.2	**19.84**
	SO2	**80 (µg/m³)**	10.1	9.6	12.1	10.3	8.8	11.7	12.1	10	11.9	10.25	13.6	13.4	**11.15**
	Nox	**80 (µg/m³)**	11.6	12.5	15.1	12.5	11	14.4	14.6	12.3	14.4	16.62	16.2	15.5	**13.89**
	CO	**4 (mg/m³)**	0.27	0.31	0.29	0.3	0.3	0.3	0.3	0.3	0.31	0.3	0.24	0.22	**0.29**
Near Main Stores (A3)	**PM(10)**	**100 (µg/m³)**	61.3	63	62.1	63.8	61.7	65.6	66.2	59.8	62.3	60.37	68.5	66.7	**63.45**
	PM(2.5)	**60 (µg/m³)**	20	21.1	19.9	20.9	19.6	21.4	21.9	19.6	21.4	19.47	22.7	21.1	**20.76**
	SO2	**80 (µg/m³)**	9.3	10.3	12.1	9.5	8.5	12.3	13.2	10	10.8	10.64	13.8	13.1	**11.13**
	Nox	**80 (µg/m³)**	12.5	12.7	14.2	11.6	10.3	13.7	14.5	13.8	14.1	16.71	17.8	16.2	**14.01**
	CO	**4 (mg/m³)**	0.21	0.24	1.76	0.2	0.2	0.3	0.3	0.2	0.27	0.26	0.28	0.27	**0.37**
Near Chiller Room (A4)	**PM(10)**	**100 (µg/m³)**	62	64.7	64.6	62.1	63	65.6	64.8	62	61.9	61.74	67.4	65.7	**63.80**
	PM(2.5)	**60 (µg/m³)**	20.4	22.2	21.3	20.6	20.5	21.3	20.5	19.8	20.7	19.72	21.2	20.2	**20.70**
	SO2	**80 (µg/m³)**	9.8	9.5	12	9.9	9	11.4	11.4	11.6	9.8	9.79	13. 8	12.8	**10.64**
	Nox	**80 (µg/m³)**	12.2	12.6	14	12.3	12.2	14.9	13.2	14.2	12.4	16.31	17.5	16.1	**13.99**
	CO	**4 (mg/m³)**	0.21	24	0.25	0.3	0.3	0.3	0.3	0.2	0.25	0.25	0.34	0.32	**2.25**

Stack Emission Monitoring Report

Stack	Parameters	Limit	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		Oct-22		Nov-22		Dec-22		Jan-23		Feb-23		Mar-23	
	Date		12.04.2022	22.04.2022	10.05.2022	23.05.2022	14.06.2022	27.06.2022	08.07.2022	27.07.2022	10.08.2022	22.08.2022	16.09.2022	28.09.2022	08.10.2022	24.10.2022	07.11.2022	26.11.2022	12.12.2022	22.12.2022	05.01.2023	25.01.2023	09.02.2023	28.02.2023	06.03.0223	25.03.2023
VRM Stack	Particulate Matter	30 mg/Nm³	22.3	23.4	21.3	26.3	24.7	22.1	22.7	26.8	23.7	27.8	22.1	29.8	23.1	24.5	22.2	27.3	24.1	24.9	23.2	24.8	27.2	27.4	28.3	29.7
	Sox	100 mg/Nm³	18.6	20.1	15.2	21	16.2	24.6	16.4	29.4	17.4	30.4	17.5	15.3	17.8	18.8	16.4	21.7	19.6	17.1	16.8	19.2	15.6	15.9	12.6	16.8
	Nox	800 mg/Nm³	17.3	16.3	20.7	15.4	13.3	18.3	19.8	23.7	20.8	25.7	21.6	20.2	20.4	21.3	23.1	17.2	20.9	19.6	20.2	21.8	19.6	23.4	16.4	18.9
	Flow Rate	Nm³/hr	114806.25	123637.5	114806.25	123637.5	111273.7	120103	111273.7	129996	111273.7	129996	111273.7	143772.75	111273.7	143772.75	111273.7	143772.75	108676.25	102442.5	111273.7	111273.7	133175.25	121341.36	141739.225	127323.25
			12.04.022	22.04.2022	10.05.2022	23.05.2022	14.06.2022	27.06.2022	13.07.2022	27.07.2022	10.08.2022	22.08.2022	16.09.2022	28.09.2022	8.10.2022	24.10.2022	07.11.2022	26.11.2022	12.12.2022	22.12.2022	05.01.2023	24.01.2023	09.02.2023	25.02.2023	06.03.2023	25.03.2023
RP 1& 2 Stack	Particulate Matter	30 mg/Nm³	25.4	25.6	25.4	25.5	26.2	23.6	28.4	28.4	29.4	29.4	28.4	28.3	29.3	30.2	24	24.8	28.6	28.4	21.4	23.2	25.7	27.9	26.7	28.8
	Sox	100 mg/Nm³	30.6	25.4	30.6	28.4	32.1	26.4	31.5	32.6	32.5	33.6	32.5	17.3	32.5	34.2	18.1	23.3	35.6	34.1	23	17.7	17.2	19.8	13.6	13.6
	Nox	800 mg/Nm³	37.2	20.6	37.2	36.7	35.8	32.5	40.8	36.8	41.8	37.8	34.6	23.4	41.8	43.4	29	19.2	40.2	41.8	19	20.3	21.4	24.7	18.6	19.9
	Flow Rate	Nm³/hr	225020.25	214634.7	225020.25	214634.7	228482.1	249253.2	228482.1	125318.97	228482.1	125318.97	228482.1	254792.16	228482.1	254792.16	4.3	254792.16	221558.4	190401.75	228482.1	228482.1	249943.37	227443.55	262062.045	246283.72
			12.04.2022	22.04.2022	10.05.2022	23.05.2022	14.06.2022	27.06.2022	08.07.2022	27.07.2022	10.08.2022	22.08.2022	16.09.2022	28.09.2022	8.10.2022	24.10.2022	07.11.2022	26.11.2022	12.12.2022	22.12.2022	05.01.2023	24.01.2023	09.02.2023	25.02.2023	25.03.2023	25.03.2023
RP 3 & 4 Stack	Particulate Matter	30 mg/Nm³	23.6	23.3	26.2	22.2	25.5	24.6	25.8	29.4	23.7	27.8	19.5	27.3	27.4	28.2	19.6	24.1	28.2	28.6	29.1	22.1	27.2	24.8	25.3	28.8
	Sox	100 mg/Nm³	22.4	20.4	29.2	19	20	22.1	27.2	23.7	17.4	30.4	22.4	16.9	27.2	29.3	22.4	21.7	29.6	29.4	29	16.2	14.8	18.6	12.2	14.6
	Nox	800 mg/Nm³	18.6	19.3	40.7	20.3	16.7	18.4	41.3	22.6	20.8	25.7	26.8	20.2	41.6	43.8	26.5	20.1	18.2	43.4	43	20	23.4	21.4	18.3	19.9
	Flow Rate	Nm³/hr	218096.55	214634.7	218096.55	214634.7	214631.7	232713.05	214634.7	276948	111273.7	129996	214634.7	219481.29	214634.7	219481.29	214634.7	219481.29	218096.55	197325.15	214634.7	214634.7	238175.28	230637.94	247176.09	246283.72

AMBIENT NOISE LEVEL (PLANT) [Leq Value in dB(A)]

Noise Level Monitoring Report (2022-2023)																						
	Apr-22		May-22		Jun-22		Jul-22		Aug-22		Sep-22		Nov-22		Dec-22		Jan-23		Feb-23		Mar-23	
	Avg in dB(A) Leq																					
Locations	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
Near Main Stores	62.8	60.9	66.2	59.8	66.2	59.8	60.4	54.4	46.9	45.9	70.5	67.1	56.3	48.4	50.3	48.4	66.9	62.6	58.8	48.5	65.7	60.5
Near Main Gate	64.8	61.1	67.9	58	71.8	62.4	62	57.7	49	42.9	68.2	66	59.1	54.3	53.7	49.4	65.8	60.2	69.9	61.8	56.6	51.7
Near Back Gate	62.7	62.1	71.8	62.4	67.9	58	57.8	53.4	46.9	47.4	70.2	67.1	54.7	50.9	59.6	53.3	67.8	63.3	62.6	54.7	44.3	40.6
Near Chiller Room	59.7	63.5	64.7	60.6	64.7	60.6	69.2	66.4	49.2	49.1	68.3	67.6	61.3	56.3	68.8	54.8	65.7	62.8	63.6	54.9	69.6	62.9

Details of Pollution Control Measures installed at various location *(Annexure-4)*

S. No.	Location of PCM	PCM
1	Vertical Roller Mill	Bag House
2	Roller Press 1 & 2	Bag House
3	Roller Press 3 & 4	Bag House
4	Clinker Silo	Bag Filter
5	Cement Silo (5 no's)	Bag Filter
6	Fly ash Silo	Bag Filter
7	Packing House	Bag Filter
8	All transferring points of raw material handling and product.	Bag Filter
9	Sewage treatment plant for domestic sewage	Sewage treatment plant (60 KLD)
10	Green belt development in the premises	Green belt development

Raw materials are being stored covered yard *(Annexure-5)*

Conveyor belts are fully covered and Installed bag filters at all transfer points *(Annexure-6)*

Water sprinkling for dust suppression *(Annexure-7)*

Sewage Treatment Plant *(Annexure-8)*

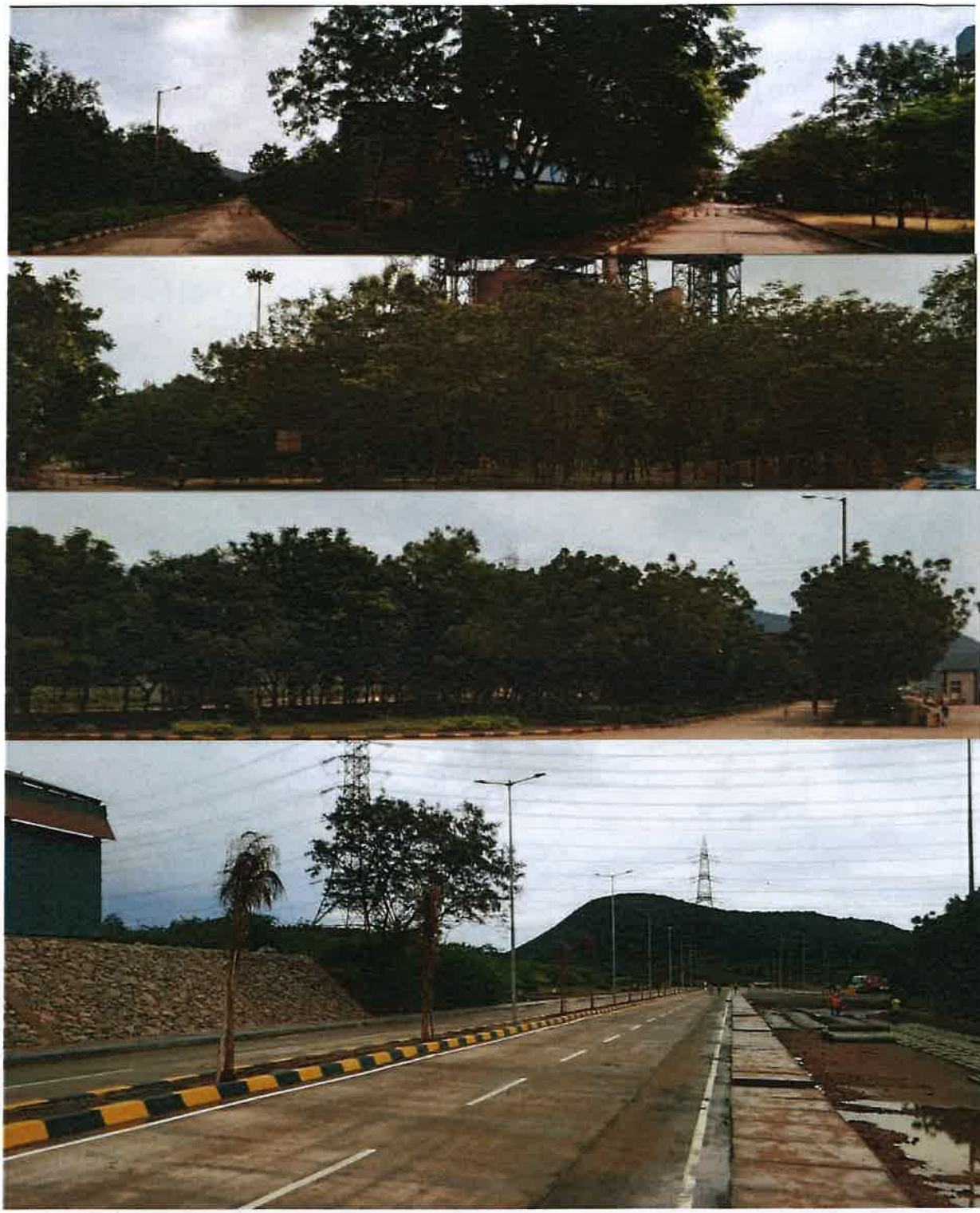
Rainwater harvesting Tank for water conservation *(Annexure-9)*

Green belt development *(Annexure-10)*

Year wise plantation at Plantation

S.No.	Year	No. of Shrubs Plantation	No. of Trees Plantation	Lawn area in Sqmt
1	2009-10	500	500	-
2	2010-11	1000	1000	-
3	2011-12	2000	1000	-
4	2012-13	2000	1000	-
5	2013-14	2500	1200	-
6	2014-15	1500	1000	-
7	2015-16	1500	300	-
8	2016-17	1500	220	-
9	2017-18	6750	326	637
10	2018-19	7850	5297	2030
11	2019-20	4233	1248	1080
12	2020-21	3768	2048	300
12	2021-22	4685	4280	-
13	2022-23	15000	1100	3000
Total		54786	20519	7047

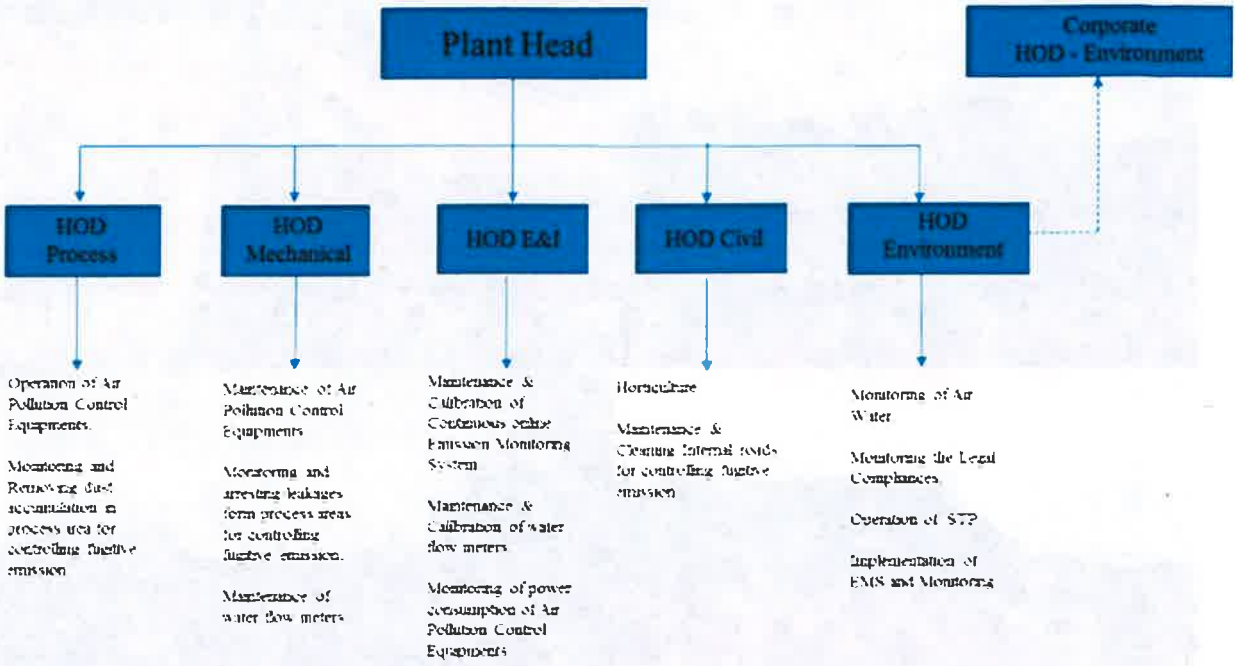
Total area: 150 acres.
Total area of Green Belt Development: 22 acres (Until March 2023)
Types of Species planted: Tecomo goudichoudi , Nerium pink oberoy, Tabernamopntana Single, Cizelpenia, Alstonia, Pheltophorum, Neem, Samanea Saman, Ficus Regenald, Areca Plam, Conocarpus, Tacoma stans, Nerium oleander, Tabibia Rosea, Gulimor, Cardia, Banumia, Ficus banjamine, Tree Jasmine, Raintree, and Teak.






Online Continuous Emission Monitoring System and data is displayed near main gate ***(Annexure-11)***


Details of Environmental Cell



Environment Management System ISO 14001:2015 *(Anexure-11)*

IRCLASS
SYSTEMS AND SOLUTIONS PRIVATE LIMITED

CERTIFICATE OF APPROVAL

Issued by Indian Register Quality Systems
(A Division of IRCLASS Systems and Solutions Private Limited)

This is to certify that the Environmental Management Systems of

Organisation: JSW Cement Limited

Address: Vijayanagar Works:
Vidaynagar (P.O),
Toranagallu (V), Sandur (Tq),
Bellary, Karnataka - 583 275

has been assessed and found conforming to the following requirement

Standard: ISO 14001:2015

Scope: Manufacturing of Portland Slag Cement (PSC), Ground Granulated Blast Furnace Slag (GGBS), Ordinary Portland Cement (OPC), Composite Cement (CC), Dry Mix Mortar (DMM) & Screen Slag

Certificate No.: IRQS/220300582

Initial Certificate Date : 21/05/2013

Current Date of Granting : 04/05/2022

Expiry Date : 03/05/2025

Shashi Nath Mishra
Head IRQS

Head Office: 52A, Adi Shankaracharya Marg, Opp. Powai Lake, Powai, Mumbai 400 072, India.

Corporate Environment Policy

JSW Cement Ltd. (JSWCL) is committed to meeting the needs of customers and other stakeholders at large in an environmentally sound manner, through continuous improvement in environmental performance in all its activities. Management at all levels, jointly with employees, is responsible and will be held accountable for company's environmental performance.

Accordingly, JSWCL aims to:

Protect the environment and prevent pollution through implementing best available technologies and practices.

Ensure safety of its products and operations for the environment by using standards of environmental safety, which are scientifically sustainable and commonly acceptable.

Develop, introduce and maintain environmental management systems across the company to meet the company standards as well as statutory requirements relating to environment and verify compliance with these standards through regular auditing.

Assess environmental impact of all its activities and set continual improvement objectives and targets and review these periodically to ensure that these are being met at the individual unit and corporate level.

Reduce waste, conserve energy and explore opportunities for reuse and recycle.

Optimum utilization of industrial waste as alternative raw materials and fuel to conserve natural resources

Encourage efficient use of natural resources including energy, water and utilities, fuels, raw materials and food.

Promote use of renewable energy

Be a water positive unit by adopting rainwater harvesting in and around the facilities

Integrate the consideration of environmental concerns and impacts at the design, planning and operational stages of our activities.

Develop and maintain procedures/ processes to bring into focus any infringement/ deviation/ violation of the environmental or forest norms/ conditions to the Board of Directors and stakeholders at large

Involve all employees in the implementation of this Policy and provide appropriate training. Provide for dissemination of information to employees on environmental objectives and performance through suitable communication networks.

Encourage suppliers & service providers to develop and employ environmentally superior processes and ingredients and co-operate with other members of the supply chain to improve overall environmental performance.

Work in partnership with external bodies and Government agencies to promote environmental care, increase understanding of environmental issues and disseminate good practices.

CAPITAL COST INVESTMENT ON POLLUTION CONTROL MEASURES UP TO 31st March 2020					
Sl. No	Description	Qty	Unit Rate	Total in Lakhs	Total in Crores
Air Pollution control measures in RP mill area					
a	Bag House RP mill area	4	19679100	78716400	7.87
b	Bag Filter (KHD)	2	7690400	15380800	1.54
c	Bag Filter (Rieco)	1	5200000	5200000	0.52
d	Beumer	1	500000	500000	0.05
e	Silo extraction & packing plant	1	12012000	12012000	1.20
f	On line Stack dust monitor system	2	451350	902700	0.09
Total Cost					**11.27**
Air Pollution control measures in VRM area					
a	VRM Bag house cost	1	38616440	38616440	3.86
b	Packing plant bag filters CEMPPBF024	4	1160078	4640312	0.46
c	Reject building bag filter	2	920114	1840228	0.18
d	Feed group Bag filter	5	2735902	13679510	1.37
e	Bag filter transfer point	2	547070	1094140	0.11
f	On line Stack dust monitor system	1	1001596	1001596	0.10
Total Cost					**6.09**
Expenditure on belt covering, material storage sheds (Fugitive emission contro					
a	CSP Sheds (Tones)	265	66000	17490000	1.75
b	Gypsum Sheds (Tones)	550	66000	36300000	3.63
c	Belt Conveyor shed (Tones)	620	66000	40920000	4.09
Total Cost					**9.47**
STP (Sewage Treatment Plant) 60 KLD			2068776	2068776	0.21
Rain water harvesting			500000	500000	0.05
Paving /concreating of internal roads (Fugitive emission control measures)			41000000	41000000	4.10
Environment monitoring equipment's			552000	552000	0.06
Green belt development			4500000	4500000	0.45
Total Cost					**4.86**
Grand Total Cost on Environment					**31.69**

RECCURING COST INVESTMENT ON POLLUTION CONTROL MEASURES FROM Oct-2022 TO March-2023		
Sl. No	Description	Amount in Lakhs
1	Afforestation	14.0
2	Environment Monitoring	11.0
General Environment Management		
3	Bag Filter & Bag House Maintenance	74.0
4	STP Operation & Maintenance	6.0
5	STP Power Consumption	4.6
6	Environmental Awarness	2.3
7	Water Tanker for Sprinkling	5.6
Total		**92.5**
Grand Total		**117.5**